BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition by Metropolitan Fiber Systems of Florida, Inc. for arbitration with BellSouth Telecommunications, Inc. concerning interconnection rates, terms, and conditions, pursuant to the Federal Telecommunications Act of 1996.	DOCKET NO. 960757-TP
In Re: Petition by AT&T Communications of the Southern States, Inc. for arbitration of certain terms and conditions of a proposed agreement with BellSouth Telecommunications, Inc. concerning interconnection and resale under the Telecommunications Act of 1996.	DOCKET NO. 960833-TP
In Re: Petition by MCI Telecommunications Corporation and MCI Metro Access Transmission Services, Inc. for arbitration of certain terms and conditions of a proposed agreement with BellSouth Telecommunications, Inc. concerning interconnection and resale under the Telecommunications Act of 1996.	DOCKET NO. 960846-TP

THIRD DAY - MORNING SESSION

VOLUME IX

PAGE 1277 through 1497

PROCEEDINGS:	HEARING
BEFORE:	COMMISSIONER J. TERRY DEASON COMMISSIONER SUSAN F. CLARK COMMISSIONER E. LEON JACOBS, JR. COMMISSIONER JOE GARCIA
DATE:	Tuesday, January 28, 1998
TIME:	Commenced at 9:00 a.m.
PLACE:	Betty Easley Conference Center Room 151 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	NANCY S. METZKE, RPR, CCR

APPEARANCES:

(As heretofore noted.)

I N D E X

WITNESSES

EXHIBITS - VOLUME IX

PROCEEDINGS

(Transcript continued in sequence from Volume VIII)

COMMISSIONER DEASON: Call the hearing to order. Mr. Hatch.

MR. HATCH: AT&T would call Mr. Wayne Ellison.

COMMISSIONER DEASON: Has Mr. Ellison been sworn?

MR. HATCH: No, sir.

CHAIRMAN DEASON: Please stand and raise your right hand.

(Whereupon, Wayne Ellison was duly sworn by Commissioner Deason)

Whereupon,

WAYNE ELLISON

was called as a witness on behalf of AT&T and, after being duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HATCH:

Q Could you state your name and address for the record, please?

A My name is Wayne Ellison. My address is 1200 Peachtree Street, Atlanta, Georgia.

Q By who are you employed and in what capacity?

A I'm employed by AT&T. I'm a district manager in

the law and government affairs organization.

Q Did you prepare and cause to be filed direct testimony in this proceeding and rebuttal testimony in this proceeding?

A Yes, I did.

Q Did you have any exhibits attached to your direct testimony?

A Yes, I did.

Q Were those prepared by you or under your supervision?

A Yes, they were.

Q Did you have any exhibits attached to your rebuttal testimony?

A Yes, I did.

Q Were they prepared by you or under your supervision?

A Yes, they were.

MR. HATCH: Mr. Chairman, could I have the direct exhibits marked for identification? That would be WE-1 through W -- and WE-2 for the direct, and -- Actually that was rebuttal.

COMMISSIONER DEASON: There's just one exhibit in the direct, is there not?

MR. HATCH: Yes, sir, I believe so.

COMMISSIONER DEASON: Okay. The direct exhibit

will be identified as exhibit 46, and the rebuttal exhibit will be exhibit 47.

MR. HATCH: Thank you, sir.

BY MR. HATCH:

Q Do you have any changes or corrections to your testimony or exhibits at this time?

A Yes. I have one correction to my rebuttal testimony on page 9, line 20. At the end of the line 20 the numeral four dash should be changed to the numeral two dash; and then on line 21, HDSL should be changed to ADSL.

Q Do you have any other changes or corrections?

A No, I do not.

Q If I asked you the questions that are in your direct and rebuttal testimony, would your answers be the same?

A Yes, they would.

MR. HATCH: Mr. Chairman, I'd request that the direct and rebuttal testimony of Mr. Ellison be inserted in the record as though read.

COMMISSIONER DEASON: Without objection the direct and rebuttal testimony will be so inserted.

DIRECT TESTIMONY OF

WAYNE ELLISON

ON BEHALF OF

AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC.

DOCKET NOs: 960833-TP/960846-TP/971140-TP

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND TITLE.

A. My name is Wayne Ellison. My business address is 1200 Peachtree Street N.E., Atlanta, Georgia 30309. I am employed by AT&T as a District Manager in the Law and Government Affairs organization.

Q. WOULD YOU PLEASE STATE YOUR EXPERIENCE?

A. I have 33 years experience in the telecommunications industry including 20 years as a manager for C & P Telephone Company, now a part of Bell Atlantic, and 13 years with AT&T. At C & P Telephone Company, I worked for 7 years in the outside plant engineering organization, where I was responsible for loop planning and design, construction engineering, and plant utilization. I also worked 13 years in the C & P Telephone Company costs and economics organization. My primary responsibility within the costs and economics organization was to supervise the analysis of service costs in support of the Company's rate filings. During my time in the costs and economics organization I also administered plant purchases and

sales transactions, negotiated borderline billing agreements, and performed special separations analysis.

For the past thirteen years I have been employed by AT&T. The majority of my time with AT&T has been devoted to the advocacy of AT&T's positions as a regulatory witness and to the analysis of information and issues in support of those positions. In that regard I have been given the specific responsibility for determining acceptable prices for BellSouth's network elements, transport and termination, means of interconnection, and access to poles, ducts, conduits, and rights-of-way under the 1996 Telecommunications Act (the "Act"). To meet this later responsibility, I have participated in AT&T's negotiations with BellSouth and have analyzed the cost data that BellSouth has provided to AT&T or to state regulatory authorities throughout BellSouth's nine state serving area.

Q. BASED UPON YOUR PRIOR EXPERIENCE, DESCRIBE YOUR LEVEL OF FAMILIARITY WITH BELLSOUTH COSTS.

A. I am very familiar with the basic procedures and methods followed by BellSouth to develop service costs. BellSouth's procedures and methods are often in fact very much like the procedures and methods I followed at C & P Telephone Company to perform the same functions.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION REGARDING APPROPRIATE BELLSOUTH PRICES UNDER THE TELECOMMUNICATIONS ACT?

A. Yes. I provided testimony in the AT&T/BellSouth arbitration proceeding, Docket No. 960833-TP. I have also provided testimony regarding this subject in state regulatory proceedings in Alabama, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to:

1. Describe the appropriate cost standard for determining network element and collocation rates that comply with the 1996 Telecommunications Act (the "Act").

2. Present AT&T's price recommendations for collocation and the various unbundled network elements to be addressed in this proceeding. AT&T's recommendations are designed to fully compensate BellSouth for use of the Company's various capabilities, while concurrently promoting the greatest possible development of price and service competition to the maximum number of Florida consumers in the shortest possible time frame.

REQUIREMENTS OF THE TELECOMMUNICATIONS ACT OF 1996

Q. WHAT ARE THE RELEVANT REQUIREMENTS OF THE TELECOMMUNICATIONS ACT OF 1996 WITH RESPECT TO THE CAPABILITIES BEING PRICED IN THIS PROCEEDING?

A. Sections 251(c)(3) and 251(c)(6) of the Act require that BellSouth provide collocation and network elements on rates, terms, and conditions that are just, reasonable, and nondiscriminatory. Section 252(d)(1) specifies that just and reasonable rates for interconnection and network elements shall 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, shall be nondiscriminatory, and may include a reasonable profit.

Q. HOW SHOULD COST-BASED RATES BE DETERMINED?

A. Rates should be set to recover Total Element Long Run Incremental Cost (TELRIC), plus a reasonable contribution to forward-looking common costs.

Q. WHAT IS TELRIC?

A. TELRIC is the additional cost that would be borne by a wholesale-only firm using efficient, forward-looking technology and operating practices to produce the

current output of an unbundled network element. This definition refers to the total additional cost of providing the current volume of output of a UNE, which must then be divided by the current volume to yield unit cost for rate purposes.

Q. WHY IS IT NECESSARY THAT TELRIC REFLECT ONLY EFFICIENT, FORWARD-LOOKING COSTS?

A. Prices must be set at efficient, forward-looking costs to allow consumers to receive the benefits of competition. Most importantly, prices at efficient, forward-looking costs provide such benefits by allowing competition to drive BellSouth's retail rates to efficient price levels. Such prices further enhance competition by requiring BellSouth to operate efficiently and compete effectively. Prices at efficient, forward-looking costs also encourage efficient market entry. Finally, prices at efficient, forward-looking costs limit BellSouth's ability to engage in anti-competitive pricing behavior. These outcomes precisely match the pro-consumer goals of the Act.

Q. WHY IS IT NECESSARY THAT TELRIC REFLECT ONLY INCREMENTAL COST?

A. Incremental cost is the additional cost of providing a network element, as an addition to the existing mix of network elements otherwise being provided. Where there are economies of scope among network elements, incremental cost

will be less than the cost of providing the network element on a stand alone basis. Basing prices on incremental rather than stand alone cost shares such economies of scope with purchasers of network elements, as would be required in a competitive market.

Q. WHAT IS MEANT BY NON-RECURRING CHARGES?

A. With regard to this proceeding, a non-recurring charge is a charge levied by BellSouth on new entrants to install, modify, or disconnect network elements and other capabilities provided new entrants. Such charges are normally in addition to recurring charges that new entrants pay on a monthly or usage basis to actually use such capabilities.

Q. WHAT CONSIDERATIONS ARE INVOLVED IN ESTIMATING TELRIC FOR COSTS PROPOSED TO BE RECOVERED THROUGH NON-RECURRING CHARGES?

A. All of the TELRIC principles apply in developing prices to recover the costs incurred in providing nonrecurring services. The estimated costs must be the incremental costs of performing the studied activity, using efficient technologies and operating procedures.

Q. ARE THERE SPECIAL CONCERNS WHICH SHOULD BE CONSIDERED BY THE COMMISSION WHEN DECIDING THE APPLICABILITY OR LEVEL OF NON-RECURRING CHARGES ASSESSED NEW ENTRANTS?

A. Yes. Up-front charges imposed on new entrants can pose a significant barrier to entry. As a result, incumbent local exchange carriers, including BellSouth, have an incentive to load as many costs as possible into non-recurring charges to discourage or delay entry. This Commission must therefore look very closely at every BellSouth proposal for non-recurring charges to assure that such charges are in fact appropriate, and that the charge reflects only the efficient, incremental cost of performing such work.

THE AT&T RATE PROPOSAL

Q. DO YOU HAVE A RECOMMENDATION REGARDING SPECIFIC RATES THE COMMISSION SHOULD ADOPT IN THIS PROCEEDING?

A. Yes. Non-recurring charges for customer migration, identified as Issue 2 in Appendix "A" of the procedural order, should be based on the recommendations of Mr. Lynott. Non-recurring charges for the Network Interface Device (NID), 2W/4W loop distribution, and DS1 Transport (for use with Directory Assistance and Dedicated Transport) should also be based on the recommendations of Mr.

Lynott. Physical and virtual collocation rates should be based on the recommendations of Mr. Klick and Mr. Bissell. Prices not addressed by these witnesses should be based on the best available evidence of BellSouth's forward-looking economic costs. AT&T will recommend prices for these additional elements following review and analysis of the BellSouth cost studies. Exhibit WE-1 reflects AT&T's specific recommendations.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BEFORE THE

FLORIDA PUBLIC SERVIC COMMISSION

REBUTTAL TESTIMONY OF

WAYNE ELLISON

ON BEHALF OF

AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC.

Docket No. 960833-TP/960846-TP//960757-TP/971140-TP/960916-TP

Filed: December 9, 1997

REBUTTAL TESTIMONY OF

WAYNE ELLISON

ON BEHALF OF

AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC.

DOCKET NOs: 960833-TP/960846-TP/960757-TP/971140-TP/960916-TP

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND TITLE.

A. My name is Wayne Ellison. My business address is 1200 Peachtree Street N.E., Atlanta, Georgia 30309. I am employed by AT&T as a District Manager in the Law and Government Affairs organization.

Q. ARE YOU THE SAME WAYNE ELLISON THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to:

1. Critique BellSouth's cost studies. I will demonstrate that the cost studies submitted by BellSouth in this proceeding contain methodological and data flaws. These flaws often lead to greatly overstated BellSouth costs, rendering BellSouth's studies unfit for use in establishing rates. These flaws include (1) overstated return on investment, depreciation, shared, and common costs, (2) excess spare facility requirements, (3) failure to reflect most efficient provisioning practices, and (4) overstated vendor costs. As a result, most

BellSouth cost studies do not reflect BellSouth's forward-looking economic costs.

2. Critique BellSouth's proposed rates. I will demonstrate that BellSouth's proposed rates are sometimes based on inappropriate embedded cost methodologies, in other cases based on inflated cost results, and in other cases structured in a discriminatory manner, rendering each such rate proposal unacceptable.

3. Present and describe AT&T's complete rate proposal, based on our review of BellSouth's studies and studies sponsored by AT&T/MCI witnesses. The rates proposed by AT&T are designed to fully compensate BellSouth for use of BellSouth's various capabilities, while concurrently promoting the greatest possible development of price and service competition to the maximum number of Florida consumers.

Q. HAVE YOU REVIEWED THE BELLSOUTH COST STUDIES SUBMITTED IN THIS PROCEEDING?

A. Yes.

Q. BASED ON YOUR REVIEW, DID YOU IDENTIFY PROBLEMS COMMON TO ALL OF BELLSOUTH'S STUDIES?

A. Yes. All of BellSouth's *recurring* cost studies incorporate incorrect return on investment, depreciation, shared, and common cost factors. All of the company's *non-recurring* cost studies incorporate incorrect shared and common cost factors. For these reasons alone every study provided by BellSouth requires modification. Recommended changes to BellSouth's depreciation and return factors are included in the testimonies of AT&T

witnesses Majoros and Cornell, respectively. AT&T witness Lerma provides recommended changes to BellSouth's shared and common factors.

Q. DID YOU ALSO IDENTIFY PROBLEMS SPECIFIC TO INDIVIDUAL BELLSOUTH STUDIES?

A. Yes. In addition to the common problems noted above, there are additional problems specific to BellSouth's loop studies (ADSL loops, HDSL loops, 2-wire distribution, 4-wire distribution), BellSouth's local switching study (4-wire port and features), BellSouth's NID studies, each BellSouth non-recurring study, BellSouth's physical collocation study, and BellSouth's virtual collocation study.

Q. WHAT ADDITIONAL PROBLEMS DID YOU IDENTIFY WITH BELLSOUTH'S LOOP SUBMISSIONS?

A. BellSouth's loop cost submissions, including the cost studies for two and four wire loop distribution, ADSL loops, and HDSL loops, have a number of additional problems. First, the study procedure used by BellSouth to determine the costs of each element is simply incapable of producing accurate results. Second, each study is based on a "hypothetical" loop derived from a loop sample that excludes the characteristics of BellSouth's lowest cost loops. Third, each study reflects excessive spare facility costs because BellSouth used incorrect utilization factors. Fourth, each study incorporates overstated unit cost factors and drop wire costs. Each of these shortcomings increase BellSouth's cost estimates.

Q. WHY IS THE BELLSOUTH LOOP STUDY PROCEDURE INCAPABLE OF PRODUCING ACCURATE RESULTS?

A. BellSouth's loop study procedure is fatally flawed—for all voice grade loop cost calculations—because the design of the loop cost model is defective. BellSouth's loop cost model estimates average loop cost by, (1) applying various estimated unit cost and utilization ratios to, (2) a "hypothetical" loop derived from sampled characteristics of a small number of loops, (3) modified to reflect BellSouth's view of forward-looking design. Opportunity for significant error occurs at each step of the process.

Q. PLEASE EXPLAIN.

The BellSouth loop cost model first relies on a small sample of loops to characterize the "hypothetical" physical characteristics of a typical Florida loop. The various loop characteristics sampled by BellSouth include loop length, cable sheath mix, structure mix, amount of bridged tap, and feeder/distribution interface location. Each of the characteristics sampled by BellSouth have a wide range of values from loop to loop that cannot be accurately captured in the small sample analyzed by BellSouth. Moreover, ASDL and HDSL loop costs are not even calculated from BellSouth's small sample, but from a "sample-of-the-sample".

Next, BellSouth attempts to reflect the forward-looking plant characteristics of Florida loops by altering the characteristics of its small sample. However, as explained by Mr. Wells, the process used by BellSouth's analysts reflect neither good engineering practice nor attributes of a forward-looking design.

Finally, BellSouth computes costs for the "redesigned" sample loops by applying *estimated* unit cost and utilization factors developed outside the sampling process. The BellSouth loop study methodology at this point forces the Company to rely on

unsubstantiated "expert" opinions and inappropriate historical data to estimate forward-looking cable material costs, conduit costs, pole line costs, engineering costs, installation costs, and cable utilization. BellSouth and the parties in this proceeding do not have a means of evaluating the reasonableness of these estimates using BellSouth's current methodology.

In summary, at each step of the BellSouth loop costing process BellSouth introduces insupportable estimates of loop characteristics and costs that produce wholly unreliable results.

Q. YOU STATE THAT BELLSOUTH'S LOOP STUDY ALSO RELIES ON A SAMPLE EXCLUDING BELLSOUTH'S LOWEST COST LOOPS. PLEASE EXPLAIN.

A. The loop sample used to by BellSouth to calculate loop costs is drawn from a universe that incorrectly excludes ESSX loops, business trunks, and other business offerings. Excluding these loops inappropriately increases BellSouth's estimate of loop costs because the excluded loops have lower costs than the mix of loops reflected in BellSouth's cost study results.

Q. DID BELLSOUTH USE OTHER INCORRECT INPUTS IN ITS LOOP COST STUDIES?

A. Yes. Mr. Wells describes various other incorrect inputs, including incorrect unit costs, overstated drop wire investments, and incorrect feeder and distribution fill factors.

Q. HOW ARE FEEDER AND DISTRIBUTION FILL FACTORS USED IN BELLSOUTH'S LOOP STUDIES?

A. The feeder and distribution cable fill factors are designed to recover BellSouth's investments in spare feeder and distribution plant facilities. BellSouth accounts for such costs in its studies by first calculating the direct investment required to provide the loop, and then dividing the calculated direct investment by a "fill" factor. For distribution cable BellSouth uses a factor of 38.8%. The Company divides each dollar of direct investment by this factor to obtain an investment "including spare" of $2.57. The resulting investment used to compute costs, therefore, includes a spare equipment requirement equal to 157% of the actual investment required to provide service, which is unreasonable.

Q. IS USE OF A FILL FACTOR INHERENTLY UNREASONABLE?

A. No. Reasonable fill factors are appropriate in order to recover BellSouth's administrative spare and lumpy investment requirements. However, the fill factor BellSouth uses is not derived from a reasonable calculation of these requirements, but from inappropriate historical data reflecting not only spare requirements for current capacity but spare placed by BellSouth to meet future service demands. This type factor is inappropriate.

Q. WHY IS IT INAPPROPRIATE FOR THE COMPANY TO USE FACTORS REFLECTING EXISTING PLANT FILL IN ITS COST STUDIES?

A. BellSouth's fill factors supposedly measure existing total spare, regardless of whether such spare is required to serve existing customers. In some cases it may be reasonable for BellSouth to have excessive spare levels because it may be more efficient to build excess capacity now (for example, to avoid the costs of future retrenching when new

demand for that capacity materializes). Whether or not that is true in any given case will depend on whether the cost savings associated with a single installation are greater than the carrying costs for the excess capacity. But, in any event, much of BellSouth's spare capacity would not exist if it were not for anticipated future demand. The costs associated with that spare should therefore be the responsibility of the future demand that it services.

Said another way, this is not a question about whether such spare exists, but a question of matching spare facility costs with the offerings that cause such costs to be incurred. AT&T's proposal allows BellSouth to collect growth spare costs once--from the new customers that spare plant is placed to serve. BellSouth's methodology allows the Company to collect its costs twice-- from both new and existing customers.

Q. HOW DO THE COST STUDY DEFICIENCIES YOU DESCRIBE SPECIFICALLY IMPACT BELLSOUTH'S COST ESTIMATES FOR LOOP DISTRIBUTION AND ADSL/HDSL LOOPS?

A. Each of the deficiencies I have described directly impact BellSouth's cost estimates for ADSL/HDSL loops and loop distribution. BellSouth's estimated costs for each of these elements includes cost components for depreciation, cost of money, shared costs, and common costs. BellSouth's cost estimate for each includes costs of a customer drop. And BellSouth's cost estimate for each includes the Company's estimate of spare facility requirements. Finally, the cost of each element is based on the composition of a "hypothetical" loop that excludes the characteristics of BellSouth's lowest cost loops.

Q. HAVE YOU QUANTIFIED THE IMPACT OF EACH INCORRECT INPUT ON BELLSOUTH'S SUB-LOOP AND ADSL/HDSL COST RESULTS?

A. Partially. Rebuttal Exhibit WE-1 includes corrected BellSouth cost results incorporating most of the adjustments I have described. However, Rebuttal Exhibit WE-1 does not adjust for the incorrect loop sample used by BellSouth, because the data to make this correction is not available. The specific adjustments included on Rebuttal Exhibit WE-1, for loops as well as all other elements, are identified on Rebuttal Exhibit WE-2.

Q. SHOULD THE COMMISSION REJECT THE BELLSOUTH LOOP MODEL FOR USE IN DETERMINING NETWORK ELEMENT PRICES?

A. Yes. The Commission should reject the BellSouth loop model because it is simply incapable of producing reliable cost results, either on a statewide average basis or at the geographically deaveraged cost level required for network element pricing.

Q. HOW SHOULD THE COMMISSION ESTABLISH LOOP AND SUB-LOOP RECURRING RATES IN THIS PROCEEDING?

A. The Commission should adopt the rate proposals for distribution facilities, ADSL loops, and HDSL loops contained in my Rebuttal Exhibit WE-1, which reflects AT&T's complete price proposal in this proceeding. My recommendations for loops and loop distribution are obtained from Hatfield Model results presented by Mr. Wood and, for ~~4-~~ 2-wire ~~HDSL~~ ADSL loops, cost ratios presented by BellSouth. The rates I propose have been developed by aggregating Hatfield wire center results by identified rate group. The ADSL/HDSL results are based only on copper loops. I also recommend in Rebuttal Exhibit WE-1 that loop prices be deaveraged to reflect weighted average loop costs for each of six wire center groups. Although wire center deaveraging does not capture all

variables associated with loop costs, it does generally capture differences due to the greatest variable, population density. BellSouth should also have the capability to bill deaveraged prices at the wire center group level.

Q. HAVE YOU BASED YOUR PRICE RECOMMENDATIONS ON TELRIC RESULTS OR TSLRIC RESULTS?

A. I have based my recommendations on forward-looking costs economic costs, which include all directly attributable costs of the element (sometimes based on corrected BellSouth "TELRIC" studies) plus a reasonable allocation of forward-looking common costs. I believe this standard most closely meets the prior direction for network element pricing established by the Commission. BellSouth's so-called TSLRIC studies do not meet the Commission's requirements because they do not fully reflect directly attributable costs. BellSouth's "TSLRIC" studies therefore provide the Commission little direction regarding appropriate rates.

Q. WHY SHOULD THE COMMISSION GEOGRAPHICALLY DEAVERAGE LOOP AND LOOP DISTRIBUTION PRICES?

A. State average loop prices advantage BellSouth in the competitive marketplace by providing the Company an artificial cost advantage in the more densely populated areas of the state. Averaged rates will thereby prevent the type of widespread competition envisioned by the Commission and the Act, which is antithetical to the Commission's goal of encouraging the type of widespread competition that benefits all consumers.

The importance of geographically de-averaged prices for establishing competitive local markets has been specifically recognized by the FCC. In its Ameritech order (FCC 97-298, released August 19, 1997, paragraph 292) the FCC noted:

> Establishing prices based on TELRIC is a necessary, but not sufficient, condition for checklist compliance. In order for us to conclude that sections 271(c)(2)(B)(i) and (ii) are met, rates based on TELRIC principles for interconnection and unbundled network elements must also be geographically deaveraged to account for the different costs of building and maintaining networks in different geographic areas of varying population density. Deaveraged rates more closely reflect the actual costs of providing interconnection and unbundled elements. Deaveraging should, therefore, lead to increased competition and ensure that competitors make efficient entry decisions about whether they will use unbundled network elements or build facilities.

Q. HAVE YOU PROVIDED AN ALTERNATIVE RATE PROPOSAL FOR STATEWIDE AVERAGED RATES IN THE EVENT THE COMMISSION DOES NOT ADOPT GEOGRAPHICALLY DEAVERAGED RATES?

A. Yes. Rebuttal Exhibit WE-1 also includes rates suitable for uniform statewide application in the event deaveraged rates are rejected. However, I strongly urge the Commission to implement geographically deaveraged loop rates.

LOCAL SWITCHING

Q. WHAT ADDITIONAL PROBLEMS DID YOU IDENTIFY WITH RESPECT TO BELLSOUTH'S LOCAL SWITCHING SUBMISSION?

A. AT&T determined that BellSouth's local switching cost estimate for the 4-wire port and features is inflated by overstated and improperly assigned investments. Investment related problems are addressed in the testimony of AT&T witness Catherine Petzinger.

Q. ARE THERE OTHER PROBLEMS WITH BELLSOUTH'S LOCAL SWITCH PORT PROPOSAL?

A. Yes. Because BellSouth bases its recommendation on flawed cost studies, the Company proposes port charges that are too high and feature charges that are inappropriate. In addition, BellSouth sums its calculated costs for 24 features to derive a price for the 4-wire port, including features, of $17.36 per month. Extending BellSouth's logic, a port with all features--which BellSouth is required to provide--would cost approximately $275.00 per month, given that the typical digital switch has approximately 1000 features. Of course, $275.00 for a port is unreasonable, and BellSouth's proposal is simply unsound. First, even BellSouth acknowledges that the average consumer uses only a very small proportion of the actual features available in a switch. A cost-based rate would therefore reflect customer use of only a small number of features -- not the total cost of all features available -- and even BellSouth's flawed methodology would produce total feature costs less than 45 cents per month.

This lower estimate of costs is supported by a September 29, 1995 BellSouth filing with the Kentucky Public Service Commission, where BellSouth claimed its average monthly

costs for vertical features provided with an additional residential line were $0.69. BellSouth's estimated vertical feature costs of $6.20 in this proceeding are therefore unreasonable by any measure, and approximately 800% higher than cost estimates presented by the Company in Kentucky.

Q. WHAT ACTION SHOULD THE COMMISSION TAKE WITH RESPECT TO PRICES FOR LOCAL SWITCHING?

A. The Commission should adopt the AT&T proposal contained in Rebuttal Exhibit WE-1, which is based on corrected BellSouth cost results and the analysis of witness Catherine Petzinger.

Q. DOES AT&T RECOMMEND SEPARATE OR ADDITIONAL CHARGES FOR FEATURES, FUNCTIONS, AND OTHER CAPABILITIES OF THE LOCAL SWITCH?

A. No. As explained by AT&T witness Catherine Petzinger, separate and additional charges for features and functions are not appropriate. In addition, Ms. Petzinger describes the significant barriers to competition that would occur if BellSouth were allowed to implement even minimal separate feature charges, which would require new entrants to follow a request process each time a new feature were desired. The Commission simply cannot allow BellSouth to erect such barriers to competition by establishing separate charges for each feature, function, or capability, which would remain regardless of the actual level of BellSouth charges. The FCC recognized as much in formulating its network element rules, stating at Paragraph 423 of the FCC's First Report and Order, CC Docket No. 96-98, released August 8, 1996:

> We also disagree with the proposal to define local switching as a point of access plus basic switching functionality, but that would exclude vertical switching features. As a legal matter, this definition is inconsistent with the 1996 Act's definition of "network element," which includes all the "features, functionality's, and capabilities provided by means of such facility or equipment. In addition, this definition would not fulfill the pro-competitive objectives of the 1996 Act as effectively as the per-line definition we adopt. A competitor that obtains basic and vertical switching features at cost-based rates will have maximum flexibility to distinguish its offerings from those of the incumbent LEC by developing a variety of service packages and pricing plans. Moreover, an up front purchase of all local switching features may speed entry by simplifying practical issues such as the pricing of individual switching features.

The FCC's position was recently upheld by the decision of the 8th Circuit Court.

Q. ARE THERE ADDITIONAL REASONS FOR NOT ADOPTING SEPARATE CHARGES FOR 4-WIRE PORT FEATURES AND FUNCTIONS?

A. Yes. Adopting separate charges for features and functions would also conflict with the policy of this Commission. In its arbitration order the Commission determined that local

switching included all features and functions. The Commission thereupon established monthly and usage rates to recover such costs. Specifically, the Commission adopted a monthly rate of $2.00 and a per minute rate of $0.0175 for the first minute and $0.005 for each additional minute for the 2-wire port. The 4-wire port being priced in this proceeding is identical to the 2-wire port already priced; i.e., the 4-wire port is simply a 2-wire port bundled with signaling and terminating equipment. It follows then that adding transmission equipment to the 2-wire port should not cause the entire pricing structure for the underlying switch function to change. Instead, the price increment for the bundled offering should reflect only the cost of the added transmission equipment.

NON-RECURRING COSTS

Q. WHAT ADDITIONAL PROBLEMS DID AT&T IDENTIFY WITH BELLSOUTH'S NONRECURRING COST SUBMISSIONS?

A. Additional problems with BellSouth's non-recurring cost studies are addressed by witnesses Lynott and Hyde. These witnesses point out BellSouth's failure to reflect forward-looking economic costs in the Company's non-recurring cost studies. The Commission should reject BellSouth's studies, and require that rates reflect efficient provisioning methods, as described and quantified in the testimony of Mr. Lynott, and reflected in AT&T's rate recommendations contained in Rebuttal Exhibit WE-1. Non-recurring charges, if not properly structured and priced, will present insurmountable barriers to competition. The Commission must not allow BellSouth to foreclose viable competition through excessive non-recurring rates that could otherwise result through efficient recurring rates for network elements.

Q. SHOULD THE COMMISSION ADOPT BELLSOUTH'S PROPOSAL FOR OSS INTERFACE CHARGES?

A. No, absolutely not. The Commission correctly determined in the arbitration proceedings that "each party shall bear its own cost of developing and implementing electronic interface systems, because those systems benefit all carriers". There is no reason to revisit the Commission's decision in the current proceeding. BellSouth should be required to develop its transactional non-recurring costs assuming the existence of efficient electronic interface arrangements, and the Company should be required to provide efficient access as the Commission has directed. To the extent BellSouth desires to tariff "manual" order charges, it should be allowed to do so only for customers who request a manual order process. Customers who are required to place manual orders because they have no other choice (i.e., because electronic capability is not available or fully functional) should not be required to pay "manual" order charges.

Q. SHOULD BELLSOUTH'S PROPOSED OSS INTERFACE CHARGES BE REJECTED FOR ANY OTHER REASON?

A. Yes. In addition to being inappropriate, BellSouth's claimed costs are undocumented. No proposal for billing to new entrants should be considered simply because BellSouth claims costs of a certain level, or asserts that such costs are necessary and prudent. The burden of proof for any claimed cost should be on BellSouth, and BellSouth has not even attempted in this proceeding to meet that burden.

The Commission should also reject BellSouth's proposed method of recovering costs. As the Commission has previously determined, investments in electronic gateway systems will benefit all carriers. Yet, BellSouth has taken the position in this proceeding

that BellSouth's electronic interface costs (which may or may not be prudent) should be recovered directly and solely from competing carriers in the form of special non-recurring charges. This constitutes another attempt by BellSouth to use its monopoly power to favor itself over potential entrants. In this regard, even if BellSouth accurately identified its prudent costs, the Company would establish one more barrier to entry that will suppress competition by making its competitors pay more of those costs per unit of demand.

Q. DID AT&T IDENTIFY ADDITIONAL PROBLEMS WITH BELLSOUTH'S COST SUBMISSIONS FOR THE NID?

A. Yes. Mr. Wells describes the additional problems we identified with the BellSouth NID studies. Corrected BellSouth cost results incorporating Mr. Well's suggestions are reflected on Rebuttal Exhibit WE-1.

Q. WHAT ADDITIONAL PROBLEMS WERE IDENTIFIED WITH RESPECT TO BELLSOUTH'S PHYSICAL AND VIRTUAL COLLOCATION COST SUBMISSIONS?

A. Problems with BellSouth's collocation studies are outlined in the testimonies of Mr. Bissell and Mr. Hyde.

EMBEDDED COST RECOVERY

Q. SHOULD THE COMMISSION SERIOUSLY CONSIDER BELLSOUTH'S REQUEST TO RECOVER EMBEDDED COSTS IN THE COMPANY'SLOOP AND LOCAL SWITCHING RATES?

A. No. The recovery of embedded costs in rates charged new entrants would greatly harm competition and the Florida consumer. Competitors would be harmed because they would be placed at a disadvantage to BellSouth in offering cost-based prices. Consumer's would be harmed because they would pay higher than necessary rates to both BellSouth and its competitors. Only BellSouth shareholders and managers would benefit from including embedded costs, because BellSouth would be permitted under its proposal to recover non-existent or inefficient costs. These are not the outcomes contemplated by the Act.

Q. THEN YOU DO NOT AGREE WITH MR. VARNER THAT THE ACT CONTEMPLATES THAT PRICES RECOVER EMBEDDED COSTS?

A. No. The Act contemplates that network element rates will be established at levels to promote efficient competition that benefits consumers, i.e., at forward-looking economic costs. Contrary to Mr. Varner's claims, the Act actually forbids consideration of BellSouth's embedded costs by requiring that interconnection and network element prices 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". Considering BellSouth's "embedded" costs would require a rate-based proceeding.

Q. HAS BELLSOUTH PROVIDED ANY DOCUMENTATION OF ITS SO-CALLED EMBEDDED COSTS IN THIS PROCEEDING?

A. No. BellSouth has produced volumes of documentation for its TSLRIC/TELRIC cost models, but has not provided documentation for its claimed "embedded" costs. Evidently, even BellSouth does not take its "embedded" cost recommendation seriously. Importantly, this Commission should not take the "embedded" cost recommendation

seriously, or allow the proposal to divert this Commission from critically examining BellSouth's forward-looking costs.

Q. HAS IT BEEN BELLSOUTH'S POLICY TO ADVOCATE PRICES BASED ON EMBEDDED COSTS IN THE PAST?

A. No. BellSouth has, in the past, advocated the use of long-run incremental costs ("LRIC") to define both the price at which BellSouth is fully compensated and the cost that BellSouth believes should be the basis for interconnection prices. BellSouth has also argued vigorously before state regulators for the ability to establish various service prices, particularly prices for competitive services, at or below incremental cost. BellSouth witness Frank Kolb outlined the Company's position regarding incremental cost-based pricing in testimony before the Georgia Public Service Commission in Docket No. 5258-U, stating that "[L]ong run incremental cost is the proper standard in computing a price floor and is a basis for testing for a subsidy". Mr. Kolb went on to state "as long as revenue is above total long run incremental cost (volume and non-volume sensitive components), a service is compensatory and is not subsidized. Consequently, there is a need for only one standard to test prices for subsidy, and that standard is long run incremental cost."

BellSouth specifically addressed the use of LRIC for interconnection pricing in a March, 1995 filing with the European Commission. There, BellSouth Europe summarized the Company's position as follows:

- Interconnection charges will have a major impact on the potential success of infrastructure liberalization.

- Interconnection charges should reflect cost causation and, as such, should be based on long run incremental costs (LRIC).
- Interconnection charges should motivate incumbent efficiency.
- Rather than handicapping incumbents, past monopoly-bred inefficiencies often greatly advantage these incumbents when competition with new entrants requiring interconnection begins.
- Incumbents bring enormous structural advantages to competitive situations.
- To develop effective competition, interconnection charges must be adjusted to motivate incumbent efficiency and counterbalance the incumbent's considerable structural advantages.
- Effective competition is largely dependent upon equal access to infrastructure by competing parties. This is most easily accomplished by organizationally separating the incumbent's infrastructure and service provision units. Where equal access does not exist, interconnection charges should be adjusted to achieve the same competitive effect (e.g., the AT&T ENFIA discount to MCI).

(emphasis added)

Q. HAS IT ALSO BEEN BELLSOUTH'S POSITION THAT EMBEDDED COSTS ARE ACTUALLY INAPPROPRIATE FOR PRICING?

A. Yes. BellSouth witness Frank Kolb further stated, at page 7 of his testimony in Georgia Docket No. 5258-U:

> FDC methodology is inappropriate for making business decisions in a competitive market for two major reasons.

First, FDC does not reflect the true economic costs associated with the decision to provide a service for the following reasons:

1. FDC does not reflect the current or prospective value of the capital investment used to provide the service.
2. FDC is misleading because ongoing costs (maintenance, administration and other operating expenses) are not fixed at their past levels, nor are the methods of production unchanging, as FDC methodology implies.

Second, the assignment of common and shared costs to a product is completely arbitrary. For example, there is no way to logically assign the cost of corporate headquarters to any particular product or service. If this assignment is arbitrarily made, and the resulting price is forced to exceed what would otherwise be a market price, then sales of the product decline. As a result total revenues decline, and the cost of corporate headquarters must be recovered from all other products and services. It is clear that such a result is unacceptable. In effect, the pricing philosophy which tests the market price against the direct incremental cost of a service will produce contributions consistent with market conditions, arbitrarily assigning costs to products and services will not. Said another way, the incremental cost/pricing

> concept lets the market determine the extent to which common and shared costs are covered by individual services. Indeed, this strategy will result in the most efficient prices and will provide the maximum contribution to universal service. It is imperative that we recognize that allocation of common costs to all services does not guarantee recovery of those common costs.

(emphasis added)

Although Mr. Varner has attempted to disassociate BellSouth from this statement in other proceedings by claiming that FDC and embedded costs are not necessarily the same, it is apparent from Mr. Kolb's statements (see underlined items) that he was talking about embedded FDC.

Q. WHAT IS THE SIGNIFICANCE OF BELLSOUTH'S PRIOR STATEMENTS REGARDING EMBEDDED COSTS TO THIS PROCEEDING?

A. Importantly, BellSouth has acknowledged in these prior statements that neither costs nor the methods of production that produce those costs are fixed at past levels. AT&T agrees. For example, an article in the June 17, 1997 *Atlanta Journal/Constitution* describes the significant year over year reductions that are occurring in BellSouth's work force, stating that "[j]ust this year, the company work force has been trimmed by about 5,200 jobs." Thus, whatever BellSouth calculates its prior "actual" expenses to be, that expense no longer exists, and "actual" expenses today will not exist in the future.

To therefore allow BellSouth to charge rates to reflect these prior "embedded" amounts would simply allow BellSouth to establish an artificially high price floor for competitor

prices, which the Company could use to engage in inefficient and/or anti-competitive pricing. For example, BellSouth could use this cost advantage as an offset to inefficient future operations costs, which would result in higher rates for all consumers. BellSouth could also drive additional costs from its business, in which case BellSouth could flow the extra profits to shareholders or use them to engage in anti-competitive pricing. In either case allowing BellSouth to create artificially high price floors through overcharges to its competitors results in higher rates for all Florida consumers.

Q. CONTRARY TO PAST BELLSOUTH POLICY MR. VARNER NOW CITES VARIOUS REASONS WHY PRICES SHOULD NOT BE SET EQUAL TO ECONOMIC COSTS. CAN YOU COMMENT?

A. Yes. Mr. Varner, at one point in his direct testimony, attempts to justify BellSouth's "new" position by stating that pricing cannot be narrowed to an exact numerical exercise. However, Mr. Varner then contradicts his own testimony by recommending that the Commission adopt BellSouth's embedded rate proposals, indeed obtained through an "exact numerical exercise."

Mr. Varner also states that pricing based on economic costs is not appropriate because prices must be "functional" in the marketplace, sighting the existence of tariffs at rates that are "based on costs" but apparently different than the results of BellSouth's cost studies. Mr. Varner fails to explain how rates that are different than BellSouth's cost studies can be based on costs. Mr. Varner also fails to explain why it is necessary to resolve such conflicts by adopting the tariff rate instead of changing the tariff rate to reflect BellSouth's current estimate of costs.

Q. MR. VARNER ALSO SUGGESTS THAT PRICING AT ECONOMIC COST WOULD DISCOURAGE BELLSOUTH FROM MAKING PRUDENT INVESTMENTS. DO YOU AGREE?

A. No. I find it implausible that BellSouth would purposely choose to make imprudent investments in a competitive marketplace, for whatever reason. Mr. Varner attempts to support this implausible conclusion by misrepresenting the outcome of suitable forward-looking cost procedures, stating that BellSouth cannot recover its shared costs using TELRIC-based prices. In fact, shared costs are included in TELRIC cost calculations.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BY MR. HATCH:

Q Do you have a summary of your testimony?

A Yes, I do.

Q Could you give that, please?

A Yes. Good morning, commissioners. I'm Wayne Ellison, and I'm AT&T's pricing witness. My testimony presents the rates AT&T asks you to adopt for unbundled network elements and collocation. I describe in my prefiled testimony the reasons why my rate proposals are correct, based on requirements of the Act and based on correctly performed cost studies. Equally important, my testimony explains why Florida consumers will only enjoy the benefits of local competition, if BellSouth capabilities provided new local entrants are correctly priced.

The Telecommunications Act includes various local entry options to expedite the introduction of pervasive local competition, competition that drives down excessive prices, that deters price increases and that leads to innovative features in pricing. The Act further requires BellSouth to provide network elements and other capabilities to facilitate the various entry options and to provide such capabilities at cost-based rates. After all, availability at unreasonable rates is equivalent to no availability at all.

BellSouth understands the importance of prices to availability and to a potential impact of competition on BellSouth. That is why prices for capabilities provided new entrants are so contentious. That is why the prices proposed by BellSouth are so high. After all, if you own the monopoly that controlled the prices for what your competitors need to break your monopoly, how would you set those prices? I expect by inflating your cost as BellSouth has done, by including past investments, even if they are not efficient by today's standards, by greatly exaggerating nonrecurring costs, by presenting loop costs only for the company's most expensive loops, by averaging costs that vary widely because averaging protects the company's key markets, by overstating spare equipment requirements, and by exaggerating other costs as described in my testimony and the testimony of other AT&T witnesses.

We should expect BellSouth to do its best to protect its monopoly; however, Congress and the courts have given you and not BellSouth the power to identify the real costs and to set efficient prices. In doing so, I urge you to use your power to set prices for BellSouth elements as if BellSouth had efficient competitors who were anxious to sell network elements to customers like AT&T and MCI, in other words, require BellSouth to set prices at efficient costs without the additives only a monopoly would propose.

That is how you bring the full benefits of competition to Florida.

My testimony presents rates at those efficient levels. Several of the rates I recommend result from applying the cost models you've heard described by other AT&T witnesses. The remainder result from BellSouth studies after making important adjustments to bring BellSouth's inflated cost estimates to efficient economic levels.

I urge the Commission to adopt the rates I propose. If Florida consumers are to benefit from you expediting pervasive competition, you must order BellSouth to behave in this new venture as if they were competing not with new entrants but in a new business providing network elements and other capabilities to companies like AT&T. To the extent you can do that, set rates for network elements and other capabilities like those in an efficient competitive market, you will do what Congress intended you to do, expedite pervasive competition; and you will produce the fullest possible benefits of competition to Florida consumers. Thank you.

MR. HATCH: Tender the witness for cross.

COMMISSIONER DEASON: Staff.

MS. CARTER-BROWN: Chairman Deason, yes --

COMMISSIONER DEASON: Yes, your exhibit WE-4 will

be identified as exhibit 48.

MS. CARTER-BROWN: Yes, it will. Chairman Deason, I need to make a slight adjustment to that exhibit.

COMMISSIONER DEASON: Okay.

MS. CARTER-BROWN: That exhibit includes the January 12th deposition transcript of Mr. Ellison, and it also includes, number 2, deposition and late-filed deposition exhibit numbers 1, 2, 3 and 4; and then there is the parenthetical comment there, includes a CD-ROM containing Hatfield 4.0 and 5.0 that we will not include in this exhibit. The parties have agreed to that, so you can just strike that from the title page of the exhibit.

COMMISSIONER DEASON: So that I am clear and the record is clear, what all is being stricken?

MS. CARTER-BROWN: The CD-ROM itself, that it contains the Hatfield 4.0 model and the 5.0 model. The remainder of late-filed deposition exhibit 2 includes the hard copy runs that were made from that model that staff requested, and staff has determined that those hard copy runs will be sufficient for their purposes. And it is my understanding that BellSouth and AT&T agree to this.

COMMISSIONER DEASON: Very well.

MR. HATCH: That's correct.

COMMISSIONER DEASON: WE-4 as modified will be identified as exhibit number 48.

MS. CARTER-BROWN: Thank you.

COMMISSIONER DEASON: Mr. Self.

MR. SELF: No questions.

COMMISSIONER DEASON: BellSouth. This is just an AT&T witness?

MR. HATCH: Yes.

COMMISSIONER DEASON: Mr Melson.

MR. MELSON: No questions.

MR. TWOMEY: Thank you, Commissioner Deason.

CROSS EXAMINATION

BY MR. TWOMEY:

Q Good morning, Mr. Ellison.

A Good morning.

Q One of the rate recommendations that you have made in your testimony, and I believe you referenced it in your summary, is geographic deaveraging, correct?

A That's correct.

Q Is it your understanding that geographic deaveraging is one of the issues that the Commission is considering in this docket?

A Well, the Commission is considering cost-based rates in this docket, and with respect to the provisioning of loops, then in order to have cost based loop prices, you need to consider and implement deaveraged loop rates.

Q Is it your understanding that any of the parties

requested that the Commission consider geographic deaveraging as a part of the scope of this docket?

A There was a deaveraging question in general. I'm not familiar with the details.

Q Are you aware that WorldCom MFS, raised the issue of geographic deaveraging as a potential issue in the docket?

A There again, Mr. Twomey, I recognize that there were some -- there was some discussion about deaveraging rates in general including, I would assume including the rates that the Commission established before. I don't know all the details of that discussion, what it was to include and not include --

Q So I take it from your statement then that you're unaware that in Order Number PSC 971303PCO-TP the Commission specifically rejected WorldCom's request that geographic deaveraging be considered within the scope of this docket?

MR. MELSON: Commissioner, I object to the form of the question. I believe that, I believe the -- that order in the question is not completely and adequately characterized.

COMMISSIONER DEASON: How should it be adequately characterized?

MR. MELSON: My understanding in that order was

that the Commission would not consider deaveraging of rates for loops for which it set permanent prices in the prior proceeding and that the issue did not address deaveraging with respect to any of the rates that had been set as interim prices in the prior proceeding and were being reconsidered here.

COMMISSIONER DEASON: Mr. Twomey.

MR. TWOMEY: Well, Commissioner Deason, I'm referring -- I'm looking at the order right now, and the request from WorldCom was to include geographically deaveraged loops. I don't see anything in the order that limits the deaveraging issue to permanent rates. It appears to me to -- for example, on page 7 of the order, BellSouth's argument points out that the Commission did not order BellSouth to file cost studies on geographically deaveraged loops.

COMMISSIONER DEASON: Seven of what order?

MR. TWOMEY: Seven of Order Number PSC 971303PCO-TP. It's an order by the pre-hearing officer, I believe, dated October 21st, 1997.

COMMISSIONER DEASON: That's not the prehearing order?

MR. TWOMEY: I don't believe it's in the prehearing order that was issued immediately before the case.

COMMISSIONER DEASON: Okay. I'll need a copy of that. I don't have it.

(Mr. Twomey tendered Commissioner Deason document)

COMMISSIONER DEASON: Commissioner Clark, this is your order; is that correct? Perhaps you can enlighten me.

COMMISSIONER CLARK: Yeah, I didn't -- Mr. Melson, I didn't understand your point. It seemed to me that the issue of deaveraging came up. In the final order in this case it said we weren't going to deaverage and, you know, I don't understand your distinction.

MR. SELF: Commissioners, if I could help, since what we are talking about was WorldCom's request, the issue that WorldCom presented to Commissioner Clark with respect to geographically deaveraged rates arose out of the MFS order on petition for arbitration, Order 96-1531.

COMMISSIONER CLARK: Hang on a minute. Now is that the order that took care of everyone?

MR. SELF: No, this is the order that only addressed the arbitration between MFS and BellSouth.

And under Roman numeral --

COMMISSIONER CLARK: Well, wait a minute. Was it the same proceeding, it's just everybody got separate orders?

MR. SELF: No, ma'am it was a totally separate

docket, totally separate hearing.

COMMISSIONER CLARK: Okay.

MR. SELF: I was not personally part of it, but it was separate from the AT&T, MCI.

COMMISSIONER CLARK: All right.

MR. SELF: And under Roman numeral II of that order, which is titled "The Appropriate Rate for Unbundled Loops," which dealt with -- I'll just read you the first sentence of that section, "Both MFS and BellSouth agree that 2-wire analog voice grade loops, 4-wire analog voice grade loops, 2-wire IDSN, digital grade loops and 4-wire DS-1 digital grade loops should be unbundled."

And the issue that we presented to Commissioner Clark came from pages 10 and 11 of that order which was the subsection of Roman numeral II regarding geographic deaveraging. And the specific issue that we presented was based upon the language in the order which denied the MFS pricing proposal for geographic deaveraging with respect to the loops that I just mentioned. We had requested that that -- that those loops, not the ADSL, HDSL or the other items that are at issue in this proceeding, but rather those basic voice grade loops also be included as an issue; and that's what your order went to denying was the rates for which -- the loops for which previously rates had been set and for which the Commission had not ordered BellSouth

to file cost studies, which is, of course, what led to this proceeding.

COMMISSIONER CLARK: All right. So that it's your view, Mr. Melson, that -- and I take it WorldCom's -- that the issue of geographically deaveraged rates only went to 2-wire analog, 4-wire analog, 2-wire digital and 4-wire digital and that it's an open question with respect to the pricing of the HD --

MR. MELSON: HDSL and ADSL.

COMMISSIONER CLARK: ADSL.

MR. MELSON: Yes, ma'am, and the reason for that, you've identified I think it's A through H or I as the elements that are to be priced in this proceeding. WorldCom was suggesting an additional issue to cover geographically deaveraged loops that would have related back to the 2- and 4-wire loops that were set in the permanent proceeding. It was that additional item -- I'm looking at the order on procedure. It was their additional proposed sub item K that you struck. I think we are left with the question of what is the proper way to set the rates for the eight items that are at issue in this proceeding. The fact that you did not order geographic deaveraging for the 2- and 4-wire loops doesn't mean that we -- I believe does not preclude us from putting on the appropriate methodology for pricing the remaining items

that are in this proceeding, including the ADSL and HDSL loops.

COMMISSIONER CLARK: Well, all right, let me ask you this, at any time did you make it clear that you would be pursuing that, the notion of deaveraged in the pricing of those two items?

MR. MELSON: That -- we have filed testimony on that point.

COMMISSIONER CLARK: Whose testimony?

MR. MELSON: And we did not -- I'm sorry?

COMMISSIONER CLARK: Whose testimony?

MR. MELSON: Mr. Wood.

COMMISSIONER CLARK: Okay.

MR. MELSON: We have stated that geographic deaveraging for these loops should be ordered both in our basic position and in our position on issue one, and we simply did not read your order as affecting that. To read the order the way that BellSouth suggests would say essentially that any changes in methodology, pricing methodology from the prior proceeding would not be allowed. If BellSouth wants to stick totally by TSLRIC, not add shared and common costs, not add RRR, those are not specifically identified in the prehearing order; they are simply part of the methodology Bell is presenting now for pricing, like deaveraging is part of our methodology.

MR. TWOMEY: Commissioner Deason, I would like an opportunity to respond to that.

COMMISSIONER DEASON: Surely.

MR. TWOMEY: I think they are taking an overly narrow interpretation of the order. We are not asking that the methodology be locked from one docket to the next. The specific issue that was raised by WorldCom's October 3rd, I believe, filing was whether or not loops would be deaveraged.

Now this Commission addressed the issue of deaveraging the loops. Yes, it was the 2-wire and the 4-wire, but the general issue of deaveraging was addressed in the arbitrations. WorldCom attempted to insert that issue into this proceeding as well, necessarily affecting the 2-wire, 4-wire loop distribution and the 2-wire ADSL compatible loop and the 2-wire and 4-wire ADSL compatible loop.

I read the order that was issued by Commissioner Clark. It is not narrow in the way that MCI on the behalf of Mr. Ellison is now contending. This order very plainly said that geographically deaveraged loops were not a part of this proceeding. How you can have a deaveraged 2-wire and 4-wire loop distribution, which is a subelement of the loop, when you don't have a geographically deaveraged 2-wire and 4-wire loop to me makes no sense whatsoever.

It's very clear that geographically deaveraged loops were not part of this proceeding, and Mr. Ellison's testimony regarding that is a mystery as Mr. Wood's is as well, and I intended to ask Mr. Wood the same questions.

MS. CARTER-BROWN: Commissioner Deason, if I may add staff's perspective on that.

COMMISSIONER DEASON: Sure.

MS. CARTER-BROWN: Staff's perspective on this question is similar to BellSouth's and to the prehearing officer's perspective when she denied WorldCom's issue. We have looked at the question of geographically deaveraging in the broad sense, and we have not focused on that in our investigation of the record. We have taken the tact that the AT&T and the other parties have presented some testimony to that effect, but we were looking at it as that we would give that testimony the weight we thought it was due. There have been, as I understand it, no motions to strike that testimony. That being said, we have not focused on geographic deaveraging as a specific issue to be resolved in the case, and we aren't intending to do so.

COMMISSIONER DEASON: Well, the objection was as to the mischaracterization of the issue within the question. It appears to be ambiguous to me as to exactly where we are at this point, therefore, I'm going to deny the question, allow the question. If the witness can

provide any additional information on his interpretation of where we are, it will be welcome in the record.

BY MR. TWOMEY:

Q Mr. Ellison, for your benefit I'll repeat the question. Were you unaware that this order had been issued?

A No, I was aware of the order. It was my -- My interpretation in discussing this with my attorney was the same as MCI has presented here today, that it did not deal with the pricing of the elements under consideration in this proceeding. You know, this is a completely different set of issues than we -- than the Commission faced back in the arbitration proceedings. I know there were various parties, including BellSouth, presenting testimony as to potential harms from deaveraged loop prices. They were talking about POTS loop prices, and although I do not agree with the problems that BellSouth presented to you, this is an entirely different case. We are talking about pricing loops here for services that primarily do not exist today. These are not POTS loops, these are loops that will be used to provide new and innovative services in the future.

MR. TWOMEY: Commissioner Deason, I think he's going well beyond the scope of my question, which is --

COMMISSIONER DEASON: I think he is answering

your question just as you asked it. You opened the door, I'm going to allow the answer.

MR. TWOMEY: Thank you, Commissioner.

A If I can continue I know BellSouth plans to offer ADSL services in the near future. We don't know where they are going to offer that, and BellSouth says they don't know where they are going to offer that, but I think there is a very good chance that BellSouth will roll out these services in their most highly populated areas.

If the Commission approves a state averaged rate for potential competitors of BellSouth that does not reflect the cost of providing that service in those larger exchanges and BellSouth comes in and provides that service only in those larger exchanges at the lower cost that BellSouth incurs in those larger exchanges, then we are going to have a real difficult time of trying to offer anything, or we actually will not be able to offer services that can compete with BellSouth. On those new services that are becoming more and more important to customers everyday, for example, we are talking about services that allow Internet users to down load information from the Internet at much faster speeds than they can do today, and there is a big demand for these services.

COMMISSIONER CLARK: Does that require a new loop be put out there, or is it conditioning to the loop?

WITNESS ELLISON: Actually, the ADSL offering requires equipment on both ends of -- The loop itself that we are talking about would be certain selected loops. For example, ADSL loops are, they are copper loops; but ADSL services are designed to work on specific copper loops. In this particular case we are looking at loops up to 18 thousand feet over copper, and then the ADSL capabilities, the large capability for data down loads is provided through equipment that is placed on each end of that loop.

COMMISSIONER CLARK: So it's not a new loop?

WITNESS ELLISON: It's not a new loop. It's a sub -- it's a sub group of the loops that are out there today. In other words, you can't just take any loop that is out there today and provide ADSL service over it.

COMMISSIONER CLARK: What kind do you -- But you add something to a loop.

WITNESS ELLISON: Yes.

COMMISSIONER CLARK: What kind of loop do you have to have?

WITNESS ELLISON: You have to have a copper loop; that is, it cannot be a loop that contains subscriber line equipment, provided over subscriber line carrier.

COMMISSIONER CLARK: Okay.

WITNESS ELLISON: And it can only -- without

repeatering it, can only be so long, up to 18 thousand feet from the office, approximately three and a half miles from the office. So it is a, it is a -- within the totality of all the loops that BellSouth provides today, you know, certain of those loops will allow the company with equipment on both ends to provide ADSL services; and we are also talking about HDSL which is similar in that both of them require equipment to be placed at the customer location and at the central office location on this loop to get the large capacity for data down loads and data transmission.

Q Mr. Ellison --

COMMISSIONER JACOB: I've got a question -- I'm sorry -- to follow up on that line of questioning.

MR. TWOMEY: I'm sorry.

COMMISSIONER JACOB: I think you maintain that the cost study that BellSouth submitted included loops that would not require, am I correct in saying that?

WITNESS ELLISON: That would --

COMMISSIONER JACOB: I'm sorry, I'm looking at your testimony on page -- I'm sorry, your rebuttal testimony on page 6, and the question was, you state that BellSouth's loop study also relies on sampling, including BellSouth's lowest cost loops, and your response is that to calculate loop cost on a universe that incorrectly includes

a variety of certain types of offerings. Is that the same issue that you were just discussing?

WITNESS ELLISON: No, that's a related issue but not the same issue.

COMMISSIONER JACOB: Okay.

WITNESS ELLISON: In the first case what I was talking about is, if you think about an ADSL loop, an ADSL loop is a copper loop that is approximately -- when I say copper, it's provided over copper facilities as opposed to subscriber line equipment, which is the other primary method of providing loops. So first of all, the ADSL loop excludes any loops on subscriber line equipment, and then also without adding repeaters, it's pretty much limited to about 18 thousand feet in length; so customers up to three, three and a half miles from the central office on copper loops have loops that are capable of providing ADSL services if you add some additional equipment to it. That was the question we were talking about. The loops that we are talking about here is a sub group of the total universe.

COMMISSIONER JACOB: Okay.

WITNESS ELLISON: Now the other issue that you are asking me about was when BellSouth went to develop the cost of those loops, they pulled out -- they pulled out of their sample that they had drawn loops meeting those

characteristics. The point I was making is that when BellSouth put the sample together to start with, BellSouth excluded loops for large business customers from their sample. They did this back in arbitration in determining the 2-wire loop prices. They are doing it again today, and the assumption is that they don't have any large customers. For example, they don't have ESSX customers in there, and they don't have customers who use PBX trunks; and my point there is that if you included those types of customers in the average loop cost, it's very likely that those loops are much shorter than the other loops and less costly. So if you are developing an average loop cost, by excluding these larger customers, they get a larger loop cost. And the truth is, if you think about data services in particular, which we are talking about here, those data services tend to be the types of services that large customers want. So what BellSouth has done is given you a cost for a loop that does not reflect the cost of serving larger customers. So the second issue is that of the sub group of loops, the sub group of loops that BellSouth uses to price their service is incomplete in that it excludes a lot of loops that should have been in there at a lower cost.

COMMISSIONER JACOB: I understand. Thank you.

MR. TWOMEY: Thank you, Commissioners.

BY MR. TWOMEY:

Q Mr. Ellison, you have made a rate recommendation for item 1B, which is the 2-wire, 4-wire loop distribution, correct?

A Well, I have made a recommendation. I'll check to see if that's the right --

(Witness reviewed documents)

Q If it will help you, I will refer you to your rebuttal exhibit, WE-1, page one of eight, lines 19 through 40.

A Yes, that covers a 2-wire and a 4-wire distribution.

Q What is 2-wire distribution?

A Well, of course the distribution is the facility that will be provided between a feeder distribution interface. Out in the exchange area away from the central office where feeder and distribution intersect, this is the 2-wire facility that would run between that interface and the customer's location. 2-wire simply means that you are talking -- in this particular case what we are looking at are copper facilities, and 2-wire would be a copper facility consisting of one twisted pair; and the 4-wire would be a copper facility consisting of two twisted pairs.

Q The 2-wire loop that we are all familiar with that we talked about in the arbitration, the 2-wire

distribution is part of that 2-wire loop, correct?

A A 2-wire loop would require 2-wire distribution of some type, yes.

Q 2-wire distribution is commonly referred to as a subloop, correct?

A Subloop elements would -- Distribution is a subloop element. There are --

Q Okay.

A There are actually various types of distribution, but, yes, two -- Distribution -- If you looked at a loop serving a customer and you broke it down in these various components, one of the components would be distribution.

Q Now we have set rates, permanent rates for 2-wire loops in Florida, in the arbitrations, correct?

A We have set rates for 2-wire -- 2-wire loops, the cost being based on BellSouth's sample of POTS loops.

Q So was that a yes?

A A combination loop, yes.

Q Okay. Now that 2-wire loop is set at a statewide average rate, correct?

A Yes.

Q And you are proposing that although the 2-wire loop be at a statewide average rate, a portion of that loop be set on a deaveraged basis; is that your recommendation to the Commission?

A No, I think we are talking about an entirely different situation here.

Q Well, let me, I'll refer you to lines 20 through 25 of your testimony -- excuse me, to exhibit WE-1 to your rebuttal testimony. Do you not have geographically deaveraged proposals for 2-wire distribution on lines 20 through 25 of that exhibit?

A I do. The question you asked me, Mr. Twomey, was am I proposing that a portion of that 2-wire loop that was previously priced be deaveraged; I'm not. I'm proposing that in addition to the 2-wire that the Commission has approved that the Commission allow new entrants to purchase -- instead of an entire loop to be able to purchase distribution facilities.

One of the advantages of providing distribution by itself is that the distribution by itself can be used with new entrants' own facilities, so by offering a subloop distribution element, you encourage new entrants to use their own facilities in combination with the local exchange company's facilities. It could be entirely different usage here and entirely different incentives.

Q All right. Do you know what the 2-wire loop price that was established in the arbitrations was?

A I may have it. I don't know. I don't know if I have it with me or not.

(Witness reviewed documents)

Q Would you accept subject to check it was approximately 17 dollars?

A Approximately 17 dollars. We can --

Q And we have agreed that the 2-wire distribution is a subset of the 2-wire loop, correct?

A No, and let me explain that. Not in the way you characterized the question. You can buy distribution. You can buy an entire loop. If you buy a combined loop, that includes the distribution component of it, but this 2-wire distribution that you buy here, you are not buying -- you are not buying the loop at 17 dollars and then going back and buying a piece of it at this rate.

Q I understand that. But if the loop is a sandwich, the distribution might be just the bread, right? It's a part of the larger loop, correct?

A You buy -- If you buy combined loop, you get distribution as part of it. If you buy the 2-wire distribution, you are not -- If you are talking about the same customer, the same service, you are not going to use a combined loop and 2-wire distribution.

Q I understand that.

A You use one or the other.

Q I understand.

A And if you use the 2-wire distribution, then

you've got to figure out some way of tying that distribution into some other facility of your own or facility that you lease in order to use that to provide services to the customer.

Q If I were going to offer services to customers using only unbundled network elements and I purchased 2-wire distribution, I'd also have to buy some other things, correct?

A Some other things which are not at issue in this proceeding.

Q Right. But to get to a complete loop, I'd have to buy some other parts of the network, correct?

A If you are going to use BellSouth's -- Yes, if you were going to use BellSouth facilities, we'd have to come back in here again and start pricing out some other elements of the network for which prices have not been established yet.

Q We do have a price for the whole loop, correct?

A We have a price for the -- We have a price for a combined loop, yes.

Q Okay. Now in wire center group one, on line 20 of your testimony, you're recommending that the loop distribution price is $19.13, correct?

A That's correct.

Q So in those geographic areas affected by wire

center group one, just buying the loop distribution will be more expensive than buying the whole loop, correct?

A That's correct. The $19.13 reflects the cost of providing that subloop element in that area.

Q Mr. Ellison, with respect to your ADSL loop proposals -- we went over this in your deposition -- you derived the ADSL loop price that you are recommending from the Hatfield model, correct?

A I used the Hatfield model. We discussed that in the deposition. The ADSL price that I used was actually, or I actually developed that using a combination of BellSouth data and Hatfield output data. I can get into more detail in that if you wish.

Q No, let me try it this way. You used the Hatfield model for the 2-wire HDSL, correct?

A That's correct.

Q And then you used the relationships that you observed in the BellSouth model to determine your rate for the 4-wire HDSL, correct?

A No. The 4-wire did not enter into this calculation. We are talking about 2-wire, so what I did was the Hatfield model allowed me to develop the cost of an HDSL loop, which is a loop up to nine thousand feet in length for a 2-wire HDSL loop; and then I looked at BellSouth's studies on -- The problem with using

BellSouth's numbers directly is the problem I just discussed in that BellSouth's loop sample used to calculate the cost is incomplete. So I could not use BellSouth's actual cost calculation of their cost for HDSL and ADSL, but assuming that BellSouth had the same errors and those errors caused both their ADSL and their HDSL numbers to be incorrect by approximately the same amounts, then I did use -- I assumed that I -- Based on that, I concluded that I could use the ratio of BellSouth's stated cost for HDSL and ADSL even though I couldn't use their actual cost; and I applied that ratio to the Hatfield HDSL cost to get the ADSL cost.

Q AT&T didn't file the Hatfield model into the record of this proceeding in the way that it did in the other cases, correct?

A That is correct. We did not file all the details of the model, that's correct.

Q Now you would agree with me that the Hatfield model estimates costs for unbundled network elements assuming a loop and a switch are offered on a combined basis in the platform, correct?

A No, that would be one of the configurations that the Hatfield model would represent the cost for. I don't -- you know, the Hatfield model is not a model that is limited to that particular configuration.

Q Are you, do you remember testifying in Louisiana?

A Yes.

Q Do you remember being cross-examined by Mr. Guarisco with the staff in Louisiana?

A Yes, uh-huh.

Q I'm going to read you a question and answer.

"QUESTION: Is it your understanding that the Hatfield model estimates costs for unbundled network elements assuming the loop and the switch are offered on a combined basis as a platform?"

Your answer:

"Yes, that is the configuration reflected in pricing loops under the Hatfield model. The Hatfield model does not assume that loop is going to be broken and cross connected to other facilities."

Do you remember giving that testimony?

A I remember saying that. I also remembering clarifying that in a subsequent question or comment. The point I would make is that whether it's a combined loop and switch port or it is a loop, if you are looking at loops and switch ports separately, you get the same result.

MR. TWOMEY: That's all I have.

COMMISSIONER DEASON: Staff.

MS. CARTER-BROWN: Staff has no questions.

COMMISSIONER DEASON: Commissioners.

(NO RESPONSE)

COMMISSIONER DEASON: Redirect.

MR. HATCH: No redirect.

COMMISSIONER DEASON: Exhibits.

MR. HATCH: Move 46, 47.

COMMISSIONER DEASON: Without objection, exhibits 46 and 47 are admitted.

MS. CARTER-BROWN: Staff moves 48 as modified.

COMMISSIONER DEASON: Without objection 48 as modified is admitted.

Thank you, Mr. Ellison, you are excused.

WITNESS ELLISON: Thank you.

MR. HATCH: AT&T would call Lee Selwyn to the stand.

Have you been sworn, Mr. Ellison? I mean, Mr. Selwyn, have you been sworn?

WITNESS SELWYN: Yes, yesterday morning -- or Monday morning.

MR. HATCH: Commissioner Deason, before we proceed with Mr. Selwyn, I was negligent yesterday in dealing with Mr. Lynott. We had been requested to revise the direct and rebuttal testimony of the witnesses with respect to Commissioner Clark's ruling on some of the OSS issues, and I'm going to go ahead and hand those clarifications out because they do affect Mr. Selwyn's

testimony. We dealt with Mr. Lynott's yesterday, so I don't think that will be a problem, but consistent with the practice, we'll need it marked for identification.

COMMISSIONER DEASON: This will be identified as exhibit number 49.

MR. HATCH: Thank you.

* * * *

Whereupon,

LEE L. SELWYN

was called as a witness by AT&T and, after having been previously sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HATCH:

Q Mr. Selwyn, could you state your name and address for the record, please?

A My name is Lee L. Selwyn. My business address is One Washington Mall, Boston, Massachusetts, 02108.

Q By whom are you employed?

A I'm employed by Economics and Technology, Incorporated. I am the president of the firm.

Q And on whose behalf are you testifying in this proceeding?

A I'm testifying on behalf of AT&T and MCI.

Q Did you prepare and cause to be filed in this proceeding direct and rebuttal testimony?

A I did.

Q Did you also prepare and cause to be filed with your direct testimony two exhibits?

A I did, yes.

Q One consisting of your, essentially your vita and the other one consisting of a White Paper?

A Yes.

Q And you had no rebuttal exhibits; is that correct?

A That's correct.

Q Do you have any changes or corrections to your testimony?

A I have two small corrections to the direct testimony. At page 1, on line 14 -- I'm sorry, line 16. The question should be modified striking beginning with the word "any" through the end of the question and replacing it with "the Florida Public Service Commission."

And at page 2, line 11, after AT&T add the following, comma, MCI Telecommunications Corporation and MCI Metro Access Transmission Services Inc. Those are the only corrections I'm aware of.

MR. HATCH: Mr. Chairman, could we get Mr. Selwyn's direct exhibits marked for identification?

COMMISSIONER DEASON: Yes, that will be composite exhibit number 50.

Q If I asked you the same questions as are in your direct and rebuttal testimony today, would your answers be the same?

A They would.

Q Do you have a summary of your testimony?

A Yes.

Q Could you please give that now?

A My testimony addresses several issues relating to the development of nonrecurring charges and also to the pricing of unbundled network elements. In my direct testimony, I present a White Paper discussing the regulatory treatment of operation support system costs; and in the context of this proceeding, this is offered for the purpose of supporting the proposition that nonrecurring costs that are used as a basis for setting nonrecurring charges should be calculated and determined on the basis of efficient operation support systems utilization. And by efficient operation support systems, I am including or considering so-called legacy systems; that is, systems that are presently in existence that are managed efficiently, that utilize accurate and synchronized data bases and that are accessible electronically on an interactive basis by ALECs.

In addition, nonrecurring charges should be based solely on the costs incident to the transaction itself; that is, the service ordering transaction itself, and should not include costs that coincidentally happen to be incurred by the telephone company at the time that an order is received. So, for example, costs associated with actually processing the service order are appropriately recovered in nonrecurring charges, but costs that are associated with building out the network, for example, with providing NIDs or arranging for the permanent creation of dedicated inside plant and dedicated outside plant do not qualify as nonrecurring costs and should be recovered in recurring rates.

Incumbent local exchange carriers such as BellSouth have a substantial incentive to set nonrecurring charges as well as recurring rates for essential network elements so as to increase their rivals' costs of entry and thereby diminish the opportunities for competition. Use of inefficient operation support systems and inclusion of costs that are not appropriately recovered on a nonrecurring basis have the effect of increasing ALECs' costs and diminishing opportunities for competition in this state. The AT&T and MCI nonrecurring cost model reflects the use of efficient OSS in processing transactions and reflects the economically correct method of distinguishing

between nonrecurring and recurring costs.

My rebuttal testimony addresses specifically certain economic principles that are advanced by BellSouth witnesses, in particular Mr. Varner. Mr. Varner utilizes several terms which purport to reflect economic theory but, in fact, either have no counterpart in economic theory or are being misused. The first of these is his reference to so-called actual costs. The term "actual cost" has no meaning in economics. It teaches nothing about what costs are appropriately considered for pricing. Mr. Varner would use the term actual cost to refer to costs that have been incurred in the past by BellSouth and which he argues BellSouth is entitled to recover, but actual costs can also mean, and I think more properly should be interpreted as meaning, costs that will be incurred by an efficient incumbent local exchange carrier such as BellSouth in the future. So I would interpret actual costs as referring to the appropriate standard for setting UNEs which would be TSLRIC.

Mr. Varner suggests that a price that is set below historic costs would require that BellSouth subsidize its competitor's entry. In fact, the reverse is true. The term "subsidization" in economics would exist only where costs that are properly incurred by an efficient ILEC on a prospective basis are not recovered fully in prices that

are charged for those services and functions. If competitors are required to pay rates that make BellSouth whole for inefficiencies and for costs that occur -- it incurred in the past, it is the competitors that will be subsidizing BellSouth and not the other way around. It is the competitors that will be in effect remedying BellSouth's prior inefficiencies and making BellSouth whole, causing competitors to be less efficient and to have fewer competitive entry opportunities.

All ratepayers, and for that matter, the community at large, benefit from competition in telecommunications, a point with which Mr. Varner agrees. And on that basis, the costs associated with accommodating competitive entry must be spread across the entire community of users of telecommunication services, whether those users take services from the incumbent or from a new entrant. If BellSouth is permitted to recover all costs incident to accommodating competitive entry solely from new entrants, it will be unduly advantaging itself and its own customers who will benefit when new entrants are successful in constraining BellSouth's own pricing and imposing and disciplining BellSouth to become more efficient; and at the same time it will be making it much more difficult for entry to occur in the first place.

In an efficient, forward-looking environment, the

provision of services should reflect conditions that would exist in a competitive market. Yesterday Mr. Lynott talked about the issue of flow through and suggested that a 2% rate of fallout was, in fact, if anything, generous when considered in a competitive environment. He explained technical reasons why low levels of fallout and high rates of flow through should be expected, and my testimony corroborates his analysis in terms of what is expected and what occurs in competitive industries. No industry subject to competition could possibly tolerate rates of fallout as high as 20% that are being suggested by BellSouth.

Finally, the suggestion that BellSouth's inability to recover historical costs is somehow a breach of a regulatory compact is, I think, misplaced. There is no demonstration in this record, or for that matter there could not be such a demonstration that the costs that BellSouth claims it has an entitlement to recover were ever incurred specifically in fulfillment of some obligation to serve under a regulatory compact or historic franchise. More importantly, the enormous incumbency advantages that inure to BellSouth as it enters a competitive market will be more than sufficient to overcome whatever modest erosion of the value of its individual assets might occur. If the Commission is intent on achieving competition in this state, it cannot allow the so-called actual cost recovery

standard as explained by BellSouth to govern rates. It must use -- must set rates on the basis of forward-looking efficient costs both on the recurring and nonrecurring side.

That concludes my summary. Thank you very much.

MR. HATCH: Mr. Chairman, just in case, I would request that Mr. Selwyn's testimony be inserted in the record as though read, direct and rebuttal. I think I forgot that, but I'm not sure.

COMMISSIONER DEASON: Without objection, the direct and rebuttal testimony will be so inserted.

Qualifications:

Q. Please state your name, position and business address.

A. My name is Lee L. Selwyn; I am president of Economics and Technology, Inc., One Washington Mall, Boston, Massachusetts 02108. Economics and Technology, Inc. ("ETI") is a research and consulting firm specializing in telecommunications economics, regulation, management and public policy.

Q. Please summarize your educational background and previous experience in the field of telecommunications regulation and policy.

A. I have prepared a Statement of Qualifications, which is attached hereto as Exhibit LLS-1.

Q. Have you previously testified before ~~any regulatory or judicial body~~ the Florida Public Service Commission?

A. Yes. I have testified before this Commission on a number of occasions dating back to the mid-1970s, on the subjects of rate design and service cost analysis on behalf of business telecommunications users as well as the State of Florida Department of General Services. These cases have included Dockets 74805-TP, 760842-TP, 810035-TP and 820294-TP involving Southern Bell, Docket 74792-TP involving

General Telephone Company of Florida, and Docket 750320-TP involving Central Telephone Company of Florida. My most recent appearance before this Commission was in Docket 950696-TP on the subject of Universal Service, on behalf of Time Warner AxS and Digital Media Partners.

Assignment:

Q. On whose behalf is this testimony being offered?

A. This testimony is offered on behalf of AT&T Communications of the Southern States, Inc. ("AT&T"), MCI Telecommunications Corporation, and MCI Metro Access Transmission Services, Inc.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to provide a discussion of the economic principles underlying the appropriate regulatory treatment of BellSouth's proposal relating to recovery of capital expenditures and operating costs that it claims it will incur in upgrading and using its Operations Support Systems (OSS) to accommodate a modern, multi-provider telecommunications industry environment, and to offer recommendations with respect to rate design principles and policies for the recovery of such outlays. The specific economic principles and policy recommendations that I will be addressing in this testimony have been

incorporated into the AT&T/MCI Nonrecurring Cost Model that is being presented by Mr. Jack P. Lynott in this proceeding.

Q. Have you prepared a report on this subject?

A. Yes. AT&T requested that I prepare a "white paper" that reviews the historic development of ILEC operations support systems and their current, forward-looking condition that is the appropriate basis for use in Total Element Long Run Incremental Cost (TELRIC) and Total Service Long Run Incremental Cost (TSLRIC) studies that are developed to support both recurring and nonrecurring charges both for bundled ILEC services as well as for unbundled network elements (UNEs). That paper, *Regulatory Treatment of ILEC Operations Support Systems Costs*, is attached to this testimony as Exhibit LLS-2 and is made a part hereof. Although the paper is generic in the sense that it is addressed to ILECs generally rather than to BellSouth specifically, the principles and recommendations set forth in the paper are directly relevant and applicable to the Florida-specific issues to be addressed in this case. The next few pages of this testimony provide a brief summary of the analysis and conclusions that are set forth in detail in the paper.

RATE DESIGN PRINCIPLES

FOR NONRECURRING CHARGES

Nonrecurring charges for ILEC bundled services and unbundled network elements should be based upon the forward-looking economic cost of fulfilling these transactions assuming the most efficient use of the integrated operations support systems that are available today.

Q. What is the appropriate economic standard that ILECs are required to apply when setting nonrecurring (and, for that matter, recurring) charges for the provision of services and unbundled elements to CLECs?

A. It is my understanding that ILECs are required by the Florida PSC to set recurring and nonrecurring rates for unbundled network elements (UNEs) on the basis of those elements' Total Service Long Run Incremental Cost (TSLRIC). Nonrecurring charges that are applicable in connection with bundled services provided for resale are to be based upon the prevailing retail NRC, less the wholesale discount that is established in accordance with Section 252(d)(3) of the *Telecommunications Act of 1996* ("Act"). If there is no corresponding retail price for a particular nonrecurring charge transaction (e.g., for the "migration" of an ILEC retail customer to a reseller), the applicable NRC is to be based upon the TSLRIC for such transactions.

The FCC, in its *First Interconnection Order*,[1] expressly required the use of Total Element Long Run Incremental Cost (TELRIC) in setting nonrecurring charges for UNEs. Moreover, while the 8th Circuit Court of Appeals has reversed the FCC's preemption of state jurisdiction over the pricing of these elements, it has not challenged the validity of the FCC's adoption of TELRIC as the appropriate pricing standard.[2] The FCC has recently further clarified its position with regard to NRCs when it ordered that a Bell Operating Company (BOC) must show "that its non-recurring charges reflect forward-looking economic costs" in order to comply with Section 271 requirements for BOC entry into the interLATA long distance market.[3] Counsel has advised me that the Florida PSC has determined that there is no substantial difference between the TELRIC and TSLRIC for an element.

Q. What is the specific definition of "forward-looking economic cost" that is appropriate for use in TELRIC/TSLRIC studies?

A. In the context of the TELRIC/TSLRIC study methodology, the term "forward-looking economic cost" is to be interpreted as that which would prevail assuming the use of the most advanced technology that is available to the ILECs and that they can deploy today, utilized in the most efficient manner.

ILEC investment in integrated operations support systems has been driven by these companies' long-standing goals of improving their own efficiency and competitiveness, and thus cannot reasonably be ascribed to any legislation or regulations requiring ILECs to provide interconnections, unbundled network elements, and bundled resale services to CLECs.

Q. Please summarize the principal conclusions and recommendations that are set forth in your paper.

A. Section 251(c) of the federal Act imposes a number of specific duties upon incumbent local exchange carriers (ILECs) with respect to the provision of bundled services and access to unbundled network elements (UNEs) to other telecommunications providers, including resellers and competitive local exchange carriers (CLECs). The transformation by state commissions and the FCC of these statutory requirements into rules and regulations has proven to be a lengthy, complex and highly contentious process, a process that has itself worked to slow the pace of entry and investment by non-ILEC providers into the local telecommunications market. Among other things, ILECs contend that compliance with the requirements of Section 251(c) imposes extensive new costs, costs that the ILECs seek to recover directly and exclusively from their new rivals.

Specifically, ILECs contend that they must incur costs to acquire and to adapt

existing Operations Support Systems (OSS) and for other organizational changes in order to accommodate the Act's requirements for interconnection, unbundling and resale. ILECs argue that these and similar "cost onsets" are "caused" by the new entrants and, they claim, should be recovered from these entities through a variety of pricing devices. The paper examines these arguments, but arrives at fundamentally different conclusions:

Most, if not all, of the "costs" that ILECs claim are being imposed upon them by the Act and associated federal and state implementation regulations represent efficiency improvement programs that either were already underway prior to the enactment or that should be pursued by ILECs irrespective of the presence of competitors or any specific Section 252(c) obligations. In most cases, these programs actually result in substantial efficiency gains that both reduce ongoing ILEC costs and/or that enhance the ILECs' own competitiveness, such that their "costs," when expressed in terms of the net present value of the overall investment program, are actually *negative*.

Costs incurred by ILECs in order to accommodate their operation in a multi-carrier environment, such as the costs of establishing and operating electronic interfaces with other local exchange carriers, are not compliance-driven costs. Expenditures of this same type are also incurred by those other carriers (e.g., for establishing electronic interfaces with ILECs and with each other) and are thus

ordinary and necessary costs of doing business in a multi-carrier marketplace. Each carrier — ILEC, CAP or CLEC — is responsible for its own costs incident to interacting with other local carriers.

- To the limited extent that any *positive* compliance costs may be incurred by ILECs alone, these should be recovered across the entire community of ILEC customers, and not be imposed exclusively upon CLECs and resellers. In enacting the 1996 legislation, Congress specifically described the new law as "an Act to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies." Congress intended and expected that competition would be broadly beneficial to *all* consumers, not just to those who elected to purchase services from the new providers. As such, to the extent that there actually are any net positive costs imposed upon ILECs to establish the machinery necessary to accommodate a multi-provider industry, those costs may not be imposed solely and exclusively upon the new entrants.

- Such OSS-related investment costs that are found to be appropriately recoverable by ILECs — if in fact any such costs are present at all — should be included in and recovered through recurring rates spread across all ILEC services and rate elements whose provision these systems support, and not through up-front

nonrecurring charges (NRCs) imposed solely in conjunction with a service- or UNE-related transaction.

The AT&T/MCI Nonrecurring Cost Model correctly applies TELRIC principles by assuming the use by ILECs of efficient, fully integrated operations support systems that are accessible to CLECs and that permit them to transact business with ILECs via electronic interfaces.

Q. Are you familiar with the AT&T/MCI Nonrecurring Cost Model that is being presented in this proceeding by Mr. Lynott?

A. Yes. I have participated as an advisor to AT&T and MCI in its development, and am familiar with its design and structure and with the various assumptions and economic principles that it embodies.

Q. Does the AT&T/MCI Nonrecurring Cost Model embody the various economic, regulatory and rate design principles that you have presented in your paper?

A. Yes, it does. The model applies the TELRIC methodology to the development of nonrecurring costs. It correctly excludes from the components of nonrecurring costs all operations support system investment-related costs that require either no specific recovery (because they represent ongoing productivity/efficiency improvements that

will actually result in *lower* ILEC costs overall) or because such costs, if and to the extent they are specifically recoverable, are appropriately included in *recurring* rates spread broadly and in a competitively-neutral manner across all users (customers and competitors) of ILEC services and unbundled elements. Consistent with TELRIC principles, the Nonrecurring Cost Model assumes the adoption of efficient, fully integrated operations support systems that are accessible by CLECs via electronic interfaces for purposes of conducting business with ILECs. Access to and use of these ILEC systems by competitors virtually eliminates the need for most ILEC manual (i.e., labor-intensive) activity and dramatically reduces the potential for error. This direct, on-line entry and processing of CLEC orders and other transactions permits ILECs to achieve a "flow-through" of error-free transactions at levels that are comparable with those that are regularly and routinely expected and achieved in other comparably complex network-based industries, industries that have not been protected by the legacy of monopoly under which the ILECs have operated for more than a century. Finally, while recognizing the possibility that certain OSS costs may in theory be sensitive to the aggregate volume of service-related transactions, the Nonrecurring Cost Model correctly treats such transaction-sensitive costs as *de minimis*.

Accordingly, I believe that the Nonrecurring Cost Model correctly applies the TELRIC methodology and produces cost estimates that are economically sound and that provide a valid basis for the establishment of appropriate nonrecurring charges

for ILEC service and element transactions.

Q. Does this conclude your direct testimony at this time?

A. Yes, it does.

ENDNOTES

1. *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order, FCC 96-325 (rel. August 8, 1996), (*First Interconnection Order*), at paras. 672-703.

2. *Iowa Utilities Board, et. al. v. FCC*, No. 96-3321 and consolidated cases (8th Cir., filed July 18, 1997), at 20.

3. *Application of Ameritech Michigan Pursuant to Section 271 of the Communications Act of 1934, as amended, To Provide In-Region, InterLATA Services in Michigan*, CC Docket No. 97-137, *Memorandum Opinion and Order*, FCC 97-298 (rel. August 19, 1997), at para. 296.

REBUTTAL TESTIMONY OF

LEE L. SELWYN

ON BEHALF OF

AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC., AND

MCI TELECOMMUNICATIONS CORPORATION, AND

MCI METRO ACCESS TRANSMISSION SERVICES, INC.

DOCKET NOs.: 960833-TP/960846-TP/971140-TP/960757-TP/960916-TP

Introduction:

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is Lee L. Selwyn; I am President of Economics and Technology, Inc. ("ETI"), One Washington Mall, Boston, Massachusetts 02108.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?

A. Yes, I submitted pre-filed direct testimony on November 13, 1997.

Q. ON WHOSE BEHALF IS THIS REBUTTAL TESTIMONY BEING SUBMITTED?

A. This testimony is being submitted on behalf of AT&T Communications of the Southern Region, Inc., MCI Telecommunications Corporation, and MCI Metro Access Transmission Services, Inc.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY AT THIS TIME?

A. My rebuttal testimony responds to the direct testimony of Mr. Alphonso Varner that supports BellSouth's recurring cost studies for unbundled network elements (UNEs) and its pricing proposals for those elements, and the testimony of Mr. Eno Landry on the processes involved in the fulfillment of service requests initiated by ALECs.

ECONOMIC EFFICIENTCY, AS WELL AS POLICIES ADOPTED BY THIS COMMISSION AND THE UNITED STATES CONGRESS, REQUIRE THAT RECURRINGAND NONRECURRING RATES FOR UNBUNDLED NETWORK ELEMENTS BE SET AT THEIR TOTAL SERVICE LONG RUN INCREMENTAL COST

Q. DR. SELWYN, PLEASE EXPLAIN THE DISTINCTION BETWEEN "HISTORICAL" COSTS AND "ECONOMIC" COSTS IN THE CONTEXT OF RATE DEVELOPMENT FOR UNBUNDLED NETWORK ELEMENTS (UNES).

A. "Historical" costs refer to the costs that have previously been incurred by a firm such as BellSouth during its operations over a given period of time, and which will be recorded in its books of account. Assuming that its accounting entries are accurate, the firm's historical costs will reflect all costs that were incurred by the firm without specific reference to the products, services, business strategies, or other factors that may have caused the Company to incur such costs, or the extent to which those costs have been inflated by systemic inefficiencies in the Company's operations. "Historic" or "embedded" costs reflect the firm's "revenue requirement" as this concept has been applied in the public utility field, and

includes depreciation and return on previously-incurred capital investments in plant and equipment, as well as ongoing expenses that may be incurred by the utility under existing operating practices, systems and technologies.

In contrast, "economic costs" are defined as the costs that bear upon an economic decision, such as whether or not to produce a given service or element, and are not necessarily equivalent to the embedded accounting costs recorded on a firm's books. (See, e.g., W. Nicholson, *Microeconomic Theory*, 2nd edition, Dryden Press: 1978, at 221-222.) A defining characteristic of economic costs is that (unlike historic cost) they are assumed to be *efficiently incurred*, meaning that the resources devoted to the particular service or element could not be reallocated to some other use without reducing output. (*Id.*, at 520-521.) In other words, the production process must consume the least economic resources (capital and labor), i.e., be *least cost*, in the context of the best available technology and provisioning practices that could be used to produce the service or element from this point in time forward. Because production processes are subject to continual improvement — particularly in the supply of telecommunications services, which has been and continues to be dramatically impacted by advances in digital technology that reduce cost and increase functionality — economic costs must be evaluated from a fundamentally *forward-looking* perspective, rather than measured with reference to the firm's historical costs.

Q. WHAT ARE "ACTUAL COSTS" AS MR. VARNER USES THIS TERM?

A. The term "actual costs" has no precise or particular economic meaning, although Mr. Varner attempts to equate "actual" cost with "historic" cost. However, on a

forward-looking basis, the costs that a well-managed firm will "actually" incur in efficiently furnishing a given service are best represented by the Total Service Long Run Incremental Cost (TSLRIC) of that service. The "actual" costs that the firm had incurred in the past, under technological and operating conditions that may no longer exist, are reflected in the embedded cost as recorded on the Company's books. The "actual" historic costs to which Mr. Varner refers are not relevant to a determination of forward-looking cost and are not relevant as a basis for pricing.

Q. IN COMPETITIVE MARKETS, WHICH OF THESE TWO COST LEVELS — FORWARD-LOOKING OR HISTORICAL — WILL PRICES TEND TO FOLLOW?

A. Prices in competitive markets are driven toward forward-looking economic cost, not to the historical costs that may have been incurred in the past by any given firm. In a competitive industry, forward-looking economic costs are best approximated by TSLRIC.

In a competitive industry where firms produce multiple products or services, resources (and their associated costs) may in some cases be shared among several products. In many cases, it is still possible to make direct cost attributions to specific products based upon each product's relative use of the shared resource, in which case the "shared cost" is part of the forward-looking economic cost. Certain costs, such as general corporate overhead, may not be subject to such direct attribution or assignment. Research undertaken by Economics and Technology, Inc. has demonstrated that, with respect to ILECs, such "corporate

overhead" costs are volume-sensitive and vary directly and proportionately with both the total output of the firm as well as with the volumes of individual products and services. Hence, an equi-proportionate share of forward-looking overhead costs should also be included in the forward-looking economic cost of each ILEC service or element. That same research also indicates that, with respect to incumbent LECs, "fixed" costs — i.e., those that do not vary with the volume of output of the firm — are minimal, indeed, statistically equivalent to zero.

Whether or not ILECs have significant levels of shared or common costs, however, and contrary to Mr. Varner's contention (Varner Direct at 11:3-7), in the long run competitive market price levels will not permit firms to recover any historical costs that they may have incurred in excess of the economic cost level. Assuming that firms are able to freely enter into or exit from the market, prices cannot be expected to remain above economic cost for very long, because in such a situation one or more new entrants, who themselves confront the same economic cost levels as incumbent firms, will enter the market and in so doing drive prices down to the economic cost level.

Q. TO THE EXTENT THAT THE FORWARD-LOOKING COST IS BELOW THE HISTORICAL COST, HOW DO FIRMS OPERATING UNDER COMPETITIVE MARKET CONDITIONS RECOVER THE DIFFERENTIAL?

A. They don't. If I built a factory five years ago that is capable of producing widgets at a cost of $5 each, but you could build a factory today, using more modern equipment and technology, that can churn out the same product for $3, there is no

way in which I will be able to maintain the $5 price level. I will be forced to reduce my price in order to compete or, in the alternative, to close down my factory altogether and get out of the business. I cannot expect to be able to force customers who are confronted with a choice of suppliers to "make me whole" for my previously-incurred investments when they are able to purchase the same product at a lower cost from another source.

Businesses that are operating in competitive industries are continually forced by the discipline of the marketplace to update their production processes to reflect the most efficient technology and practices that are currently available. As Mr. Wood has observed in his testimony (Wood Rebuttal Testimony at page 31-34), one consequence of this phenomenon is that competitive firms will often take write-offs of technologically-obsolete, inefficient plant before it has been fully depreciated, and thus charge those costs to shareholders rather than to customers of the firm. Clearly, the successful firms operating in competitive markets do not — indeed, *cannot* — act as if they are somehow "entitled" to recover all incurred costs from their customers.

Q. MR. VARNER CONTENDS THAT "IF THE PRICES OF THE SERVICES PROVIDED TO COMPETITORS DO NOT COVER [ACTUAL] COST, BELLSOUTH WILL BE SUBSIDIZING ITS COMPETITORS." (VARNER DIRECT AT 11:11-12.) DO YOU AGREE?

A. No. A "subsidy" exists when the price is set below the *incremental* economic costs that the telephone company will incur on a forward-looking basis. That a price happens to be less than historic cost does not imply the presence of subsidy.

Returning to our earlier example about the widget factory, if in order to stay in business I am forced by the marketplace to offer widgets at $3 even though (on an historic basis) my "actual" cost (as Mr. Varner would define that term) is $5, I may experience a loss in the accounting sense because I am continuing to utilize obsolete plant, but in no way am I "subsidizing" customers who purchase the product from me at the $3 price. If BellSouth's competitors are required to pay the Company prices for UNEs and other essential facilities that reflect historic inefficiencies or the failure of the telephone company to adopt efficient systems and production processes, then it is the *competitors* who will be forced to subsidize BellSouth's failure to adopt efficient forward-looking production processes and resources.

Q. IS BELLSOUTH PROPOSING TO SET ITS RECURRING PRICES FOR UNEs BASED UPON FORWARD-LOOKING ECONOMIC COST?

A. No. While nominally utilizing TSLRIC as a "basis" for proposed UNE rates, Mr. Varner clearly states that BellSouth's position is that its UNE prices should not be set equal to economic cost. (Varner Direct at 12-13.) Instead, BellSouth is proposing to recover its historically incurred costs through its UNE prices. (Varner Direct at 12:24-13:1, and 18:2-21.) Specifically, BellSouth has proposed to recover the majority of the difference between its claimed economic costs (i.e., TSLRIC plus attributed shared and common costs) and its booked, historical costs by including substantial cost additives described as "Residual Recovery Requirements" (RRRs) in its proposed rates for unbundled loops and ports. (Varner Direct at 19:17-20:20, Zarakas/Caldwell Direct at 43:19-44:10.) These additives, which are expressly designed to recover historical costs, cause

BellSouth's proposed rates for the affected elements – namely, 4-wire analog voice grade ports, 2-wire ADSL-compatible loops, and 4-wire HDSL-compatible loops – to be substantially higher than their reported economic cost level. (Exhibit No. P-1, Section 6, "Residual Recovery Requirement," at 000691.) In addition, Mr. Wood has described (see, e.g., Wood Rebuttal Testimony at 10-14) several mechanisms by which BellSouth has improperly included historical costs in its TSLRIC estimates for these unbundled elements.

Q. DID THIS COMMISSION INCLUDE THE RECOVERY OF BELLSOUTH'S HISTORICAL COSTS AS AN EXPLICIT COMPONENT OF THE PRICES FOR UNBUNDLED ELEMENTS PREVIOUSLY ESTABLISHED IN THIS PROCEEDING?

A. No, it certainly did not. In the decision issued on December 31, 1996, the Commission concluded that the appropriate cost methodology to determine the prices for unbundled elements is an approximation of Total Service Long Run Incremental Cost (TSLRIC). (Order No. PSC-96-1579-FOF-TP, December 31, 1996 (hereinafter, "the December 1996 Order"), at page 23.) As observed in that decision, the Commission had previously adopted the TSLRIC costing standard for unbundled elements in Docket No. 950984-TP. (Order No. PSC-96-0811-FOF-TP, issued June 24, 1996.) The Commission consequently set prices for a number of UNEs based directly upon BellSouth's proposed TSLRIC levels, with a further contribution to shared and common costs. (December 1996 Order at page 33.) Given that the Commission has already made a determination on appropriate UNE pricing that did not include any "additive" to recover the Company's claimed historical costs, as a threshold matter the Commission should confirm its prior

conclusion barring any extraordinary showing that it must be reversed at this time. As I shall now explain, I believe that the Commission's decision to adopt UNE prices based upon TSLRIC plus a portion of shared and common costs is appropriate from an economic standpoint and is the best means to implement the relevant provisions of the *Telecommunications Act of 1996.* (That having been said, I have not reviewed in detail the recurring TSLRIC studies that BellSouth has presented in this proceeding, and therefore do not offer an opinion concerning the studies' specific compliance with the Commission's TSLRIC standard.)

Q. FROM AN ECONOMIC PERSPECTIVE, IS BELLSOUTH'S PROPOSAL TO SET ITS UNE PRICES TO RECOVER HISTORICAL COSTS PERMISSABLE UNDER THE FEDERAL *TELECOMMUNICATIONS ACT OF 1996*?

A. No, it is not. Section §252(d)(1)(A)(i) of the *Telecommunications Act of 1996* ("the Act") prescribes that the pricing of UNEs and interconnection arrangements must be based upon their costs "determined without reference to a rate-of-return or other rate-based proceeding..." The "Residual Recovery Requirements" to which Mr. Varner refers represent the difference between the forward-looking economic cost and the historical costs as these have been determined in a previous "rate-of-return or other rate-based proceeding." Such pricing is clearly impermissible under the Act. By expressly requiring that costs be "determined without reference to a rate-of-return or other rate-based proceeding," Congress clearly intended to require that ILECs price UNEs and interconnection arrangements based upon their forward-looking *economic costs*, rather than upon the *historical costs* that are the focus of a traditional rate-of-return or rate-based

proceeding.

Q. WHY DO YOU REACH THIS CONCLUSION?

A. Among its many consequences, the 1996 federal legislation amended the *Communications Act of 1934* to create a new Part (Sections 251-261) specifically concerned with the "Development of Competitive Markets" in telecommunications. In order to secure the benefits of competition for the nation's telecommunications consumers, this legislation established specific obligations for *incumbent* local exchange carriers (ILECs) in the areas critical to the development of a competitive local exchange marketplace. These key areas include access to unbundled network elements, interconnection to new entrants' networks, resale of services, number portability, dialing parity, and reciprocal compensation. In requiring the cooperation of incumbent LECs with the efforts of new entrants to participate in the local exchange marketplace, Congress clearly contemplated that, at least during a transition period if not over a longer time frame, new entrants would not have a sufficiently extensive base of facilities in place to enable them to compete effectively with the incumbents. Congress did not *require* new entrants to utilize the facilities of incumbents; rather, it adopted explicit measures designed to *facilitate* new entrants' ability to interconnect with and to utilize ILEC network resources as needed to fill in gaps in the new firms' own infrastructures. As Mr. Varner has himself recognized (Varner Direct at 5:21-7:21), new providers will choose to construct their own facilities when this can be accomplished at a lower cost than by utilizing the incumbent's network, and will choose to utilize the incumbent's facilities when that represents a lower cost than for new construction. Indeed, that is exactly as it should be. Facilities-

based competition should develop only where it is efficient, and should not be expected to develop where the commitment of economic resources needed to overbuild existing ILEC plant cannot be justified. The Act recognizes both conditions, and establishes a paradigm under which a combination of facilities-based and resale competition can develop.

Moreover, the development and growth of non-facilities-based competition at the retail level (accomplished through the resale of UNEs and bundled services) will work to encourage new entrants to invest in facilities of their own by permitting them to amass a customer and revenue base sufficient to justify the investment. Pricing of UNEs at their forward-looking economic cost sends the correct signals to prospective facilities-based competitors, whereas pricing UNEs *above* economic cost (i.e., at historic cost levels) could work to encourage inefficient construction of competing facilities.

The only way in which the "make or buy" decision can be efficiently made by the new entrant is where the incumbent's prices are set on a forward-looking, economic cost basis. Consider the following example: Suppose that BellSouth's TSLRIC (including correctly-attributed forward-looking shared and corporate overhead costs and return on investment) for a particular UNE is $6, and that the associated "Residual Revenue Requirement" for that same UNE is $5. On this basis, BellSouth's price would be set at $11. Suppose that the new entrant is able to replicate the same functionality of this UNE at a cost of $9 by constructing its own facilities. In this case, the economically efficient decision would be to continue to utilize the ILEC's facilities (because $6 is less than $9). However,

because it is confronted with an $11 *price* and not the $6 forward-looking economic *cost*, the new entrant will conclude (correctly from its perspective) that it would be better off acquiring its own facilities (at the $9 cost) than to pay the $11 price to BellSouth. That decision is, however, *inefficient* from a societal standpoint, and the new entrant will have been misled into that incorrect decision by the inflated $11 BellSouth price. Ironically, if the new entrant in fact does decide to pursue the "make" rather than the "buy" course of action, BellSouth will still not be able to recover its so-called "Residual Revenue Requirement" from the new entrant.

It would make no sense for Congress to have specifically encouraged efficient competition in local telecommunications while at the same time condoning (let alone affirmatively permitting) an ILEC to overprice essential services and facilities.

Q. HAVE THE REGULATORY COMMISSIONS THAT HAVE CONSIDERED THIS ISSUE REACHED CONCLUSIONS SIMILAR TO YOURS — I.E., THAT THE PRICING OF UNEs MUST BE BASED UPON ECONOMIC COSTS RATHER THAN ON AN ILEC'S HISTORICAL EMBEDDED COSTS?

A. Indeed, they have. The FCC was the first regulatory authority to comprehensively address this issue, in its *First Report and Order* in CC Docket 96-98 ("*First Interconnection Order*"). (*In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection Between Local Exchange Carriers and Commercial Mobile*

Radio Service Providers, CC Docket Nos. 96-98 and 95-185, *First Report and Order*, released August 8, 1996, paras. 674-703.) In that decision, the FCC interpreted Section 252(d)(1)(A)(i) of the Act as a requirement to measure and apply the *forward-looking, long-run economic costs* of the given network function, and specifically rejected UNE pricing based upon historical costs. As expressed therein:

> We are not persuaded by incumbent LEC arguments that prices for interconnection and unbundled network elements must or should include any difference between embedded costs they have incurred to provide those elements and their current economic costs. ... The substantial weight of economic commentary in the record suggests that an "embedded cost"-based pricing methodology would be pro-competitor -- in this case the incumbent LEC -- rather than pro-competition. We therefore decline to adopt embedded costs as the appropriate basis for setting prices for interconnection and access to unbundled elements. Rather, we reiterate that the prices for the interconnection and network elements critical to the development of a competitive local exchange should be based on the pro-competition, forward-looking, economic costs of those elements, which may be higher or lower than historical

> embedded costs. Such pricing policies will best ensure the efficient investment decisions and competitive entry contemplated by the 1996 Act, which should minimize the regulatory burdens and economic impact of our decisions on small entities. (Interconnection Order at para. 705 (footnotes omitted).)

It is my understanding that the Eighth Circuit Court of Appeals decision of July 18, 1997 held that the FCC lacked jurisdictional authority to prescribe those TELRIC costing and pricing rules for application to state-regulated UNEs, and thus abrogated those portions of the *First Interconnection Order* and associated rules in which such preemptive authority had been asserted. Contrary to Mr. Varner's claim, however, the Court did not find that "[m]any of the FCC's Rules conflicted with the Act" (Varner Direct at 9) on substantive grounds; the basis for vacating the specific pricing and costing rules that had been adopted by the FCC was entirely jurisdictional. Indeed, the FCC's interpretation of the Act and the pricing rules it attempted to promulgate are not substantially different from the Florida Commission's own findings and decisions with respect to the use of TSLRIC for pricing UNEs and other essential services furnished to new entrants, which I described earlier in my testimony (pages 9-10). Whether or not the FCC's ruling is ultimately binding upon this Commission, that ruling is sound on its merits and can be used by this Commission both as validation for its own prior rulings as well as providing corroboration for interpretations of the Act that may differ from those being advanced by BellSouth.

Moreover, several states have reached similar conclusions. The Public Utility Commission of Ohio adopted pricing guidelines that "set forth that prices for interconnection and unbundled network elements shall be set so that the LEC recovers its LRSIC ["LRSIC" (long-run service incremental cost) is another term for TSLRIC] for providing interconnection and unbundled network elements and a reasonable contribution to the joint and common costs incurred by the LEC." (Public Utility Commission of Ohio, Case No. 95-845-TP-COI, *Entry on Rehearing*, November 7, 1996, at 39 ("V. Pricing Standards").)

The California PUC has not yet issued a decision that establishes the specific basis for the pricing of UNEs in the context of the Act. However, in AT&T's arbitration with GTE-California, the Arbitrator established UNE rates based on TSLRIC plus a markup to reflect forward-looking shared and corporate overhead costs, without any additive to recover historical costs. (California PUC Application 96-08-041, Arbitrator's Report, October 31, 1996, at pages 11-13.) Similarly, in the AT&T/MCI arbitration with GTE-Southwest in Texas, the Arbitrator concluded that "unbundled element prices shall be set at TELRIC plus an appropriate share of joint and common costs (determined by the application of a forward-looking cost factor)." (Texas PUC Docket No. 16300/16355, *Arbitration Award*, December 12, 1996, at page 108.)

Even before the passage of the Act, the Connecticut Department of Public Utility Control (DPUC) had determined that UNEs should be priced at TSLRIC plus a reasonable contribution to common costs, and it has affirmed that this treatment is consistent with the Act. (See Connecticut DPUC, Docket No. 96-09-22,

Decision, April 23, 1997, at section III.C, which also cites Docket No. 94-10-04, *Decision*, August 7, 1996, at page 55.) The DPUC's recent April 1997 order also explicitly rejected the recovery of historical costs through the contribution portion of UNE prices, and adopted the principle of using a forward-looking analysis of common costs to set the contribution level applied to UNEs. (*Id.* at section V.B, "Proposed Rates")

Q. MR. VARNER CONTENDS (VARNER DIRECT AT 8) THAT THE ACT'S ALLOWANCE FOR A "REASONABLE PROFIT" IN UNE PRICING UNDER SECTION 252(D)(1)(B) SUPPORTS BELLSOUTH'S INTERPRETATION OF THE ACT AS PERMITTING RECOVERY OF HISTORICAL COSTS IN UNE PRICES. DO YOU AGREE?

A. No, I do not. Section 252(d)(1)(B) of the Act *permits* the price for interconnection and unbundled elements to include a "reasonable profit." Mr. Varner's basic argument is that no profit is recovered when prices are based upon TSLRIC and thus TSLRIC-based prices are inconsistent with the Act's intentions. The statutory language "reasonable profit" must be read in the context of public utility regulation. "Reasonable profit" constitutes the "reasonable rate of return" or "cost of money" that reflects conditions that would prevail in competitive markets. For this purpose, "cost of money" is included in the TSLRIC itself, along with depreciation and ongoing expenses. If Mr. Varner intends to suggest that Congress has authorized some type of "profit" in excess of the reasonable rate of return on investment, he offers no authority for such a conclusion. Indeed, any profit in excess of the "reasonable return on investment" would *by definition* constitute *excess* monopoly profits that are, on their face, *un*reasonable.

Moreover, there is nothing inconsistent about the idea of earning a "profit" when prices are compared with forward-looking economic costs even if those same prices are below historic embedded cost. If the historic cost of a service is $7 but on a forward-looking basis it costs only $5 (exclusive of return on investment) to produce, and that service is priced at $5.50, the company will earn a profit of 50 cents for each unit it sells from this point in time forward — i.e., its aggregate earnings will be 50 cents greater for each unit it sells than it would be if the unit were not sold. The fact that in the *past* the cost of production of the same service had been $7 has no effect upon or relevance to its profitability from this point in time forward.

Some of the other regulatory commissions that I cited earlier in my testimony have also expressly rejected Mr. Varner's line of reasoning. The FCC was not persuaded by ILECs' contentions that UNE prices must recover embedded costs in order to ensure that they could realize a profit. (*Interconnection Order I*, at para. 706.) The PUC of Ohio considered this issue and concluded that "[t]he profit level included in the LRSIC shall be the cost of capital which shall constitute 'reasonable profit' for purposes of the 1996 Act." (Ohio PUC, Case No. 95-845-TP-COI, *Entry on Rehearing*, November 7, 1996, at 39.)

Q. MR. VARNER ALSO CONTENDS (VARNER DIRECT AT 13) THAT SETTING PRICES THAT DO NOT COVER "TOTAL COST" (I.E., HISTORICAL COST) WILL CREATE INCENTIVES FOR ILEC INEFFICIENCY. DO YOU AGREE WITH THIS REASONING?

A. Absolutely not, and it is astonishing that Mr. Varner would make such a ludicrous

claim. Surely Mr. Varner is aware of the fundamental shift that has occurred during the past decade away from traditional rate of return regulation of ILECs toward incentive regulation approaches such as price caps plans, which has occurred precisely because of the incentives for inefficiency that economists consider to be inherent to embedded cost-based pricing.

Recall, for example, the FCC's findings following its review of the incentives created by rate of return regulation and their effects upon ILEC behavior in the *Further Notice of Proposed Rulemaking* (FNPR), FCC 88-172, in its price caps proceeding, CC Docket 87-313 (3 FCC Rcd 3195, 3216-3224). As stated therein:

> ... rate-of-return regulation provides regulated firms with very strong incentives to pad their rates, for essentially two reasons. First, as a profit-maximizer, the firm is led to adopt the most costly, rather than the most efficient, investment strategies because its primary means of increasing dollar earnings under rate-of-return constraints is to enlarge its rate base. This is commonly known as the Averch-Johnson effect or "A-J" effect of rate-of-return. Second, since all operating expenses are included in a firm's revenue requirement under rate of return, management has little incentive to minimize operating costs. This is commonly known as "X-inefficiency." The firm's shareholders profit

> from the first phenomenon, and the benefits of the second redound to the firm's management. In both cases, however, consumers suffer because these distorted incentives increase the cost of doing business – and thus the rates consumers must pay for service. (3 FCC Rcd 3195, 3219, footnotes omitted)

The FCC's review noted several studies that found these effects to have significant impacts upon regulated firms' costs, including "one showing unit cost increases on the order of 6 to 12 percent" due to A-J type distortions (3 FCC Rcd 3195, 3220) and a unit cost differential of approximately 11 percent for monopoly electric utilities subject to rate-of-return regulation relative to such utilities in situations where some competitive forces exist (3 FCC Rcd 3195, 3222). Thus, contrary to Mr. Varner's unsupported opinion, setting prices to recover total historical costs actually incents ILECs to make *inefficient* investments, in addition to creating conditions for excess costs through the "X-inefficiency" effect.

If BellSouth is effectively *guaranteed* full recovery of its embedded investment, the Company has no incentive to assure that its capital spending initiatives are financially sound. Indeed, it is both possible and entirely likely that the apparent "gap" between embedded historic costs and forward-looking incremental costs is at least in part accounted for by inefficient investment decisions. For example, in acquiring new central office switches, the Company may have failed to recognize or give effect to the persistent downward trend in central office switch prices that

has characterized the switch market since the break-up of the former Bell System. One reason why embedded plant may become prematurely obsolete is because the Company failed to correctly assess the pace and direction of technological improvements and price decreases that would occur in the future, and in so doing overestimated the economic lives of equipment that it was considering for purchase. If equipment prices are decreasing at the rate of, say, 5% annually but this fact is not captured in the Company's capital budgeting cash flow models, the Company could be led to replace plant prematurely rather than wait a few years until the newer models became available at perhaps significantly lower prices. Similarly, if the Company overestimates the prices of the next generation of a particular class of equipment (e.g., central office switches), it may fail to purchase them at the most cost-effective point in time. When firms in nonregulated industries, who enjoy no assurance of full recovery of their investments, make capital investment and plant replacement decisions, they must consider these factors or suffer the consequences. Full recovery insulates the telephone company from such concerns, and thus encourages inefficiency, not efficiency, in investment decisionmaking.

Q. MR. VARNER CLAIMS (VARNER DIRECT AT 13:14-18) THAT A FAILURE TO PRICE UNEs TO RECOVER TOTAL COSTS WILL ALSO DISCOURAGE EFFICIENT INVESTMENTS IN TECHNOLOGIES WITH RELATIVELY HIGH SHARED COSTS. DO YOU AGREE?

A. No, I do not. Mr. Varner offers no economic support for this contention, which he contradicts elsewhere in his own testimony. Given that Mr. Varner correctly recognizes that economic costs include an appropriate attribution of shared and

common overhead costs (Varner Direct at 12:11-12), there is no reason to believe that prices based upon economic costs will create any incentives to select technologies based upon their relative shares of incremental vs. shared costs. If shared costs are correctly attributed to the various products and services that they support, technologies exhibiting relatively large shared cost components (which Mr. Varner suggests provide greater economies of scale) will exhibit lower economic costs when expressed on a per-unit basis.

Q. IN WHAT RESPECTS DOES YOUR NOTION OF THE TREATMENT OF SHARED AND CORPORATE OVERHEAD COSTS APPEAR TO DIFFER FROM THAT BEING ADVOCATED BY MR. VARNER?

A. Mr. Varner appears to want the ability to allocate shared and corporate overhead costs among the various BellSouth services "based on the market, regulatory and competitive conditions that exist." (Varner Direct at 12:13-14.) One potential consequence of such allocations (which he characterizes as "contributions" toward shared and common costs) is that they will disproportionately burden those services and elements for which BellSouth faces no consequential competition. The "market conditions" to which Mr. Varner refers would permit the Company to increase prices for relatively price-inelastic noncompetitive services without significant loss of business, while at the same time potentially undercutting rivals in competitive segments of its market by effectively excluding most or all shared and common costs from the prices it sets for its competitive offerings. A correct attribution of shared costs on the basis of relative use of the shared resource by each of the various services, and an assignment of variable corporate overhead costs in proportion to each service's direct costs, overcomes this possibility.

Q. MR. VARNER ALSO CONTENDS (VARNER DIRECT AT 17:21-23) THAT "FOR BELLSOUTH TO STAY IN BUSINESS, REVENUES FROM ALL SERVICES MUST NOT ONLY COVER INCREMENTAL COST, BUT THEY MUST ALSO PROVIDE SUFFICIENT CONTRIBUTION TO COVER ALL OTHER COSTS OF THE FIRM." ARE BELLSOUTH'S PROPOSED PRICES FOR UNES OTHER THAN LOOPS AND PORTS CONSISTENT WITH ASSERTION?

A. No, they are not. Mr. Varner repeatedly declares (see also Varner Direct at 11:23-24 and 19:13-15) that BellSouth's pricing must permit the Company to recover all incurred costs, including historical, non-economic costs. Nonetheless, BellSouth proposes that only certain unbundled elements should be priced to recover their full historical costs, namely the loop and port elements that are most important to ALECs and for which there are few or no competitive alternatives. (Varner Direct at 19:17-20:20.)

For the numerous remaining unbundled elements, including interoffice transport, vertical switching features, etc., BellSouth's proposed rates do not include an explicit "Residual Recovery Requirement" component. Relative to loops and ports, many of these elements have greater potential for earlier and more significant competitive alternatives (e.g., interoffice transport), and/or have greater price elasticity (e.g., vertical features). Apparently, BellSouth is willing to forego recovery of its historical costs for these elements that have not already been captured in TSLRIC plus the shared/common cost attributions. Thus, in these cases, BellSouth is proposing prices that will not "cover actual costs," contrary to its avowed position that it must recover all of its "actual costs" in order

to survive. Clearly, if for these elements BellSouth can forego recovery of total historical costs, there is no reason to accept the Company's premise that pricing the loop and port UNEs below historical cost levels will put the Company at financial risk.

BELLSOUTH ENJOYS OVERWHELMING ADVANTAGES IN THE NEWLY-COMPETITIVE LOCAL EXCHANGE MARKETPLACE DUE TO ITS LONG-TERM INCUMBENCY STATUS AND FORMER REGULATORY PROTECTIONS, AND ITS CONTINUED "OBLIGATION TO SERVE" IN NO WAY ENTITLES THE COMPANY TO FULL RECOVERY OF ITS PAST NETWORK INVESTMENTS.

Q. DO YOU AGREE WITH MR. VARNER'S ASSERTION (VARNER DIRECT AT 19:10-13) THAT BELLSOUTH'S PRICING MUST ALLOW THE OPPORTUNITY TO RECOVER ALL INVESTMENTS "MADE IN GOOD FAITH PURSUANT TO OBLIGATIONS UNDER A TRADITIONAL REGULATORY COMPACT"?

A. No, I do not. While Mr. Varner has not spelled out the regulatory obligations he has in mind, presumably he is referring to the Florida Commission's "carrier of last resort" (COLR) requirement that BellSouth (like other regulated ILECs) provide service to all customers in its Florida serving territory upon request, and to build and maintain sufficient facilities to accommodate such service requests. While BellSouth is subject to a COLR requirement in Florida (and should continue to be, in my view), Mr. Varner is mistaken in his belief that the Company's "obligation to serve" somehow entitles it to full recovery of all

previously-made network investments.

Q. PLEASE EXPLAIN WHY BELLSOUTH'S OBLIGATION TO SERVE DOES NOT CREATE AN ENTITLEMENT TO FULL INVESTMENT RECOVERY.

A. There are several reasons. First, BellSouth has not demonstrated, nor could it demonstrate, that all of its network investments were efficiently incurred for the sole purpose of satisfying its obligation to serve. In reality, an ILEC's network investments are driven by multiple considerations, including not only customer demand, but also the prevailing form of regulation and strategic competitive market objectives being pursued by the ILEC's management. That embedded investment will also reflect *incorrect* and *inefficient* choices made by the Company due to, for example, misassessments of customer demand, the pace at which competition in specific market segments will develop, and/or the technological life of the equipment and facilities that were being considered for purchase, or the Company's failure to deploy modern operations support systems capable of improving overall management and utilization of network resources. While it might be possible to identify and exclude that portion of the embedded asset base that is *not* attributable to any COLR obligation to serve, no such attempt has been made or offered by the Company in the present case.

Q. ARE THERE ADDITIONAL REASONS WHY YOU HAVE CONCLUDED THAT AN OBLIGATION TO SERVE DOES NOT ENGENDER AN ENTITLEMENT TO FULL INVESTMENT RECOVERY?

A. Yes, there are. As an initial matter, the limited investments that might plausibly

be linked to an ILEC's obligation to serve, such as subscriber access lines in rural, relatively high-cost areas, are those least likely to be threatened by facilities-based competitive entry.

Furthermore, an ILEC's "obligation to serve" does not exist in a vacuum, and the economic burdens, if any, arising from such an "obligation" must be considered in tandem with the enormous *and unique* economic benefits of incumbency that have been enjoyed by BellSouth and other ILECs for nearly a century. Among other things, those incumbency advantages have included virtual insulation from business risk, the ability to amass a ubiquitous distribution, switching and intraLATA transport infrastructure unmatched and unmatchable by any known competitor, the ability to acquire a near-100% share of the local exchange market without competitive challenge, and unparalleled incumbency advantages vis-a-vis actual and prospective entrants that assure the ILECs' ability to retain substantially all of their core market share — particularly in the residential segment — even as entry becomes possible.

In addition, the Commission's regulation of BellSouth took a significant step away from the traditional rate-of-return based "regulatory compact" when incentive regulation was applied to the Company. Since 1994, BellSouth's current incentive regulation plan permits the Company to retain earnings that represent above-market returns on equity, including up to 12.5% return on equity with no earnings sharing, and up to 17.5% with sharing in 1997. (See Order No. PSC-96-1579-FOF-TP, issued December 31, 1996, at page 33, and Docket No. 920260-TL et al, Order No. PSC-94-0172-FOF-TL, at page 12.) This type of incentive

regulation plan is founded upon a "reward follows risk" policy in which the ILEC is afforded the *opportunity* to earn higher returns to the extent that it accepts the financial and business *risks* involved in operation under the terms of the plan. In addition, in 1995, the Florida Legislature amended Chapter 364, Florida Statues, eliminating any vestige of rate-based rate-of-return regulation and creating a statutory price cap plan for BellSouth and other large ILECs. Under the price cap plan, BellSouth's rates for basic local exchange service are capped at 1995 levels until January 1, 2001. Notwithstanding the price caps, BellSouth can seek an increase in basic local exchange rates at any time if it can show substantially changed circumstances. Given that BellSouth is subject to an incentive regulation plan and a price cap plan that (absent any exercise of a "constitutional takings"-based return to rate-of-return regulation) eliminate any general entitlement of BellSouth to a prescribed level of return on its investments, it would be illogical and improper to adopt an entitlement to recovery of total historical costs in the context of setting UNE prices.

Q. IS THERE ANY MERIT TO THE IMPLICATION (VARNER DIRECT AT 19:10-13) THAT THE COMMISSION WOULD BE BREAKING ITS "REGULATORY COMPACT" WITH BELLSOUTH BY REJECTING MAKE-WHOLE RATES FOR UNEs?

A. No. The potential for competition at the local exchange level should not have come as any great surprise to BellSouth. Competition in the US telecommunications market did not happen overnight or instantly; it has been an evolving focus of US telecommunications policy for nearly three decades. It is entirely reasonable for this Commission to expect that ILECs subject to its

jurisdiction will anticipate and adjust for the onset of competition in their construction plans and programs. It is reasonable for ILECs such as BellSouth to expect at least some loss of market share when competition enters the market; if a loss of local exchange market share reduces the overall demand for outside plant and other "fixed" ILEC resources, the Company should have been responsible for forecasting the changing industry climate and for adjusting its plant construction programs for its potential effects. Hence, even where some type of adverse financial impact can be directly associated with a loss of local service market share, had such a loss been correctly anticipated and forecasted by the ILEC, it could have reduced its construction program by planning to reuse plant released from service by departing customers. If the ILEC had been adjusting its construction program to account for such competitive losses, it would today be tracking long run costs rather than short run costs, and would not suffer earnings erosion.

THE PROCESSES EMPLOYED BY BELLSOUTH FOR THE PROVISIONING OF UNES REFLECT INEFFICIENT AND ANTIQUATED MANUAL PROCEDURES AND ARE NOT AN APPROPRIATE BASIS FOR SETTING FORWARD-LOOKING NONRECURRING CHARGES FOR SUCH WORK.

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF MR. ENO LANDRY REGARDING THE PROCESSES EMPLOYED BY BELLSOUTH FOR THE PROVISIONING OF UNBUNDLED NETWORK ELEMENTS?

A. Yes, I have.

Q. ARE THE SPECIFIC TASKS AND WORK FLOWS DESCRIBED BY MR. LANDRY CONSISTENT WITH THE DEPLOYMENT OF THE TYPES OF EFFICIENT OPERATIONS SUPPORT SYSTEMS THAT YOU DESCRIBED IN YOUR DIRECT TESTIMONY?

A. No, they are not. The various processing steps described by Mr. Landry appear to be based upon primarily manual systems and procedures rather than on the use of integrated operations support systems (OSS) and accurate, synchronized data bases. As such, they do not provide a valid basis for developing the *forward-looking* cost of the various nonrecurring service order processing and connection functions that would be consistent with the least cost forward-looking technology foundation for TSLRIC studies.

Q. UPON WHAT DO YOU BASE THIS CONCLUSION?

A. The various processing steps that Mr. Landry enumerates involve the manual receipt of orders from ALECs, which he asserts require manual review and error detection by BellSouth. (Landry Direct at 2-5.) He asserts that, based upon experience with access service orders received from interexchange carriers, high error rates are expected in ALEC-initiated orders for UNEs. (Landry Direct at 3:23-4:2.) He also describes various manual cross-connect operations as well as manual entry of central office routing information on UNE ports provided to ALECs. (Landry Direct at 4:8-5:18.)

As I discussed in my direct testimony and in the paper attached thereto,

"Regulatory Treatment of ILEC Operations Support Systems Costs," the principal sources of high "fallout" rates can be attributed to the lack of electronic interfaces to ILEC OSS for ALEC entry of service orders and inquiries, as well as (more generally) to the failure of ILECs to deploy modern, integrated OSS based upon accurate and fully synchronized data bases. Mr. Landry's testimony appears to confirm my expectation that BellSouth has not deployed such systems, or at least that in developing its UNE nonrecurring charges has not assumed their existence and use. As such, Mr. Landry has assumed that a large percentage of ALEC orders will not flow through automatically, either because of ALEC-initiated errors in the service order request or the requirement for various manual cross-connect and routing operations that would be fully mechanized in OSS based upon least-cost currently available technology.

Q. WHY MIGHT BELLSOUTH DELAY ADOPTION AND DEPLOYMENT OF MODERN OPERATIONS SUPPORT SYSTEMS CAPABLE OF PROVIDING MAXIMUM FLOW-THROUGH AND MINIMUM FALLOUT?

A. It is in BellSouth's own self-interest to set NRCs that will be imposed upon its rivals at the highest levels it can convince regulators to allow. One means for accomplishing this is to delay for as long as possible the use of systems whose deployment would significantly reduce BellSouth's nonrecurring costs.

Q. WHY MIGHT THE LACK OF ELECTRONIC ACCESS BY ALECs TO BELLSOUTH'S OSS CONTRIBUTE TO ERRORS IN ALEC-INITIATED MANUAL SERVICE ORDERS?

A. When a retail service order is entered by a BellSouth customer service representative, that individual has full on-line access to the customer's service record as well as to the Company's Street Address Guide. An error in, for example, the designation of the street or address can in most cases be instantly detected by the system and corrected by the service representative while still in contact with the customer. If the ALEC does not have similar electronic access to the customer's service records and other ILEC data bases, it must wait for BellSouth to verify the information on the manual service order and, if that order is returned because one or more errors had been detected, correct them and resubmit the order again. Where a "changeover" order is involved (i.e., the migration of an existing BellSouth customer to the ALEC), the ALEC must also specify the various service features the customer has in place, but must rely on the customer's own recollection, rather than on direct access to the BellSouth customer record, to prepare the service request.

It is worth reiterating the point that I discussed at length in my direct testimony that a substantial source of fallout in the processing of service orders by ILECs can be attributed to the failure of its own systems and data bases to maintain accurate and consistent records. While Mr. Landry might prefer to "blame" ALECs for all such fallout, he has not specifically shown that no such fallout occurs when the order is initiated within BellSouth itself. Indeed, if fallout rates on ILEC-initiated orders were in fact lower than for ALEC-initiated orders, the source of that differential would be attributable to the lack of an efficient electronic interface or "gateway" rather than to the malfeasance of the ALECs.

Q. WHAT WEIGHT SHOULD BE AFFORDED THE VARIOUS ORDER PROCESSING DESCRIPTIONS THAT HAVE BEEN OFFERED BY MR. LANDRY IN SUPPORT OF BELLSOUTH'S PROPOSED NONRECURRING CHARGES?

A. These descriptions do not reflect least-cost, forward-looking technology and are thus inconsistent with the TSLRIC standard. Accordingly, the Commission should not use these order processing descriptions as a basis for setting UNE nonrecurring charges. Instead, it should utilize and rely upon the forward-looking estimates provided by the AT&T/MCI Non-Recurring Cost Model (NRCM) as the proper basis for setting nonrecurring charges to be applied to ALEC orders.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

COMMISSIONER CLARK: Commissioner Deason, I would like to ask Doctor Selwyn a question quick because it involves the last point he made with respect to the notion of regulatory compact entitling BellSouth to recover those historical costs. And on page 26 of your rebuttal testimony, line 11 and 12, you put in parentheses "Absent any exercise of a constitutional taking based on rate of return regulation." What do you mean by that?

WITNESS SELWYN: The public utilities have argued for decades that they are entitled under the fifth amendment to recover their investments in that the failure to permit them -- failure of an agency to permit them to do so would constitute an unconstitutional taking, which is expressly prohibited under the fifth amendment.

COMMISSIONER CLARK: Well, Doctor Selwyn, they've argued that and, in fact, won that point in the Supreme Court. The Supreme Court --

WITNESS SELWYN: Well, they have won it, and they have lost it. The most recent Supreme Court pronouncement on that subject is in the Duquesne Power and Light case, and the ruling in Duquesne essentially holds that in evaluating the entitlement to such recovery it's necessary not to look just at a single incident but at the overall system of regulation to consider countervailing effects of various regulatory policies. In other words, under the

doctrine in Duquesne, if arguably a particular decision causes a utility to not recover investment, that can be offset by other decisions which have opposite effects. So, for example, if decisions --

COMMISSIONER CLARK: Well, let met -- You are answering more than I need.

WITNESS SELWYN: I'm sorry.

COMMISSIONER CLARK: I think we can agree that the courts have indicated reasonable and prudent investment, an overall return of and return on your investment is part of the regulatory compact. I guess I'm just -- you seem to in this parentheses say that -- I guess I interpret it as assuming you don't go too far and don't result in a constitutional taking, what you recommend is appropriate.

WITNESS SELWYN: Well, I think that in the context of incentive regulation, the various tests that have been applied for, with respect to constitutional taking in cases such as Hope, Bluefield and Duquesne, all relate to rate of return regulation. Under incentive regulation, the utility is given an opportunity to increase earnings by -- in exchange for which it accepts certain risks; and therefore, the standards that may have existed in the past and which have governed these past rulings, I think have to be considered in the context of an incentive

regulation system in which there are already the countervailing forces of risk and reward. And all I'm suggesting here is that under incentive regulation where the company is given opportunities to increase its earnings, where it's given pricing flexibility with respect to many services for which it faces little or no competition and at the same time is being held to provide -- is being required to provide access to network elements that -- at prices that on a forward-looking basis are compensatory, that there is no takings issue and there is no breach of a regulatory compact.

COMMISSIONER CLARK: Let me restate it as I understand what you just said and see if I'm correct. You're saying that because they've moved to price cap a strict consideration of what would be a constitutional taking under a rate of return obligation to serve scenario has been modified somewhat because they've been given the opportunity to keep greater profits through the incentive given by the price cap, that they will be rewarded for being more efficient and that mitigates to some extent the argument that to the extent they don't recover those embedded costs, it was part of the deal?

WITNESS SELWYN: That's right.

COMMISSIONER CLARK: Okay.

WITNESS SELWYN: And I think that's consistent

with the holding in Duquesne.

COMMISSIONER CLARK: Duquesne is relatively recent, isn't it?

WITNESS SELWYN: 1989, yes.

COMMISSIONER CLARK: Okay. And Bluefield is ancient?

WITNESS SELWYN: Is way before I was born. Even way before I was born, and that seemed to be a long time ago.

MR. HATCH: I think we need to tender the witness for cross now.

COMMISSIONER DEASON: Very well. Mr. Self.

MR. SELF: I have no questions.

COMMISSIONER DEASON: BellSouth.

MR. ROSS: Thank you, Commissioner Deason.

CROSS EXAMINATION

BY MR. ROSS:

Q My name is Bennett Ross on behalf of BellSouth. I want to ask you a little bit about the development of the AT&T and MCI nonrecurring cost model which is mentioned in your testimony. You were involved in that process; is that correct?

A I was involved to the extent of providing economic advice and counsel to the developers of the model. I did not personally participate in the actual

development of the model.

Q When did you first begin participating as an advisor in the development of the nonrecurring cost model?

A Close to a year ago.

Q Say again.

A Close to a year ago, I think sometime in the late winter or early spring of last year.

Q Did the model already exist in some form by the time you began participating?

A It was under active development at that time, but it had not been completed and had not been released in any form.

Q And you were asked by AT&T and MCI to participate in the development of the nonrecurring cost model; is that correct?

A I was asked by AT&T and MCI to participate in the development and to address certain specific issues that they were concerned about with respect to the treatment of transactions and also the distinction between the recurring costs and nonrecurring costs as an economic matter.

Q And AT&T also asked you to prepare the White Paper that you've submitted as part of your testimony; is that correct?

A That's correct.

Q And when did AT&T ask that you prepare the White

Paper?

A Well, work on that project began sometime in late spring or early summer. It started out in the form of some generic testimony, and then we decided to prepare it in the form of a narrative.

Q That would have been the spring or summer of 1997?

A 1997, correct.

Q So that was after you had already begun working on the AT&T/MCI nonrecurring cost model; is that correct?

A Well, it was concurrent with it basically, yes. I mean I was preparing written commentary in the form of notes.

Q And is it safe to say that the White Paper was intended to bolster the AT&T and MCI nonrecurring cost model?

A Well, I think it was intended to explain the underlying economic principles that were embodied in RCM.

Q Okay. And although I think you indicate in your testimony that the model and the White Paper are consistent, that really shouldn't be surprising, should it, since you were involved in both?

A I was asked to advise on the development of the model. My advice was taken. To the extent that adjustments were made in the model to conform to that

advice, yes, I would say that the results are consistent.

Q Doctor Selwyn, the nonrecurring cost model developed by AT&T and MCI assumes the use of fully integrated operation support systems that are accessible by CLECs via electronic interfaces; is that correct?

A That's correct.

Q Is it your understanding that all of the operational support systems that an incumbent has are accessible by CLECs?

A Well, directly or indirectly. All of the operation support systems that would affect CLEC related interactions would be expected to be accessible, but I say directly or indirectly. There are -- CLECs will access an ILEC's OSS through a gateway which will in effect act as a dispatcher to direct messages and direct interactions and requests to various parts of the ILEC's OSS. It doesn't necessarily mean that there is direct access to each and every component because it may not be relevant for a CLEC to have access to all components and, in fact, one would expect that to be probably both not the case and probably not even particularly appropriate.

Q That's why I was having some difficulty. Do you draw any distinction between the operation support systems that you believe should be accessible by a CLEC directly or indirectly based on the type of operational support systems

at issue?

A No, the distinction I'm drawing is mostly with respect to functionality, not so much to the type of system. Certainly a CLEC, for example, should be able to access service records and maintenance information relevant to services that the CLEC is purchasing from the ILEC, and the precise manner in which that information is provided will depend upon the manner in which the gateway is designed and the way in which the gateway interacts with the overall OSS configuration.

Q What about provisioning, operational support systems that are used in provisioning unbundled network elements, are those -- should those be directly accessible by CLECs?

A Well, I think they should be indirectly accessible by CLECs through an order entry front end. In an integrated system, many of the provisioning activities occur electronically within the ILEC's OSS, and, for example, the assignment of a channel in an integrated digital loop carrier system is accomplished electronically. Now we wouldn't expect the CLEC to necessarily directly access an individual IDLC, but a CLEC would be provided access to an order entry, a preordering and ordering system which in turn would be able to format and transmit a service request to a provisioning system.

Q But, again, my question was limited to accessibility of the downstream provisioning systems by the CLEC. Is it your belief that the CLEC, once the order has been placed, should have access to the downstream operational support system used by BellSouth in provisioning unbundled network elements?

A I'll stand on my previous answer. I think I have responded to that question.

Q Okay. Have you undertaken any view of BellSouth's operation support systems in either preparing your White Paper or the AT&T/MCI nonrecurring cost model?

A Not specifically, other than to read testimony by BellSouth witnesses describing the manner in which these systems are functioned here in Florida.

Q Have you undertaken a review of any incumbent operational support systems prior to preparing your White Paper or assisting in the development of the AT&T and MCI nonrecurring cost model?

A Once again, I have reviewed descriptive information and testimony by incumbent LECs on this subject, but I have not undertaken an indepth review of the specific operations of any one company.

Q Now you advocate this notion of fully integrated operational support systems so that there will be flow through which you believe should be comparable in the flow

through in, quote, other comparably complex network based entries, and that is on page 10 of your testimony; is that correct?

A Yes.

Q Now the other comparably complex network based industries you are referring to, would that include automated check processing companies?

A For example, yes.

Q Would that also include overnight delivery systems like UPS and Federal Express?

A Yes.

Q And you believe automated check processing and delivery companies are in a comparably complex industry as telecommunications?

A Well, in check processing, if you include the overall funds transfer infrastructure, certainly I would say that the complexity is comparable in many significant respects, and I think that the same could be said of industries such as airlines or transportation generally, delivery systems. They are complex in different ways. I mean they don't have the same necessary -- necessarily the same specific network components, and the networks are designed in different ways; but they are complex in the sense that they involve multiple, you know, thousands, hundreds of thousands, millions of individual points of

entry into the network, multiple data bases, keeping track of messages or packages or whatever the item is that the network is transporting, maintaining accurate accounting and billing and that type of record-keeping information, tracking information. I think that everybody thinks that what they do is the most complicated difficult thing in the world, but in reality, other industries are certainly comparable in complexity to an ILEC.

Q Now I think, according to your White Paper, even in industries like automated check processing and overnight package delivery companies, most -- the best flow throughs that have been achieved is about 99%; is that correct?

A Those are what have been reported. My understanding on the check processing side is that the source of fallout there consists of things like illegibility of the individual instrument, and occasionally when you are dealing with high speed mechanical sorting equipment, a check will just be eaten up by the machine, will be physically dismembered. I'm sure everybody has probably received a couple of those things back from their bank, and that's the kind of fallout that occurs; but basically the systems are certainly designed with the objective of close to a hundred percent flow through.

Q Do you believe the interexchange market is a competitive marketplace?

A Yes.

Q Are you familiar with the ordering and provisioning process that exists today in the access environment?

A Oh, the access environment is not a competitive industry. The interexchange market is competitive, but the access services certainly are monopolistic at this point.

Q All right. So you don't believe that interexchange carriers have any options when it comes to obtaining access?

A Their options are extremely limited. The incumbent LECs still maintain 95 plus percent of the market for access and probably 99 plus percent of the market for switched access.

Q Would you agree that there are similarities between the process involved in ordering and provisioning of unbundled network and the process involved in ordering and provisioning access services?

A There are similarities; there are differences.

Q Are you familiar with the fallout rates that have been experienced in the access environment since divestiture in 1984?

A I have read, for example, testimony submitted by BellSouth in this case that alleges that fallout rates are high, but I think that the same issues are involved. And

again, we dealing with a monopoly service, not a competitive service.

Q Are you aware -- do you have any first-hand knowledge of the fallout rates that have been experienced in the access environment since divestiture?

A Anecdotal.

Q All right. Are you aware that according to BellSouth's records even 14 years after divestiture, BellSouth is experiencing 10% fallout due to errors submitted by interexchange carriers on their access orders?

A I'm aware that BellSouth alleges that. I don't think it's something that BellSouth should be particularly proud of, and one would have to identify the sources of such errors. If the errors arise because of unduly complex ordering procedures that, for example, interexchange carriers are required to undergo in order to acquire access services from BellSouth, for example, lack of electronic interfaces, lack of access to OSS, in placing those orders, then it would not surprise me that fallout rates of that magnitude are present.

I don't think that one can necessarily point to a fallout rate of that magnitude and suggest that it is the fault of the IXEs. In fact, it is probably not the fault of the IXEs. The IXEs have no incentive to maintain high fallout rates. On the other hand, the ILECs do have an

incentive to maintain high fallout rates.

Q Have you undertaken any analysis to determine the source of errors in the access environment?

A Not specifically. Again, only through anecdotal discussions and conversations.

Q So you're not in a position to state whether or not the errors in the fallout rates that have been experienced are attributable to incumbent systems or to errors by interexchange carriers; isn't that correct?

A Well, it is my understanding that if -- to the extent that there are errors that originate by IXEs, those are in part due to the fact that IXEs do not have direct electronic access to ordering systems; and if they did, those errors would be captured at the point of entry rather than downstream.

Q And you would attribute no fallout simply to the complexity of the tasks at hand?

A I'm not going to answer that I attribute no fallout to the complexity of tasks at hand but, you know, there are -- access services represent a, you know, a fairly finite collection of functionalities; and certainly those complexities could be dealt with and should be dealt with under some mechanized manner that is designed to minimize fallout and to maximize flow through. It would be in everybody's best interest that we would have a win-win

result if that occurred. There is no particular benefit certainly to the economy as a whole of maintaining high fallout rates on interactions between different companies, between purchases and providers. But in terms of the similarity of the order entry process and provisioning processes of access services with UNEs that BellSouth itself concedes, it does not surprise me that the same kind of inconsistent databases and other inaccuracies in BellSouth's own network operations permeate back into the access world.

Q In your rebuttal you are critical of Mr. Landry and suggest that he should have presented the fallout that occurs when BellSouth initiates an order for itself; is that correct?

A Among other things, yes.

Q Now BellSouth doesn't initiate orders for unbundled network elements for itself, does it?

A But it does initiate orders for services that are constructed of the very same network components that a CLEC or an ALEC would require and would acquire in the form of UNEs.

Q Was the answer to my question a yes or a no?

A I don't remember your question.

Q My question was BellSouth does not initiate orders for unbundled network elements for itself?

A Well, I think I have explained my answer. The answer is BellSouth does initiate orders for services that utilize the very same network components that constitute UNEs, so I guess I would have to disagree with your question and say, no, that is not true.

Q So you would draw no distinction between the ordering of a one FR service and the ordering of a 2-wire HDSL loop?

A Well, there may be differences between a one FR service and an HDSL service, but I do not draw a distinction, for example, between an unbundled HDSL loop and a bundled HDSL service that might be offered by BellSouth.

Q Doctor Selwyn, were you involved in developing the recurring rates that AT&T has proposed in this proceeding?

A No, I was not.

Q And you mentioned in your summary that you believe that costs of dedicated plant which is assumed in the nonrecurring cost model should be recovered in recurring rates?

A Yes.

Q So I take it you cannot state whether or not the recurring rates that AT&T and MCI is proposing include the costs which the AT&T and MCI nonrecurring cost model

assumed should be recovered in recurring rates?

A I have asked that question and have been advised that they do; that is, that the recurring rates that have been proposed by AT&T do capture components of the service that are not recovered in NRCs, again, based upon efficient forward-looking network design and service provisioning, and I've used that caveat very specifically.

The AT&T recurring and nonrecurring rates are based upon forward-looking costs assuming efficient provisioning of services, and they may well not recover so-called -- what Mr. Varner and Mr. Landry characterize as actual costs which, as I've stated, is a term that is devoid of economic meaning. But it is my understanding, because I have specifically raised this question, that the costs are accounted for either in the nonrecurring side or the recurring side.

Q Other than someone telling you, have you undertaken any analysis to verify for yourself that the recurring rates include the cost which the AT&T and MCI nonrecurring cost model assumes are, in fact, recovered in recurring rates?

A Well, I have over the past year had occasion to examine the mechanics of, for example, the Hatfield model; and in so doing have been able to satisfy myself that these kinds of costs are accounted for in the Hatfield model. I

have not done that specifically here.

MR. ROSS: No further questions.

COMMISSIONER DEASON: Staff.

MS. KEATING: Staff has no questions.

COMMISSIONER DEASON: Commissioners.

(NO RESPONSE)

COMMISSIONER DEASON: Redirect.

MR. HATCH: No redirect.

COMMISSIONER DEASON: Exhibits.

MR. HATCH: AT&T would move 49 and 50.

COMMISSIONER DEASON: Without objection exhibits 49 and 50 are admitted.

Thank you, Doctor Selwyn, you are excused.

MR. ROSS: Commissioner Deason, just a housekeeping matter. The exhibit, the White Paper exhibit which I believe has been modified as a result of the ruling on the OSS, is the exhibit that is going to be included in the record going to have those offending provisions stricken?

COMMISSIONER DEASON: Mr. Hatch.

MR. HATCH: The copy that has been submitted that probably the clerk's office would have for that probably does not have them in terms of redacted and blacked out. I'm just assuming that the handout sheet that describes that would be sufficient. If you want a blacked-out,

redacted copy, I would be more than happy to supply one.

MR. ROSS: I think that would probably be just easier for the parties so we don't have to refer to two documents in looking to what is actually properly part of the record, if Mr. Hatch can just provide a redacted version of the exhibit and submit that into the record.

MR. HATCH: That's no problem.

COMMISSIONER DEASON: Is there objection?

MR. HATCH: Not at all.

COMMISSIONER DEASON: Okay. How do you perceive -- You are going to actually physically redact and then submit that?

MR. HATCH: Yes, I'm going to take the White Paper pursuant to the list that has been marked as exhibit 49 and make those changes and black them out and resubmit that.

COMMISSIONER DEASON: Very well. I believe we have a couple of witnesses whose testimony needs to be inserted into the record.

MR. HATCH: Good. Are we there already?

COMMISSIONER DEASON: Yes.

MR. HATCH: Thankfully. Yes, Bradford Cornell. We've agreed to -- I think all the parties have agreed to stipulate his testimony into the record, so AT&T would request that his direct and rebuttal testimony be inserted

into the record as though read.

COMMISSIONER DEASON: Without objection the direct and rebuttal of Bradford Cornell will be so inserted.

I.

INTRODUCTION & QUALIFICATIONS

Q. PLEASE STATE YOUR FULL NAME AND BUSINESS ADDRESS.

A. My name is Bradford Cornell and my business address is FinEcon, 10877 Wilshire Blvd., Los Angeles, California 90024.

Q. WHAT IS YOUR OCCUPATION?

A. I am a Professor of Finance and Director of the Bank of America Research Center at the Anderson Graduate School of Management at UCLA. In addition, I am President of FinEcon, a firm which provides financial economic consulting services to corporations, law firms and government agencies.

Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?

A. I graduated from Stanford University with an A.B. degree in 1970. Subsequently, I received my M.S. in Statistics in 1974 and my Ph.D. in Financial Economics in 1975 also from Stanford. Since 1975 I have been a professor of finance and I have been at UCLA since 1979. In that capacity I have authored over sixty professional articles, many of which deal directly or indirectly with the cost of capital. The cost

of capital is covered in detail in my book, *Corporate Valuation*, published by Business One Irwin. I have also recently published an article entitled "Estimating the Cost of Equity Capital" which discusses the most current cost of capital theories and research since the publication of *Corporate Valuation*. In addition to my teaching and research, I have served as an expert witness in securities and commercial litigation, including cases that focus on the cost of capital. A more detailed summary of my experience is contained in the resume attached as Exhibit BC-1.

II.

PURPOSE

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?

A. I have been asked to estimate the forward-looking economic cost of capital that should be used in determining for BellSouth Florida, a subsidiary of BellSouth Corp., the forward-looking cost of providing unbundled network elements to retail providers of local telephone service (including the provision of such network elements by BellSouth to its own retail operation). As stated below the midpoint of my cost of capital range for BellSouth Telecommunications is 9.43%.

III.

SUMMARY OF TESTIMONY/RECOMMENDATIONS

Q. PLEASE SUMMARIZE THE BASIC APPROACH OF YOUR TESTIMONY.

A. My testimony involves applying the basic formula for the weighted average cost of capital ("WACC"), given as equation (1) below, to estimate the cost of capital.

Q. SUMMARIZE THE WACC FORMULA AND EXPLAIN HOW IT IS APPLIED.

A. The WACC formula is given by

$$WACC = w_d * k_d + w_e * k_e \qquad (1)$$

where,

w_d = the fraction of debt in the capital structure,

k_d = the forward-looking cost of debt,

w_e = the fraction of equity in the capital structure,

k_e = the forward-looking cost of equity.

To apply the formula I estimate the forward-looking cost of both debt and equity using methodologies that are well accepted by both financial economists and regulators. In addition, I estimate the appropriate capital structure mix of debt and equity capital. With these inputs, the WACC can be calculated from equation (1).

Q. WHAT IS THE ESTIMATE FOR COST OF CAPITAL YOU CALCULATED FROM EQUATION (1)?

A. I estimate the cost of capital to be in the range of 8.80 to 10.07 percent. The average of this range is **9.43** percent.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. The remainder of my testimony is divided into six sections. Section IV discusses the fundamental relationship between risk and the cost of capital in light of both financial theory and widely-cited court decisions. Section V addresses the cost of debt that should be employed. Section VI develops several approaches to estimating the cost of equity capital. Section VII addresses the question of determining the appropriate capital structure to use when calculating the WACC and presents my estimates of the WACC. Section VIII discusses why the cost of capital I have calculated for BellSouth, based on the public data available for BellSouth and similar local service providers at the holding company level is likely to overstate the relevant cost of capital for the provision of network elements. Finally, Section IX presents a summary of my conclusions.

IV.

THE RELATIONSHIP BETWEEN RISK AND THE COST OF CAPITAL

Q. WHAT IS THE RELATION BETWEEN THE RISK OF AN INVESTMENT AND THE COST OF CAPITAL?

A. Financial research has shown conclusively that investors are risk averse. Consequently, the greater the risk of a business the higher the expected return that investors require to invest in the business. From the standpoint of a company, this means that riskier businesses will have higher costs of capital.

Q. HAVE THE COURTS RECOGNIZED THIS RELATION BETWEEN RISK AND RETURN?

A. Yes. The relation between risk and return is a centerpiece in decisions dealing with the fair rate of return for regulated businesses. In *Bluefield Water Works v. Public Service Commission*, 262 U.S. 679,692 (1923) the Supreme Court said:

> "A public utility is entitled to such rates as will permit it to earn a return... equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties..."

The Court went on to say:

"The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties." Id. at 693.

In *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591,603 (1944), the Supreme Court stated:

"The return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital."

Q. ARE THE PRINCIPLES YOU HAVE CITED FROM THESE SUPREME COURT DECISIONS CONSISTENT WITH THE PROVISIONS OF THE TELECOMMUNICATIONS ACT OF 1996 (the 1996 Act)?

A. Yes. Section 251(c)(3) of the 1996 Act indicates that incumbent local exchange carriers have the duty to provide to any requesting telecommunications carrier access to unbundled network elements at rates, terms and conditions that are just, reasonable and nondiscriminatory. Section 252(d) further provides that a State commission shall determine just and reasonable rates for network elements based

on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element and may include a reasonable profit. The provision for a reasonable profit as an element of total cost is consistent with the opinions of the Supreme Court in both the Hope and Bluefield cases. A utility's reasonable profit is essentially a true economic return commensurate with the risk its business. In order to achieve this, the pricing of utility services and products must be based on true economic costs.

Q. ARE ECONOMIC COSTS FORWARD-LOOKING OR BACKWARD-LOOKING?

A. Economic costs are forward-looking. To better understand this, one must put oneself in the shoes of a current investor. For example, if an investor today were to consider an investment in BellSouth's common stock, which is fundamentally a claim on the net assets BellSouth uses to conduct its varied businesses, such investor would only be willing to pay the market value of those assets. An asset amounts to a capacity to generate future cash flows. Therefore, an investor today would not care what historical costs were spent to acquire or build BellSouth's assets. The market value of any asset is a function of the time pattern of cash flows expected to be derived from it and the riskiness of the business endeavor. In essence then, the asset's market value represents its economic cost.

Q. DOES THE FCC PROVIDE GUIDANCE AS TO HOW TO IMPLEMENT THE CONCEPT OF ECONOMIC COSTS?

A. Yes. While the Eighth Circuit Court of Appeals has opined that the FCC is not empowered to mandate network element prices under the 1996 Act,[1] the FCC's First Report & Order, Docket No. 96-98 (the FCC Order), provides a thorough discussion and analysis of the meaning of forward-looking economic costs for purposes of implementing the provisions of the 1996 Act which can be considered by State commissions.[2] The FCC adopts the concept of "total service long-run incremental costs", defines its application to network elements rather than services as "total element long run incremental costs" (TELRIC), and provides for a fair allocation of shared and common costs to network elements. State commissions have generally adopted practices consistent with the FCC's guidance on economic costs.

The meaning of true economic costs according to TELRIC is as follows: the pricing of network elements must be based on true forward-looking incremental costs (including the cost of capital) which are necessary to provide the elements, not on costs which have been expended in the past and may not represent the costs that the utility will actually incur in the future. (It should be noted that, although the principles cited in the above-mentioned Supreme Court decisions are analogous to TELRIC, in practice state utility regulation has focused on the

recovery of embedded costs. The traditional embedded cost methodology is not consistent with TELRIC.)

The concept of normal profit is embodied in forward-looking costs because the forward-looking cost of capital, i.e. the cost of obtaining debt and equity financing, is one of the forward-looking costs of providing the network elements. Consistent with the correct analysis provided in the FCC Order, this Commission should reject the use of either embedded costs (FCC Order ¶704), which represent historical, "sunk" investments, or internal "hurdle rates" used by local exchange operators to evaluate projects which exceed the market cost of capital (FCC Order ¶689) as being inconsistent with a forward-looking economic costing methodology.

Q. WHAT ARE THE FUNDAMENTAL DETERMINANTS OF INVESTMENT RISK?

A. There are two fundamental sources of risk: operating risk and financial risk. Operating risk arises from the actual operation of the business. It is affected by factors such as competition, technological change, customer acceptance of a company's products, variation in the costs of producing the company's products and the like. (As I discuss later in my testimony, however, operating risks which an investor can diversify away are not compensated with a risk premium according to capital market theory. In this segment of my testimony I explain all

types of operating risks that a company faces, including both diversifiable and nondiversifiable risk.) Financial risk is determined by the amount of debt in a company's capital structure. Taking on more debt increases fixed financial charges, thereby increasing the risk that the firm will not be able to meet its financial obligations. The total risk investors face is determined by the combination of operating risk and financial risk.

Q. ARE OPERATING RISK AND FINANCIAL RISK RELATED?

A. Yes. In an effort to control the total risk that investors face, companies manage their capital structures in a manner that leads to a relation between operating risk and financial risk. In particular, companies that face a great deal of operating risk, like high technology firms, limit the debt they issue to prevent total risk from becoming too large. On the other hand, firms that face little operating risk, like regulated utilities, can benefit by using a good deal of low-cost debt without raising total risk to an unacceptable level.

Q. HOW DO YOU ACCOUNT FOR BELLSOUTH'S BUSINESS AND FINANCIAL RISK IN ESTIMATING COST OF CAPITAL?

A. I apply the WACC formula to the closest comparable companies for which public market data is available. The problem is that public data for key variables, such as stock prices, are available only at the holding company level. Therefore, the

comparable companies that must be used are diversified firms. These firms operate many businesses, most of which are riskier than the business in question in this case. Further discussion of this risk issue is postponed until the final section of my testimony. At this juncture, I proceed by using data at the holding company level.

Q. WHAT COMPARABLES DO YOU USE IN THIS TESTIMONY?

A. The comparable companies selected were derived from the list of telephone operating companies in Standard and Poor's Industry Survey. These companies are presented along with some descriptive information in Exhibit BC-2, and include the seven regional Bell Holding companies ("RBHCs"), and the larger independent telephone companies. Among the independents, Century Telephone Enterprise, Inc. and Lincoln Communications were excluded because they have less than 500,000 access lines in service and are an order of magnitude smaller than the RBHCs. Telephone and Data Systems was excluded because a majority of its operations are focused on higher-risk endeavors rather than the more traditional telephone and network operations. Frontier Corp. was excluded because 69% of its revenues are derived from unregulated long-distance operations and only 29% from local service.

V.

THE COST OF DEBT CAPITAL

Q. HOW DO YOU ESTIMATE THE COST OF DEBT?

A. Because debt payments are fixed, the cost of debt can be computed directly and with a high degree of accuracy.[5] For this reason, I use only BellSouth to compute the cost of debt. It is not necessary to use a large sample of companies because of the small measurement error.

Q. WHAT IS THE COST OF DEBT THAT YOU USE?

A. The best estimate of the cost of debt is the weighted average cost over all of BellSouth's outstanding issues, including the debt of the holding company and any subsidiaries. Standard & Poor's Bond Guide ("Bond Guide") provides information on the face value and current yields to maturity on individual bonds. (The Bond Guide does not always cover all outstanding issues if there are many. It appears that the smaller and shorter term obligations may be excluded. Because interest rates on longer term obligations are generally higher, excluding the smaller and shorter term obligations would have the effect of overstating the cost of debt slightly.)

The data from the Bond Guide are presented in Exhibit BC-3. For all of BellSouth's major debt issues the Exhibit shows the bond rating, the face value and the yield to maturity. The yield to maturity is a forward-looking cost of debt

that measures the rate that BellSouth would have to pay if the bonds were issued at the measurement date, and reflects investors' expectations regarding the future returns on these publicly-traded bonds. (Theoretically, the yield-to-maturity on debt overstates the forward-looking cost of debt because of default risk. The problem raised by risky debt is that only the promised yield is observable, but it is the expected return that is required to estimate the cost of debt. Although the expected return and the default premium sum to the promised yield, neither the expected return nor the default premium can be observed directly. Because of this default risk, the debt cost of capital is actually the yield-to-maturity minus the expected default loss. The default risk of telephone holding company bonds is considered to be minimal and hence is ignored for purposes of this analysis.)

The Exhibit shows that the weighted average cost of debt for BellSouth is 7.06 percent.

Consequently, I use **7.06 percent** as the cost of debt in my WACC analysis.

VI.

THE COST OF EQUITY CAPITAL

Q. WHAT MAKES THE COST OF EQUITY CAPITAL MORE DIFFICULT TO ESTIMATE THAN THE COST OF DEBT?

A. The cost of debt can be computed directly because both the face value of debt and the contractual payments a company agrees to make are fixed. In the case of equity, however, there is no face value and dividends are paid at the discretion of management depending upon business conditions. In addition, the dividend stream does not terminate at a known point. For these reasons, there is no simple way to compute the cost of equity capital and more complex approaches must be employed.

Q. WHAT METHODS DO YOU USE TO ESTIMATE THE COST OF EQUITY CAPITAL IN THIS CASE?

A. I used two basic methods for estimating the cost of capital. The first is the discounted cash flow, or "DCF", method that has been widely adopted by the courts and regulatory agencies in rate of return hearings. Second, I use the capital asset pricing model, or "CAPM". In various forms, the CAPM is the most widely employed theoretical model, other than DCF, for estimating the cost of capital. Methods based on the CAPM are sometimes referred to as "risk premium" methods because the model provides an estimate of the risk premium associated with investing in specific issues of common stock.

Q. PLEASE EXPLAIN THE BASIC DCF METHOD.

A. The DCF method is based on the realization that the price of a share of stock, P, equals the present value of all future dividends expected to be received on that share, discounted at the cost of common equity. Mathematically, the DCF model is written,

$$P = Div_1 / (1+k) + Div_2 / (1+k)^2 + Div_3 / (1+k)^3 + \ldots , \qquad (2)$$

where Div_1 is the expected dividend in year 1, Div_2 is the expected dividend in year 2, etc.

The cost of common equity is arrived at by solving the DCF equation for the cost of capital, k. There are two obstacles that make it difficult to solve the equation. First, the number of terms in the equation is infinite. Second, dividends must be forecast for every future year. To surmount these obstacles, simplifying assumptions must be made about the behavior of future dividends.

Q. WHAT ARE THE SIMPLIFYING ASSUMPTIONS THAT ARE EMPLOYED IN THE CONTEXT OF THE DIVIDEND GROWTH MODEL?

A. One of the simplest assumptions that can be made is that future dividends will grow *forever*, at a constant rate, g, i.e. the growth rate can be maintained in perpetuity. In that case the DCF equation simplifies to,

$$P = Div_1 / (1+k) + Div_1 * (1+g) / (1+k)^2 + Div_1 * (1+g)^2 / (1+k)^3 + \ldots ,$$

which can be solved for k. The solution is well known to be,

$$k = Div_1 / P + g .$$

Q. DID YOU USE THE CONSTANT GROWTH DCF EQUATION GIVEN ABOVE IN ESTIMATING THE COST OF CAPITAL FOR YOUR SAMPLE OF TELEPHONE COMPANIES?

A. No. Once again a problem is raised by the fact that modern telephone companies are composed of a variety of businesses, some of which are expected to grow at rates of 30 percent or more in the short run. Such high growth rates are clearly not sustainable into perpetuity, so that the simple constant growth model cannot be applied unless one modifies the growth rate or adopts some mitigating assumption. Stewart Myers and Lynda Borucki state that "[f]orecasted growth rates are obviously not constant forever. Variable-growth DCF models, which distinguish short- and long-term growth rates, should give more accurate estimates of the cost of equity. Use of such models guards against naïve projection of short-run earnings changes into the indefinite future."[4]

Q. HOW DO YOU APPLY THE DCF MODEL?

A. I use a three-stage version. (There are numerous formulations of the DCF model of varying complexity. Damodaran, for example, describes several different DCF

models in his book. It should be noted that what he calls the "three-stage model" is different from the model we employ. Damodaran's "H Model" is more comparable to the model that we use.) The first stage lasts five years because that is the longest horizon over which analysts forecasts of growth are available. The second stage is assumed to last 15 years. During this stage the growth rate falls from the high level of the first five years to the growth rate of the U.S. economy by the end of year 20. From the twentieth year onward the growth rate is set equal to the growth rate for the economy because rates greater than that cannot be sustained into perpetuity. A perpetual growth rate that exceeded the growth rate of the economy would illogically imply that eventually the whole economy would be comprised of nothing but telephone companies.

Q. WHAT DATA ARE USED TO ESTIMATE DIVIDEND GROWTH DURING THE FIRST FIVE YEARS?

A. To estimate growth rates during the first five years I use the Value Line dividend forecasts for 1997 and individual company earnings forecast data from Institutional Brokers' Estimate System ("IBES") as of January 17, 1997. To compile the IBES data, over 2000 analysts are surveyed each month regarding their estimates of five-year earnings growth rates for a wide variety of major American companies. These analysts represent over 100 different securities firms. The forecasts are tabulated

and widely distributed to subscribers, including most large institutional investors, such as pension funds, banks, and insurance companies.

By relying on the IBES data, which is for earnings, I am implicitly assuming that dividends and earnings will grow at approximately the same rate over the five-year horizon. There are no growth forecasts beyond a five-year horizon. That is why an assumption must be made about how the growth rate behaves after that. As stated above, I assume that it converges to the long-run aggregate growth rate of the U.S. economy over the succeeding 15 years.

Q. WHAT IS A REASONABLE ESTIMATE FOR LONG-RUN GROWTH IN THE AGGREGATE ECONOMY?

A. The long-term growth forecast was derived by averaging the long-term GNP growth forecasts obtained from the Wharton Econometric Forecasting Associates ("WEFA") Group and from Ibbotson Associates. The WEFA Group is an econometric forecasting organization, formed in 1987 through a merger of WEFA and Chase Econometrics. Ibbotson Associates is widely-known in the fields of finance and valuation as one of the leading providers of securities returns data and publications. As of January 13, 1997, WEFA predicted an average nominal GNP growth rate of 4.82% from 1997 through 2020. As of December 31, 1996, Ibbotson and Associates forecast long-term inflation to be 4.4% annually and long-term real GNP growth rate to be 3.1%. Compounding these two forecasts, Ibbotson

predicted a nominal GNP growth rate of 7.5%. Given the magnitude of the difference, I decided to take the average of the two forecasts, 6.16%, rather than choose a single GNP forecast.

Q. DO YOU APPLY THE DCF MODEL JUST TO BELLSOUTH AS YOU DID IN ESTIMATING THE COST OF DEBT?

A. No. Consistent with financial practice, I use the DCF model to estimate cost of equity for all of the companies selected as likely comparables to BellSouth, in addition to estimating a DCF cost of equity for BellSouth.

Q. WHY IS IT A GOOD IDEA TO APPLY THE DCF MODEL TO A NUMBER OF COMPANIES, NOT JUST THE COMPANY WHOSE COST OF COMMON EQUITY YOU ARE TRYING TO ESTIMATE?

A. Estimating future growth for a company always involves some uncertainty because no analyst can be expected to have perfect foresight. In some cases, the growth rate may be overestimated and in other cases it may be underestimated. On average, over a group of similar companies, these estimation errors tend to cancel out so that the average growth rate for the group is estimated more accurately than the growth rate for any individual company. (I refer to estimation error and the desirability of using averages in several discussions in this paper. The following excerpt from *A Guide to Econometrics*, (3rd Edition, The MIT

Press, Cambridge, MA, 1992) by Peter Kennedy summarizes in the purpose for using larger samples: "The sampling distribution of most estimators changes as the sample size changes. The sample mean statistic, for example, has a sampling distribution that is centered over the population mean but whose variance becomes smaller as the sample size becomes larger. In many cases it happens that a biased estimator becomes less and less biased as the sample size becomes larger and larger— as the sample size becomes larger its sampling distribution changes, such that the mean of its sampling distribution shifts closer to the true value of the parameter being estimated." (pg. 18))

Consequently, I apply the DCF method to all the telephone companies in the previously-selected sample.

Q. HOW IS THE DCF COST OF EQUITY CAPITAL COMPUTED?

A. Given the market price of a company's stock, the current dividend, and the forecast growth rates during each of the three stages, equation (2) can be solved iteratively for k. The iterative solution is the estimate of the cost of equity capital. (I utilize an annual DCF model because telephone operating companies receive payments for the use of their network elements on a monthly basis, and consequently, are able to reinvest their cash flows on an approximate monthly basis. Thus, the effective rate that the telephone companies receive is the allowed

rate -- as determined in interconnection proceedings-- compounded monthly, regardless of the fact that telephone companies only pay dividends quarterly. Consequently, the use of a DCF cost of equity determined using the annual formula is conservatively high.)

Q. WHAT IS YOUR DCF ESTIMATE OF THE COST OF EQUITY CAPITAL?

A. Exhibit BC-4 presents the DCF estimates of the cost of equity capital derived from the three-stage model for the telephone company sample. The estimates range from a low of 8.97 percent to a high of 12.21 percent. The cost of equity capital for BellSouth is estimated to be 10.99 percent, based on a value-weighted average of the equity cost of capital for all Telephone Holding Companies (THC's) (excluding BellSouth) and the cost of capital for BellSouth itself. The table below shows how this cost of equity capital was computed:

WEIGHTED AVERAGE DCF COST OF EQUITY FOR BELLSOUTH			
	Weight	**Rate**	**Weighted Cost**
Average (excluding BellSouth)	.75	11.07	8.30
BellSouth	.25	10.74	2.69
Weighted Cost of Equity			10.99

Q. WHY DO YOU USE A WEIGHTED AVERAGE TO COMPUTE BELLSOUTH'S DCF COST OF EQUITY?

A. There is a trade-off between two considerations. First, because the DCF approach, like any approach, estimates the cost of equity capital with error, it is wise to use an average. This is because in the averaging process errors tend to cancel with overestimates offsetting underestimates. However, the DCF method does not have a mechanism to adjust for differences in risk caused by differing capital structures employed by the firms in the sample. Therefore, of all the individual companies in the sample, BellSouth provides the best estimate of BellSouth's own cost of capital. In light of these two considerations, I feel a weighted average which assigns a ¾ weight to the average excluding BellSouth and a ¼ weight to BellSouth is the best estimate. Using this procedure, BellSouth is given a significantly larger weight than any of the other companies in the sample, but a smaller weight than the aggregate of all the comparables.

Q. WHAT OTHER METHODS DID YOU USE TO ESTIMATE THE COST OF EQUITY?

A. I also used the capital asset pricing model ("CAPM").

Q. WHAT ARE CAPITAL ASSET PRICING MODELS?

A. Capital asset pricing models are mathematical formulas designed to quantify the trade-off between risk and return. Professor William Sharpe was awarded the Nobel Prize for developing the first capital asset pricing. Here I employ several updated variants of Professor Sharpe's model.

Q. HOW DOES THE CAPITAL ASSET PRICING MODEL (CAPM) WORK?

A. The CAPM is designed to give the risk premium, that is the premium over the rate on Treasury securities, required to induce investors to hold specific issues of common stock. The standard CAPM is given by equation (3),

Company risk premium = Company "beta" * Market risk premium.(3)

To apply the CAPM for a given company, it is necessary to estimate both that company's beta and the market risk premium.

Q. WHAT IS A COMPANY'S BETA?

A. The beta coefficient measures the systematic risk of investing in a company's equity. The CAPM is built upon the insight that investors will be rewarded for bearing only those risks, called systematic risks, that cannot be eliminated by diversification. To understand the difference between systematic and non-systematic risk, consider a hypothetical investment in Apple Computer. The risks

associated with this investment can be seen as arising from two sources. First, there are risks that are unique to Apple. Will Apple design competitive products? Will computer users accept Apple's new operating system? Second, there are risks that affect all common stocks. Will the economy enter a recession? Will war break out in the Middle East?

The risks that are unique to Apple can be eliminated by diversification. An investor who invests only in Apple will suffer significant losses if Apple's new products are a failure, but an investor who holds Apple along with hundreds of other securities will hardly notice the impact on the value of his or her portfolio if Apple's new products fail. Therefore, risks that are unique to Apple are said to be non-systematic.

On the other hand, market-wide risks cannot be eliminated by diversification. If the economy enters a recession and stock prices fall across the board, investors holding hundreds of securities fare no better than investors who put all their money in Apple computer. Thus, economy-wide risks are systematic.

The CAPM says that only systematic risks, as measured by beta, are associated with a risk premium. Non-systematic risks are not associated with premiums because they can be eliminated by diversification.

This concept is particularly important for the determination of cost of capital

because the risk that a company will lose customers to competition -- such as a network leasing company or a local exchange company -- is a diversifiable risk which does not increase the risk premium according to capital market theory.5

Q. HOW DO YOU CALCULATE BETA?

A. Beta is typically calculated by a procedure called regression analysis. In regression analysis, the returns on the subject stock (the dependent variable), are regressed against the returns of a market portfolio of stocks (frequently the S&P 500) to estimate statistically the degree that the independent variable movements in the market portfolio have caused the returns of the subject company. Using this statistical tool, therefore, the sensitivity of a stock to movements in the market can be estimated. This sensitivity is what determines beta. In this case, I used Dow Jones Beta Analytics software to obtain betas computed on five years of monthly return data through December 31, 1996 for BellSouth and the comparable companies. Dow Jones Beta Analytics is a common source for betas used by finance professionals. Returns on the S&P 500 were used as the market proxy. Because beta is measured with error, the average beta over all the comparables is a more accurate indicator of the true beta than any individual estimate of beta.

Betas can also be calculated over other time periods and using different observation intervals. For examples, for newer smaller companies one year of daily data are

often used to measure beta. This is because the true underlying beta is likely to be changing for such companies and because five years of data are often not available. The drawback is that the shorter sample period and more frequent observation interval increase measurement error. In this case I concluded that the sample companies were sufficiently large, established and stable that it was more appropriate to use five years of monthly data, which is consistent with the methodology used by many institutional providers of betas, including Merrill Lynch, S&P Compustat and Wilshire Associates.

While technological and legislative change has impacted the telecommunications industry, it is equally clear from publicly available information that such change has been anticipated and considered over time by industry participants, financial analysts and credit-rating agencies. The THC's trade very efficiently, so risks that are anticipated are impounded in the THC's stock prices rapidly and fairly. (To address the question of whether the 5-year betas are sufficiently forward-looking, I also obtained predicted betas calculated by BARRA, which are discussed later.)

Before averaging individual betas it is necessary to take account of the fact that the various comparable companies have differing amounts of debt in their capital structures. The amount of a company's debt leverage affects the riskiness of its stock returns and thereby its beta. To take account of this, a two-step procedure is used to estimate the average beta. First, the raw betas (i.e. betas computed using the Dow Jones software without accounting for capital structure differences) are

estimated for each of the sample companies. Second, the raw betas are "unlevered" using standard financial economic formulas and based on the market value debt/equity ratios of each respective company as of December 31, 1996. The formula for "unlevering" a raw, or "levered" beta is,

$$B_u = B_L / [1 + (1 - T_c) \times D/E] \quad (4)$$

where,

B_u = the "unlevered" beta,

B_L = the "levered" beta,

E = the value of the sample company's equity;

T_c = the corporate tax rate (typically an average rate for the sample);

D = the value of the sample company's debt.

This puts all the betas on comparable terms so that they can be averaged.

Once the average has been estimated, the beta for any individual company is estimated by "re-levering" using a simple variant of formula (4) which solves for B_L, the "levered" beta.

Q. WHAT IS YOUR ESTIMATE OF BETA?

A. My raw (levered) estimates of beta are presented in Exhibit BC-5. They vary from a high of 1.38 to a low of 0.48 on a levered basis. As I discussed above, however, the betas must be unlevered first to adjust for the different amount of

debt leverage employed by the individual companies before calculating an average. Exhibit BC-5 also shows the unlevered betas and their average. The average unlevered beta for the entire sample is 0.66. (Note that the judgmental weighting which I utilized in estimating the average DCF cost of equity is not necessary because betas can be unlevered to adjust for the capital structure leverage of the companies in the sample.) The average unlevered beta is re-levered using the formula discussed above to take BellSouth's 1996 capital structure into account, arriving at a beta of **0.77** for BellSouth.

Q. IS THERE OTHER INFORMATION THAT SUPPORTS THE BETA ESTIMATE THAT YOU USE IN YOUR ANALYSIS?

A. Yes. In addition to the betas obtained from Dow Jones Beta Analytics, I obtained predicted betas from BARRA. BARRA (formerly Rosenberg Associates) is an internationally known financial consulting firm providing risk measurement services to investment managers, corporations, consultants, securities dealers and traders, and master custodians. The predicted betas are developed using sophisticated financial modeling techniques which account for factors which impact the future risk of a company. Unlike conventional regression betas, therefore, the BARRA betas do not rely solely on historical stock returns and explicitly consider forward-looking projections. Copeland, Koller and Murrin recommend the use of BARRA predicted betas.[6] The BARRA predicted betas for the sample telephone

holding companies are generally lower than the ones obtained from Dow Jones Beta Analytics. The predicted BARRA beta for BellSouth is 0.72 which is lower than the beta of 0.77 that I have calculated for BellSouth.

Q. HOW DOES THE BETA RISK OF THE COMPANIES IN YOUR SAMPLE COMPARE WITH THE BETA RISK OF COMMON STOCK GENERALLY?

A. By definition, the beta of all common stock generally (in other words, the beta of the market) is 1.0. Therefore, it appears that the beta of telephone stocks is less than that of common stocks generally. This is corroborated by betas obtained for THC stocks from Value Line. This means that investments in telephone company stocks are less risky than investments in typical industrial companies. Consequently, the cost of capital for telephone companies should also be less than it is for the average industrial stock.

Q. WHAT DOES YOUR BETA ANALYSIS IMPLY THE COST OF EQUITY CAPITAL SHOULD BE IN THIS CASE?

A. Beta alone is insufficient for estimating the cost of equity capital. To apply the CAPM it is also necessary to estimate the market risk premium.

Q. WHAT IS THE MARKET RISK PREMIUM?

A. The risk premium on the market is the amount of added expected return that investors require to hold a broad portfolio of common stocks (a proxy for the market as a whole) instead of risk-free Treasury securities.

Q. WHAT TREASURY SECURITIES ARE USED TO MEASURE THE RISK PREMIUM?

A. Because there are over 100 issues of Treasury securities, some convention is required. Commonly, the risk premium is measured over both short-term Treasury bills with a maturity of one to three months and long-term Treasury bonds with a maturity of 10 to 30 years. In this study, I use one-month Treasury bills and 20-year Treasury bonds using Ibbotson Associates' and Jeremy Siegel's data going back to 1802.

Q. HOW IS THE MARKET RISK PREMIUM ESTIMATED?

A. The market risk premium can be estimated two ways. First, the DCF approach can be applied to the market as a whole. Second, the premium can be estimated by examining historical data on the difference between the return on a broad portfolio of common stocks and associated Treasury securities.

Q. HOW CAN THE DCF MODEL BE USED TO ESTIMATE THE MARKET RISK PREMIUM?

A. Two steps are required to estimate the market risk premium using the DCF model. The first step is to compute the DCF expected return (another word for the cost of equity) for the market as a whole. Deducting the risk-free rate from the expected return gives the market risk premium.

Q. WHAT IS THE DCF ESTIMATE OF THE EXPECTED RETURN ON THE MARKET?

A. The starting point for estimating the expected return on the market is the S&P 500 index. The sample is then limited to those S&P 500 companies that pay a dividend of at least 3 percent on the grounds that the DCF approach may be less accurate for companies that pay small dividends. (All of the companies in the telephone sample pay dividends greater than three percent except Cincinnati Bell.) The sample includes large companies for which the data is considered to be reliable for purposes of DCF estimates. For the selected companies, the three-stage DCF model is applied in the same fashion as it was applied to the sample of telephone companies. Finally, the individual DCF estimates for the sample companies are averaged. This average, which comes out to be 11.26 percent, is used as an estimate of the expected return on the market as a whole.

Q. GIVEN THE EXPECTED RETURN ON THE MARKET HOW DO YOU CALCULATE THE MARKET RISK PREMIUM?

A. The market risk premium is computed by subtracting the risk-free rate from the expected return. In the case of the 20-year Treasury bond this is straightforward. The calculations are shown in Exhibit BC-6. The Exhibit shows that as of December 1996, the 20-year bond yield was 6.73 percent. Subtracting 6.73 from 11.26 percent gives a market risk premium over long-term Treasury bonds of 4.53 percent.

In the case of one-month Treasury bills the situation is more complicated. Because the goal of the analysis is to estimate the long-run cost of capital, using a one-month interest rate can be misleading. A more appropriate choice is the average return on one-month Treasury bills that is expected to obtain over the long-term. This can be calculated using the following two-step procedure. First, compute the long-run historical difference between the return on one-month Treasury bills and the return on 20-year Treasury bonds. Second, subtract that historical difference from the current yield on 20-year bonds. The difference gives a forward-looking market estimate of the average expected yield on one-month Treasury bills over the next 20 years. Exhibit BC-7 shows that the average expected one-month Treasury bill rate over the long run is 5.36 percent as of December 31, 1996. Subtracting this rate from the expected return on the market gives a market risk premium over Treasury bills of 5.90 percent as shown in Exhibit BC-6.

Q. WHAT IS YOUR HISTORICAL ESTIMATE OF THE MARKET RISK PREMIUM?

A. The historical risk premium is defined as the historical difference between the return on the stock market and the risk-free rate. The proper estimate of the market risk premium is a question that is disputed among both academics and practitioners with regard to two primary issues. First, when analyzing historical data, should an arithmetic or geometric average be used to calculate the historical average risk premium? Second, over what period should the average be computed to accurately capture the risk premium expected in the future? Specifically, should the entire sample period back to 1802 be used, should the sample period be limited to post-1926 when more complete data became available, should only post-war data be employed because the role of government in the economy has changed fundamentally since the great depression, or should even more recent data be used? With regard to the type of average, many academic authors favor the arithmetic over the geometric.[7] Others, however, recommend using the geometric average because arithmetic averages are biased by the measurement period.[8,'9] With regard to the sample period for computing the average risk premium, Ibbotson argues that a long data series is required so that the equity risk premium is not unduly influenced by very good or very poor short-term results. The 1996 Yearbook published by Ibbotson Associates suggests that the post-1926 data compiled therein provides a representative period of returns that can occur under diverse economic

circumstances.[10] However, Ibbotson has recently cautioned that the long-run stock market returns calculated by his firm may not prove predictive. He believes that the U.S. is not as risky as it was in 1925, suggesting that lower returns will be experienced in the future. Ibbotson also states that his historical averages overstate the forward-looking cost of equity because of survivorship bias.[11] For example, the U.S. stock market survived despite the Great Depression. As of 1925, however, there existed a risk that the stock market would be entirely wiped out—as happened in Germany, Japan, China and Russia. If these countries were included in an average, historical returns would be much lower.[12]

Siegel presents convincing evidence that the risk premium was abnormally high after the U.S. went off the gold standard in 1944 based on an analysis of data going back to 1802. He notes that the current equity premium appears to be returning to the 2 - 3 percent range that existed before the second world war.[13] Blanchard also presents evidence that the risk premium has declined to 2 to 3 percent in recent years and argues that either the DCF approach should be employed in place of relying on an average or more recent data should be used.[14]

In light of these questions, Exhibits BC-6 and BC-8 present both DCF estimates of the market risk premium and historical averages computed using both arithmetic and geometric averages calculated over various periods of time.

Q. GIVEN THE INFORMATION IN EXHIBITS BC-6 AND BC-8, WHAT IS THE BEST MEASURE OF THE MARKET RISK PREMIUM?

A. Taking account of all the information in Exhibits BC-6 and BC-8, I conclude that the reasonable estimates of the market risk premium are 7.5 percent over one-month Treasury bills and 5.5 percent over 20-year Treasury bonds. These estimates are conservative (i.e., on the high side) in the sense that they are above the average premiums observed in a majority of the periods, including the full sample, and are greater than those implied by the DCF analysis. Also, Damodaran uses a 5.5% risk premium over 20-year Treasury bonds, while Copeland, Koller & Murrin recommend using a 5 to 6 percent risk premium.[15] Additional information indicating that my choice is conservative is provided by the statement of a correspondent for Forbes magazine, who indicated that "[t]o venture into the volatile stock market instead of cozying up to bonds, investors rightfully expect a superior return from stocks. In fact, they expect to beat the bond return by four full percentage points— something called the risk premium on stocks... "[16] Moreover, in its 1990 Rate Represcription Order, the FCC agreed with the position of the Consumer Coalition that the risk premiums used by the LEC's experts were unrealistically high, particularly when compared to those used by financial analysts. The FCC cites the Consumer Coalition expert's testimony that "...the Wall Street analyst reports, relied upon by the RHCs to support their positions on other issues, use much smaller risk premiums, ranging from 2.0% to 5.4%."[17]

Q. GIVEN YOUR ESTIMATES OF BETA AND THE MARKET RISK PREMIUM WHAT IS THE APPROPRIATE ESTIMATE OF THE COST OF EQUITY CAPITAL?

A. To review, the CAPM says that,

Cost of equity capital = Risk-free rate + Beta * Market risk premium.

Applying this equation using the long-run, expected, one-month Treasury bill rate as the measure of the risk free rate gives:

Cost of equity capital = 5.36% + 0.77 * 7.5% = 11.14%.

Notice that in the preceding equation the expected long run Treasury bill rate over the next 20 years is used, not the current one-month Treasury bill rate.

Applying the CAPM equation using the 20-year Treasury bond as the measure of the risk free rate gives:

Cost of equity capital = 6.73% + 0.77 * 5.5% = 10.97%.

This estimate is close to that obtained using Treasury bills as the measure of the risk-free rate. In light of these results, I use the average of the two, **11.05** percent, as the CAPM estimate of the cost of equity capital.

Q. HOW DO YOUR CAPM RESULTS COMPARE WITH YOUR DCF ESTIMATES OF THE COST OF EQUITY CAPITAL?

A. Given the difficulty of estimating the cost of equity capital, a difference of only 6 basis points between the two estimates is reassuring.

Q. COMBINING THE TWO METHODS, WHAT IS THE COST OF EQUITY CAPITAL FOR BELLSOUTH?

A. The two estimates of the cost of equity capital produced a range of 10.99 to 11.05 percent. I feel the best overall estimate is approximately the average of the three-stage DCF and CAPM cost of equity estimates. The cost of equity capital that I use in the WACC calculations is **11.02** percent.

VII.

CAPITAL STRUCTURE AND THE WACC

Q. WHAT IS MEANT BY THE "CAPITAL STRUCTURE" OF A BUSINESS?

A. Most American businesses are financed by a combination of equity (common stock) and debt (including bonds and bank loans). The capital structure refers to the fraction of debt and equity used to finance a business. In terms of the WACC

formula presented at the outset, the capital structure is determined by the financing weights, w_e and w_d.

Q. IS THE CAPITAL STRUCTURE RELATED TO THE RISK OF A BUSINESS?

A. Yes. As discussed earlier, companies that face greater operating risk tend to take on less debt. For example, most computer software and biotechnology companies typically have virtually no debt in their capital structure.

Q. HOW DO YOU ESTIMATE THE CAPITAL STRUCTURE FOR A PARTICULAR BUSINESS?

A. The goal is to estimate the long-run target financing weights that a rational, informed management team would employ.[18] If there are companies participating in comparable business activities, the accepted solution is to use their observed capital structure as the starting point. In this case, however, the comparables are all riskier than the business activity in question (the network element leasing business) because of the necessity to use data that are only available at the holding company level.

Alan Shapiro states that:

"[i]n multiproduct firms, the requirement that projects be of homogeneous risk is more likely to be met for divisions than for the company as a whole. This suggests that the use of a divisional cost of capital may be valid in some cases in which the use of a companywide cost of capital would be inappropriate. Conglomerate firms that compete in a variety of different product markets … often estimate separate divisional costs of capital that reflect both the differential risks and the differential debt capacity of each division.

The estimation of these divisional costs of capital is tricky. All the firm observes is its overall cost of capital, which is a weighted average of its divisional costs of capital."[19]

For now I proceed using the holding company information because of the data limitation.

Q. WHAT ARE THE CAPITAL STRUCTURE WEIGHTS FOR YOUR SAMPLE OF COMPANIES?

A. The current capital structures for my sample of companies is shown in Exhibit BC-9. Notice that the comparison depends on whether book value or market value weights are used. At this juncture, there remains a debate among academics, practitioners, and forensic experts regarding the choice between book and market weights. In traditional rate of return hearings, capital structure is typically presented in terms of book value weights.

The average book value debt weight for the sample companies is 56 percent as of December 31, 1996. BellSouth's own debt weight is 44 percent. In terms of market value weights, however, the debt weights are lower. The average for the full sample is 24 percent and BellSouth's debt weight is 20 percent. However, market value debt weights of the holding companies probably understate long-run target debt weights in the capital structure of the network element leasing business as discussed in detail in Section VIII below. Consequently, in this case it is inappropriate to rely solely on current market value capital structure weights of the Telephone Holding Companies when calculating the WACC for the network element leasing business. Therefore, I apply the WACC formula using both book and market weights to establish a range.

Q. WHAT CAPITAL STRUCTURES WEIGHTS DO YOU USE IN YOUR SAMPLE?

A. Given the dispersion in capital structure weights, I use the average weights in my WACC calculations. Both book and market averages are employed to establish a range.

Q. GIVEN YOUR PRECEDING TESTIMONY, WHAT IS AN APPROPRIATE RANGE FOR THE WEIGHTED AVERAGE COST OF CAPITAL FOR BELLSOUTH?

A. The table below computes the WACC from the estimates of the cost of debt, the cost of equity and the capital structure developed in my preceding testimony.

WACC Based On Average Book Debt Weight

	Weight	Rate	Weighted cost
Equity	0.44	11.02	4.85
Debt	0.56	7.06	3.95
WACC			**8.80**

WACC Based On Average Market Value Weight

	Weight	Rate	Weighted cost
Equity	0.76	11.02	8.37
Debt	0.24	7.06	1.70
WACC			**10.07**

Q. WOULD IT AFFECT YOUR ESTIMATE SIGNIFICANTLY IF YOU USED BELLSOUTH'S OWN EQUITY MARKET VALUE WEIGHT OF 80% RATHER THAN THE AVERAGE EQUITY MARKET VALUE WEIGHT?

A. No. If the 80% equity weight was used in the WACC calculation, BellSouth's estimated WACC would be 10.22%.

Q. OVERALL WHAT DO YOU CONCLUDE IS A FAIR ESTIMATE OF THE COST OF CAPITAL?

A. I believe a fair estimate is the midpoint of my range. Averaging 8.80 and 10.07, the midpoint comes to 9.43 percent.

Q. IS THIS ESTIMATE OF THE COST OF CAPITAL FORWARD LOOKING?

A. Yes. The cost of debt is estimated from the yields to maturity of BellSouth's bonds obtained from the Bond Guide, which represent the forward looking returns that investors would expect to earn on these bonds.[20] The DCF model used for estimating the cost of equity employs forward-looking growth projections made by analysts and forecasting organizations. The CAPM model as I have employed it here uses some current U.S. Treasury bond rates, which impound forward-looking

expectations, as one of its two return components. The CAPM model by necessity uses historical information to estimate a company's riskiness, through the calculation of a beta, and to estimate the market risk premium, which is assumed to generally prevail into the future. Regarding these issues, I have considered forward looking predicted BARRA betas and current research regarding the forward-looking equity risk premium.

VIII.

POTENTIAL UPWARD BIAS IN THE ESTIMATED COST OF CAPITAL

Q. IS THERE ANY REASON TO BELIEVE THAT THE COST OF CAPITAL RANGE YOU HAVE CALCULATED IS ON THE HIGH SIDE?

A. Yes. Modern diversified corporations like BellSouth operate dozens of different businesses, some of which are more risky than others. Consequently, the operating risk of the corporation is a weighted average of the risks of all the constituent businesses.

Q. WHAT IS THE BUSINESS FOR WHICH THE COST OF CAPITAL IS BEING ESTIMATED IN THIS CASE?

A. The business for which the cost of capital is being estimated in this case is essentially the business of "leasing" local exchange telephone network elements

to retail providers. More specifically, BellSouth will be required to make available to retail providers the same unrestricted access to its network elements that it currently provides to its own retail arm. This leasing of network facilities, some of which may have natural monopoly aspects, should have relatively low risk compared to many of the risky business endeavors being pursued by the telephone holding companies. BellSouth's risky business undertakings include domestic cellular and personal communications service, advertising and publishing. In addition, BellSouth has invested in wireless telephone systems in Argentina, Australia, Chile, Denmark, Germany, India, Israel, New Zealand, Panama, Peru, Uruguay and Venezuela. BellSouth is also an equity investor in wireless data communications networks in the United States, the United Kingdom, the Netherlands, Belgium and Singapore. (The credit-rating agencies have noted the increasing risk-profile of the telephone holding companies in comparison to core telephone operations. For example, Standard & Poor's states in its Global Sector Review (November 1996, p. 288) that "[p]artially offsetting the solid position of its local exchange companies is the higher-risk profile of GTE's diversified activities, including its wireless and international ventures.") I understand that there is currently very little facilities-based competition, and wide-spread facilities-based competition may take years to develop. The FCC believes that unbundled network elements and interconnection services are bottleneck, monopoly services that do not now face significant competition (FCC Order ¶702). Further, increased demand spurred by competition may result in a more extensive use of local telephone companies' networks even as competing

facilities are eventually constructed. There is thus little threat that local telephone companies' network facilities will remain idle.

Q. HAVE ANY TELEPHONE HOLDING COMPANIES MADE COMMENTS TO THE PUBLIC REGARDING BENEFITS TO BE DERIVED FROM THE PROVISION OF NETWORK ELEMENTS TO COMPETITIVE LOCAL EXCHANGE COMPANIES?

A. Yes. At its internet site (see Exhibit BC-10), Bell Atlantic has stated that the business of providing network elements represents a revenue opportunity for the company, in that there would now be many more users of its network without the need to make additional capital expenditures. Bell Atlantic's statements to the public indicate that the network element leasing business is subject to much less risk than its retail local exchange business in the environment created by the Telecommunications Act of 1996.

Q. WHAT RISKS ARE ASSOCIATED WITH THE BUSINESS OF "LEASING" OF UNBUNDLED NETWORK ELEMENTS?

A. There is still the risk of regulation itself. The rate of return a network is allowed to earn depends on the outcome of proceedings such as this and remains somewhat uncertain. That risk can be substantially reduced if this Commission

adopts compensatory forward-looking pricing rules that tell investors that telephone holding companies will have the opportunity to recover all efficiently-incurred costs on a forward-looking basis. In addition, there remains some risk that consumers, particularly business users, will bypass the network as other alternatives become available. (However, under capital market theory, competitive risks are not relevant for computing the cost of capital because they can be diversified away.) These risks, however, are substantially less than the risks faced by telephone holding companies' other businesses, some of which are (or may soon be) subject to competition.

Q. IS THERE A SIMPLE WAY TO DISTINGUISH THE BUSINESS OF LEASING THE NETWORK FROM PROVIDING LOCAL SERVICE?

A. Yes. Think of integrated telephone holding companies, including BellSouth, as being composed of separate business units. One business unit owns the network and leases network elements to all local service providers, including both competitors and the telephone companies' other business units that are involved in the provision of local service. Whereas those BellSouth units involved in providing local service are in businesses that (if prices are set appropriately in these proceedings) will be faced with new competitors, the unit involved in leasing the network which all the competitors need to use has virtual monopoly power and faces much less risk. The sample of companies used in my analysis for which the

cost of debt and equity are estimated is composed of diversified telephone companies. As stressed earlier, these companies operate a variety of businesses, virtually all of which face a great deal more operating risk than leasing a local exchange network. This has been clearly recognized by financial analysts and the bond rating agencies. The company to which the WACC should be applied, however, is one which is involved exclusively in leasing network facilities. Under these circumstances, using a higher debt weight than the current market value weights for the sample companies is one way to take account of this problem. The higher debt weight may be more representative of the target capital structure for the low-risk network element leasing business.

Q. HAVE YOU SEEN ANY INFORMATION TO THE PUBLIC WHICH CONFIRMS THE REASONABLENESS OF YOUR COST OF CAPITAL RANGE?

A. Yes. Salomon Brothers in its January 1996 report "Regional Bell Operating Companies—Opportunities Ring ... While Danger Calls" stated that "[b]ased on our estimates, the RBHCs currently have an average weighted cost of capital of approximately 8.6%. In order to value the RBHCs on a level playing field, we used the same discount rate in each DCF. Specifically, we used a discount rate of 10%, which we believe should be the minimum return an investor would expect in order to entice him to invest in a security, despite the fact this is slightly above the cost of capital." Also, as part of its proposed merger with NYNEX, Bell Atlantic

submitted to its shareholders a joint proxy statement/prospectus on September 18, 1996 in which Bell Atlantic's investment advisor, Merrill Lynch, performed a DCF analysis of the two companies' relative market values, estimating a discount rate in the range of 8 to 10 percent for the telephone company portion of its portfolio of businesses.

Q. SHOULD THE COST OF CAPITAL ESTIMATE ACCOUNT FOR QUARTERLY COMPOUNDING?

A. No. Telephone operating companies receive payments for the use of their network elements on a monthly basis, and consequently, are able to reinvest their cash flows on an approximate monthly basis. This is a more frequent basis than investors receive their quarterly dividends from the telephone holding companies. Thus, the effective rate that the telephone companies receive is the allowed rate— as determined in this hearing— compounded monthly, regardless of the fact that BellSouth pays dividends to investors quarterly. If the Commission allows a rate which is estimated using a quarterly compounding DCF model, BellSouth will get an effective rate compounded both quarterly (as allowed) and monthly (as actually received). To be precise, therefore, if quarterly compounding is allowed, the cost of equity would also have to be decompounded to account for the fact that BellSouth will be able to reinvest its proceeds on a monthly basis. The net effect would result in a lower allowed rate than the annual DCF cost of equity proposed

by me. Consequently, the use of a DCF cost of equity determined using the annual formula is conservatively high.

Q. SHOULD THE COST OF CAPITAL ESTIMATE BE INCREASED FOR EQUITY FLOTATION COSTS?

A. No. BellSouth is a large Fortune 500 company whose stock trades in an efficient market. As part of the process of arriving at the day-to-day prices for BellSouth's stock, the market is anticipating future events which affect the cash flows that BellSouth will earn. This process clearly includes the anticipation of future cash expenditures, including financing costs for both debt and equity which reduce BellSouth's cash flows. Because the price of BellSouth's stock has accounted for flotation costs already, an estimation of the cost of equity using the DCF model accurately reflects the required return of investors. Adding a flotation cost adjustment would in effect double count the cost of financing.

Q. IF YOUR THEORETICAL ARGUMENT REGARDING FLOTATION COSTS IS CORRECT, WHY HAS THERE BEEN SO MUCH DISCUSSION ON THIS ISSUE IN THE TRADITIONAL REGULATORY RATE HEARING CONTEXT?

A. The regulatory context is really a different issue. In the regulatory world, a main purpose is to identify costs which can be charged back to the ratepayers by the

telephone operating company. Equity flotation costs have often been disallowed because it would not be fair to burden current ratepayers with all of those costs if the equity capital would be utilized indefinitely. One way that parties have tried to "amortize" these costs so that they could be recovered by the telephone company is to make the flotation cost adjustment to the allowed return, which would in effect charge it back to ratepayers perpetually in very small increments. This is not the issue for this proceeding. In this case, I am interested in the forward-looking cost of capital which fairly compensates for the riskiness of the business. Because BellSouth's stock trades efficiently, the market has assessed its prospective cash flows, including financing costs, to arrive at its estimate of the fair price. Consequently, the DCF derived cost of equity estimate is the proper measure for determining forward looking cost of capital.

Q. ARE THERE ALSO SPECIFIC PRACTICAL REASONS WHY A FLOTATION COST ADJUSTMENT WOULD NOT BE APPROPRIATE FOR BELLSOUTH?

A. Yes, there are two practical reasons. Over the past few years BellSouth has not issued common stock. Given the high level of equity in its market capital structure, there is no reason to expect large equity financings in the foreseeable future. Second, even if it intends to make large equity offerings, BellSouth has made the discretionary decision to pay large dividends to its shareholders. These dividends could alternatively be used to finance BellSouth's projects. Given this, it does not

appear that the CLEC's should be charged a premium if BellSouth decides to raise capital with external instead of internal funds.

IX.

CONCLUDING SUMMARY

Q. COULD YOU SUMMARIZE THE MAIN CONCLUSIONS OF YOUR TESTIMONY.

A. Using publicly-available data and accepted finance procedures I have estimated that the weighted average cost of capital for a diversified telephone holding company is in a range between 8.80 and 10.07 with a best point estimate of 9.43 percent. However, I have also stressed that this is an upward-biased estimate of the cost of capital that should be used in this case. In this case, the company in question is not a diversified holding telephone company, but a company in the more specialized (and less risky) business of providing network elements.

Q. DOES THAT CONCLUDE YOUR TESTIMONY?

A. Yes.

X.

Endnotes:

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4. Stewart C. Myers and Lynda S. Borucki, *Discounted Cash Flow Estimates of the Cost of Equity Capital—A Case Study*, Financial Markets, Institutions & Instruments, vol. 3, no. 3, New York University Salomon Center, 1994. *See also*, Ibbotson Associates, *Id.*, pp. 158-159; Sharpe, William F., Gordon J. Alexander and Jeffery V. Bailey, *Investments*, Fifth Edition, Prentice Hall, Englewood Cliffs, New Jersey, 1995, pp. 590-591; Damodaran, Aswath, *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance*, John Wiley & Sons, New York, 1994, pp. 99-101; Copeland, Tom, Tim Koller, and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, John Wiley & Sons, New York, 1994, pg. 295.

5. Ibbotson, Roger, and Gary P. Brinson, *Global Investing: The Professional's Guide to the World Capital Markets*, McGraw-Hill, 1993, at p. 45.

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11. Clements, Jonathan, *Getting Going, Keeping Perspective: Lower Expectations May Bring Happier Long-Term Results*, The Wall Street Journal, November 26, 1996. See also, Ibbotson, Roger G., and Gary P. Brinson, GLOBAL INVESTING: The Professional's Guide to the World Capital Markets, McGraw Hill, Inc., New York, 1993, pg. 171.

12. Brown, Stephen J., Wiliam N. Goetzmann and Stephen A. Ross, "Survival", *The Journal of Finance,* Vol. L, No. 3, July 1995.

13. Siegel, Jeremy, *Stocks for the Long Run*, Irwin, New York, NY, 1994. See also, Siegel, Jeremy J., "Risk and return: start with the building blocks", *The Financial Times*, May 12, 1997.

14. Siegel, Jeremy, *Stocks for the Long Run*, Irwin, New York, NY, 1994. See also, Siegel, Jeremy J., "Risk and return: start with the building blocks", *The Financial Times*, May 12, 1997.

15. Damodaran, *Id*, at p. 22, and Copeland *et al., Id,* at p. 260.

16. Kuhn, Susan E. Personal Fortune: *Why Bonds May Beat Stocks.* Forbes Magazine, October 28, 1996.

17. In the Matter of Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers. FCC 90-315, Adopted September 19, 1990; Released December 7, 1990. ¶'s 136 & 139, p. 7523

18. Ross, Stephen A., Randolph W. Westerfield and Jeffrey Jaffe, Corporate Finance, Fourth Edition, Irwin, Chicago, 1996, pg. 441.

19. Shapiro, Alan C., Modern Corporate Finance, Macmillan Publishing Company, 1990, pgs. 291-292.

20. Copeland, Tom, Tim Koller and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, Wiley and McKinsey & Company, New York, NY, 1995, at p. 251.

REBUTTAL TESTIMONY OF

PROFESSOR BRADFORD CORNELL

ON BEHALF OF

AT&T OF THE SOUTHERN STATES, INC., AND

MCI TELECOMMUNICATIONS CORPORATION, AND

MCI METRO ACCESS TRANSMISSION SERVICES, INC.

DOCKET NOS: 960833-TP/960846-TP/971140-TP/960757-TP/960916-TP

Q. PLEASE STATE YOUR FULL NAME AND OCCUPATION.

A. My name is Bradford Cornell. I am a professor of finance at the Anderson Graduate School of Management at the University of California at Los Angeles and the founder and President of FinEcon, a consulting firm that specializes in financial economics issues and the cost of capital.

Q. ARE YOU THE SAME BRADFORD CORNELL WHO PREVIOUSLY SUBMITTED PREPARED DIRECT TESTIMONY ON BEHALF OF AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC. AND MCI TELECOMMUNICATIONS CORPORATION IN THIS PROCEEDING?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to comment on BellSouth's proposal to adopt a 11.25% cost of capital. I will also comment on the analysis of Dr. Randall S. Billingsley, BellSouth Telecommunications' ("BST") cost of capital expert-

witness, which he has presented in rebuttal testimonies filed in several other states and which I anticipate will be filed in this proceeding.

Q. BELLSOUTH HAS PROPOSED A COST OF CAPITAL OF 11.25% FOR THIS PROCEEDING. HAS BELLSOUTH PROVIDE ANY SUPPORT FOR ITS COST OF CAPITAL ESTIMATE OF 11.25%?

A. No. BellSouth has not filed any support for its 11.25% cost of capital for the review of Florida Commission.

Q. WHAT IS YOUR VIEW OF THE COST OF CAPITAL ESTIMATE SUBMITTED IN THIS PROCEEDING ON BEHALF OF BELLSOUTH?

A. I believe that the 11.25 percent cost of capital advocated by BellSouth is far in excess of the forward-looking cost of capital for the provision of network elements or universal service, and is inconsistent with publicly-available cost of capital estimates by parties outside the context of this proceeding. In addition, BellSouth has provided no underlying information or model assumptions in direct testimony which support this cost of capital. This is not consistent with the requirements of the FCC's August 8 Order[1], which states at paragraph 691 that "[a]ny function necessary to produce a network element must have an associated cost. The study must explain with specificity why and how specific functions are necessary to provide network elements and how the associated costs were developed." [emphasis added] In sharp contrast, my direct testimony provided a very thorough explanation of the theories, models, assumptions and data which go into a cost of capital calculation consistent with modern finance theory.

Q. IS THE 11.25% RATE FORWARD-LOOKING?

A. No. It was determined by the FCC in 1990. The FCC stated in Paragraph 250.(4) of the its May 8, 1997 Universal Service Order that:

> ... the cost of debt has decreased since we last set the authorized rate of return. The reduction in the cost of borrowing caused the Common Carrier Bureau to institute a preliminary inquiry as to whether the currently authorized federal rate of return is too high, given the current marketplace cost of equity and debt. We will reevaluate the cost of capital as needed to ensure that it accurately reflects the market situation for carriers.

30-year Treasury bond rates have fallen from 9.03% as of September 1990 to 6.33% as of October 1997. This is a decline of 270 basis points since the 11.25% rate was prescribed. Using this decline as a rough rule of thumb, this would imply a current cost of capital of 8.55% before considering the question of whether the risk has increased.

Q. IN OTHER STATES DR. BILLINGSLEY TESTIFIED THAT HE HAD PERFORMED "TESTS OF REASONABLENESS" IN SUPPORT OF THE 11.25% COST OF CAPITAL. DO YOU BELIEVE THAT DR. BILLINGSLEY'S TWO "TESTS OF REASONABLENESS" ARE PERSUASIVE?

A. No. They are mathematically self-fulfilling: i.e., they assume the desired conclusion. If you take the 11.25% cost of capital assumed by BST as being

correct (which there is no reason to do), and you assume Dr. Billingsley's cost of debt estimate is correct, and you assume that historical or previously-allowed capital structures are correct, then you have to get a high implied cost of equity. However, this Commission does not have to assume that 11.25% is the correct cost of capital *a priori*.

Q. IN REGARD TO YOUR ANALYSIS, IN OTHER STATES DR. BILLINGSLEY HAS TESTIFIED THAT TELEPHONE HOLDING COMPANIES ARE NOT ACCURATE PROXIES FOR BST. THEREFORE, HE CALCULATES A DCF COST OF EQUITY ON A SAMPLE OF COMPANIES DERIVED BY A STATISTICAL CLUSTER ANALYSIS. DO YOU AGREE WITH HIS PREMISE AND APPROACH?

A. No. First, he has provided no convincing argument or evidence showing that the telephone holding companies are not the closest available set of comparables for the business of unbundled network element leasing. As I have discussed in my direct testimony, the telephone holding companies are riskier than the network element leasing business because of their many riskier business. Therefore, use of telephone holding companies as proxies will yield a conservatively high cost of capital estimate. Although Dr. Billingsley has performed an arcane statistical analysis, his results do not, in my opinion, pass the tests of reason and common sense. If one were to accept the results of his cluster analysis, then one would have to believe that the risk of the network element leasing business was more similar to the risks faced by Coca Cola, McDonalds and Wal-Mart stores, as examples, than to the risks faced by BST's parent company, BellSouth (which owns LEC's and the underlying network elements). It is clear on its face,

however, that the risk of the network element leasing business has virtually nothing in common with the risks of a McDonalds or Wal-Mart.

I am further convinced of the inaccuracy of Dr. Billingsley's results by my experience as a witness in several of Ameritech's state network element arbitrations, in which Ameritech's own cost of capital expert used a set comparable companies which was almost exactly the same as the set of telephone holding companies that I have used. I note also that major brokerage firms and investment banks which issue analyst reports for BellSouth and other telephone holding companies see no need to resort to statistical cluster analysis when choosing proxy companies for valuing these companies. They view other telephone holding companies to be the best proxies for the subject telephone holding company being valued. This is true even though the telephone holding companies do not participate in exactly the same businesses or to the same proportionate degree. Ameritech, for example, is one of the largest providers of home security alarm services in the nation. BellSouth, in contrast, has no involvement in this business whatsoever.

Q. DR. BILLINGSLEY CLAIMS THAT HIS STATISTICAL MODEL GIVES "OBJECTIVE" RESULTS, IMPLYING THAT YOUR CHOICE OF COMPARABLES ARE INHERENTLY SUBJECTIVE. IS THIS CORRECT?

A. No. Dr. Billingsley has glossed over the fact that the formulation of his model and the data he chooses to analyze are subjective. The factors he has chosen to consider in the model are based on his subjective judgment, and there is no basis

to conclude the formulation of his model is necessarily correct or the best one for the purposes it was intended. The results of his model— which fly in the face of common sense— dramatically highlight this issue. Moreover, it is not clear how many different model formulations Dr. Billingsley considered before selecting the model used in his testimony. When all these issues are taken into consideration, I do not believe that Dr. Billingsley has offered a plausible reason for abandoning the basic notion that telephone holding companies are the best available comparables to use as a starting point for estimating the cost of capital for the network element leasing business.

Q. FROM YOUR KNOWLEDGE AND EXPERIENCE, DO INVESTORS USE CLUSTER ANALYSIS TO DETERMINE COMPARABLE COMPANIES FOR COST OF CAPITAL ESTIMATION PURPOSES?

A. No. And as previously stated, the sophisticated investments banks do not either.

Q. DR. BILLINGSLEY HAS SUGGESTED THAT THE PERPETUAL GROWTH ASSUMPTION IN THE DCF MODEL MOST ACCURATELY REFLECT THE EXPECTATIONS OF INVESTORS, AND THAT THE THREE-STAGE DCF MODEL REFLECTS SOLELY YOUR SUBJECTIVE ASSUMPTIONS. IS THIS TRUE?

A. No. Quite to the contrary. Dr. Billingsley's approach systematically guarantees an inaccurately high cost of equity estimate inconsistent with investor expectations. Prominent economists familiar with current cost of capital research have recognized that the simple perpetual growth DCF model using short-run forecasts is inappropriate to use if a company's short-run growth rate is expected

to exceed the long-run growth rate of the economy, or the cost of equity will be overestimated.

As noted in my direct testimony, Stewart Myers and Lynda Borucki state that:

> "[f]orecasted growth rates are obviously not constant forever. Variable-growth DCF models, which distinguish short- and long-term growth rates, should give more accurate estimates of the cost of equity. Use of such models guards against naïve projection of short-run earnings changes into the indefinite future."[2]

In addition, Ibbotson Associates state that:

> "[t]he reason it is difficult to estimate the perpetual growth rate of dividends, earnings, or cash flows is that these quantities do not in fact grow at stable rates forever. Typically it is easier to forecast a company-specific or project-specific growth rate over the short run than over the long run. To produce a better estimate of the equity cost of capital, one can use a two stage DCF model. ... For the resulting cost of capital estimate to be useful, the growth rate over the latter period should be sustainable indefinitely. An example of an indefinitely sustainable growth rate is the expected long-run growth rate of the economy."[3]

Sharpe[4], Alexander and Bailey state that:

> "Over the last 30 years, dividend discount models (DDMs) have achieved broad acceptance among professional common stock investors…
>
> Valuing common stock with a DDM technically requires an estimate of future dividends over an infinite time horizon. Given that accurately forecasting dividends three years from today, let alone 20 years in the future, is a difficult proposition, how do investment firms actually go about implementing DDMs?
>
> One approach is to use constant or two-stage dividend growth, models, as described in the text. However, although such models are relatively easy to apply, institutional investors typically view the assumed dividend growth assumptions as overly simplistic. Instead, these investors generally prefer three-stage models, believing that they provide the best combination of realism and ease of application.
>
> …[M]ost three-stage DDMs make standard assumptions that all companies in the maturity stage

have the same growth rates, payout ratios and return on equity."[5]

Damodaran states that:

"While the Gordon growth model is a simple and powerful approach to valuing equity, its use is limited to firms that are growing at a *stable growth rate*...

The second issue relates to what growth rate is reasonable as a *stable growth rate*. Again, the assumption in the model that this growth rate will last forever establishes rigorous constraints on *reasonableness*. A firm cannot in the long term grow at a rate significantly greater than the growth rate in the economy in which it operates. Thus, a firm that grows at 12% forever in an economy growing at 6% will eventually become larger than the economy. In practical terms, the stable growth rate cannot be larger than the nominal (real) growth rate in the economy in which the firm operates, if the valuation is done in nominal (real) terms...

...If a firm is likely to maintain a few years of above-stable growth rates, an approximate value for the firm can be obtained by adding a premium to the stable

> growth rate, to reflect the above-average growth in the initial years. Even in this case, the flexibility that the analyst has is limited. The sensitivity of the model to growth implies that the stable growth rate cannot be more than 1% or 2% above the growth rate in the economy. If the deviation becomes larger, the analyst will be better served by using a two-stage or a three-stage model to capture the supernormal or above-average growth and restricting the use of the Gordon growth model to when the firm becomes truly stable."[6]

Copeland, Koller and Murrin echo these observations, stating that "[f]ew companies can be expected to grow faster than the economy for long periods of time."[7]

In contrast, the only support that Dr. Billingsley cites for the naïve application of the perpetual growth DCF model using short-run growth forecasts is the fact that this method has often been used in traditional rate regulation hearings, when the telephone business was highly regulated and stable.

Q. DO YOU BELIEVE THAT THIS COMMISSION SHOULD NECESSARILY USE THE PERPETUAL GROWTH DCF MODEL IF IT HAS BEEN USED IN THE PAST?

A. No. As highlighted by the excerpts above from academics and practitioners, one must understand when the perpetual growth DCF model is— and is not— suitable. In the case of a regulated utility in the traditional regulation setting, growth has traditionally been limited and has not exceeded the growth rate of the economy. If the growth rate does not exceed the economy-wide growth rate, and the growth rate is expected to be very stable, the use of the perpetual growth model is reasonable. In this case, however, I use a set of comparables comprised of holding companies which are engaged in numerous businesses that are, in the short-run, expected to grow at rates much greater than the aggregate economy. The wireless business, as an example, has forecasted growth rates exceeding 30% (see exhibit BC-1). It is absolutely clear that this business will not grow at such a high rate indefinitely.

Q. DR. BILLINGSLEY'S REBUTTAL TESTIMONY IN KENTUCKY[8] IMPLIED THAT DR. DAMODARAN SAYS IN HIS BOOK THAT THE BEST USE FOR THE THREE-STAGE DCF MODEL IS FOR COMPANIES WITH GROWTH RATES IN EXCESS OF 25 PERCENT. WHAT ARE YOUR COMMENTS?

A. It is evident from Dr. Billingsley's statement that he has not read Dr. Damodaran's book very carefully. Dr. Damodaran describes in his book numerous DCF models with varying formulations and characteristics. Dr. Damodaran attempts to distinguish the circumstances under which each type of model might be most appropriate. It is obvious that the three-stage model described by Dr. Damodaran is a complex model which is not the model I employ. Dr. Damodaran's three-stage model requires year-specific payout ratios, growth rates and betas. In contrast, the

"H Model" described by Dr. Damodaran appears to be most analogous to the model I have used.

Dr. Damodaran states that:

> "The H model is a two-stage model for growth, but unlike the classical two-stage model, the growth rate in the initial growth phase is not constant but declines linearly over time to reach the stable-growth rate in steady stage."[9]

Dr. Damodaran indicates that the best use for this model is for firms that are growing rapidly at the present, but for which the growth is expected to decline gradually over time as their differential advantage over their competitors declines.

Q. DOES DR. DAMODARAN SUGGEST ANY GROWTH RATE LIMITATIONS FOR THE USE OF THE "H MODEL"?

A. No. It appears from Dr. Damodaran's extensive analysis that the "H Model" is intended for companies which will grow at rates lower than those for which his formulation of a 3-stage model would be appropriate.

Q. DOES DR. DAMODARAN ALSO DESCRIBE THE CLASSICAL TWO-STAGE MODEL IN HIS BOOK?

A. Yes.

Q. WHAT DOES DR. DAMODARAN SAY ABOUT COMPANIES WHICH MIGHT BE APPROPRIATE FOR THE CLASSICAL TWO-STAGE DCF MODEL?

A. Damodaran suggests that one type of company for which this would be a suitable model is a company:

> "...in an industry that is enjoying supernormal growth because significant barriers to entry (either legal or as a consequence of infrastructure requirements) can be expected to keep out new entrants for several years.
>
> The assumption that the growth rate drops precipitously from its level in the initial phase to a stable rate also implies that this model is more appropriate for firms with modest growth rates in the initial phase. It is more reasonable, for instance, to assume that a firm growing at 12% in the high-growth period will see its growth rate drop to 6% after that than it is for a firm growing at 40% in the high-growth period."[10]

Q. IF YOU ASSUMED THAT THIS WAS THE MOST APPROPRIATE MODEL TO USE, WHAT IMPACT WOULD IT HAVE HAD ON YOUR DCF COST OF EQUITY ESTIMATE?

A. If I had instead utilized this model-- which certainly appears applicable in this case based on Dr. Damodaran's analysis-- it would have resulted in a lower cost of equity than what I actually calculated. This again provides evidence that my cost of capital estimate is conservatively high.

Q. DR. BILLINGSLEY HAS CLAIMED THAT IT IS SUBJECTIVE OF YOU TO ASSUME THAT THE 5-YEAR I/B/E/S GROWTH RATES FOR YOUR GROUP OF COMPARABLE COMPANIES WILL NOT PERSIST INDEFINITELY IN THE FUTURE. HE IMPLIES THAT INVESTORS WOULD ASSUME PERPETUAL GROWTH AT THESE RATES. HOW DO YOU RESPOND TO THIS ASSERTION?

A. I believe that it is quite the opposite. Dr. Billingsley argues that investors take 5-year forecasts, which in the case of the telephone holding companies include subsidiaries with growth rates exceeding 30%, and assume uncritically that such growth rates will last forever. However, there is no reason to believe that investors are so unsophisticated. Investors recognize that five-year forecasts mean that they are intended for five years. They appreciate the fact that even five-year forecasts become less accurate in the later years of the forecast period, and they understand that high growth businesses by necessity will slow down as their markets saturate. The comments by academics and practitioners cited previously support this view. Dr. Billingsley has himself stated in his testimony that U.S. financial markets are "highly efficient" (Billingsley Georgia Rebuttal Testimony[11], p. 41), which also supports my belief that investors are sophisticated in evaluating information available in the marketplace.

Q. IS DR. BILLINGSLEY'S PERPETUAL GROWTH ASSUMPTION BASED ON FIVE-YEAR ANALYST FORECASTS SUBJECTIVE?

A. Absolutely, and as I have shown above, it is in this instance an incorrect assumption which would not be made by investors.

Q. DOES DR. BILLINGSLEY'S ARGUMENT THAT SOME COMPANIES, SUCH AS MCI, HAVE GROWN AT HIGH RATES FOR LONGER THAN FIVE YEARS INVALIDATE YOUR APPROACH AND MAKE THE PERPETUAL GROWTH MODEL MORE SUITABLE?

A. Not at all. In the real world, individual companies participating in a particular line of business will have differing growth rates which will occur over different time periods. Clearly, a few companies will do extraordinarily well, and may grow at high rates for many years. In fact, I assume above average growth for most telephone companies over the next twenty years. Other companies will perform very poorly, and may experience low or negative growth (or go out of business entirely). The greatest proportion of industry participants will experience growth somewhere between the highest-growth stars and the weak underperformers. Investors today cannot definitively predict which companies in an industry will be the winners and which will be the losers. On average, no reasonable analyst would expect high-growth in excess of the economy's growth for all of the industrys' companies forever.

What is interesting about Dr. Billingsley's example is that he points out that MCI's current 5-year growth forecasts are in the 12% range, even though he states that average earnings growth over the past 10 years has been 28% according to

Value Line (Billingsley Georgia Rebuttal Testimony[12], p. 50). Dr. Billingsley also does not mention that the same Value Line report indicates that MCI's growth rate over the past 5 years was only 5%. Clearly then, a tapering off of the high growth rate is occurring, consistent with the use of multiple stage DCF models and inconsistent with the perpetual DCF model. The use of a perpetual growth DCF model when MCI was growing at rates exceeding 28% would have dramatically overestimated MCI's true cost of equity at that time. Given that MCI's forecast growth rate of around 12% is significantly in excess of the growth rate of the economy, the same error arises by using a perpetual growth rate DCF model today.

Q. DR. BILLINGSLEY'S APPEARS TO ARGUE THAT INVESTORS SUBSUME ALL OF THE INFORMATION REGARDING THE DIFFERENTIAL GROWTH RATES OF SUBSIDIARY COMPANIES INTO THE PERPETUAL GROWTH MODEL. DOES THAT MAKE SENSE?

A. No. It is clear that it would be an extraordinarily difficult analysis to arrive at a single, perpetual growth rate estimate that accurately reflects the average growth of various businesses, some of which are relatively low-growth, such as the local exchange business, and other businesses which will grow astronomically for some period and then taper off to lower growth rates. Furthermore, there would not be the overwhelming support for multiple-stage DCF models as cited above if Dr. Billingsley's assertion were true.

Q. DR. BILLINGSLEY ALSO ARGUES THAT THE PERPETUAL GROWTH ASSUMPTION IS SOMEHOW INCONSEQUENTIAL BECAUSE LATER CASH FLOWS HAVE LITTLE IMPACT ON PRESENT VALUE. IS THIS CORRECT?

A. This is plainly wrong, as evidenced by the enormous difference between Dr. Billingsley's and my cost of equity estimates using the DCF model. Dr. Billingsley's argument overlooks the tremendous impact of compounding over time. By assuming perpetual dividend growth compounding at unrealistically high rates, but at the same time holding the price of the subject company's stock constant in the DCF model, the discount rate— or cost of equity— must get much higher by mathematical necessity in order to equate the enormous assumed dividends over time to the current price. In contrast, a more logical alternative assumption would be that— if the market genuinely believed that high growth would be realized forever— the price of the subject company would rise.

Q. DR. BILLINGSLEY DISCUSSES THE RISKS OF THE TELECOMMUNICATIONS BUSINESS. IS THE TELECOMMUNICATIONS BUSINESS THE SUBJECT OF THIS PROCEEDING?

A. No. The telecommunications business is a very broad category which includes such businesses as BellSouth's wireless communications endeavors. It therefore appears that Dr. Billingsley has incorrectly blurred the risks of various other risky businesses with that of the low-risk network element leasing business in his analysis.

Q. ARE THE RISKS OF COMPETITION, TECHNOLOGICAL AND REGULATORY CHANGE DISCUSSED BY DR. BILLINGSLEY, SOMETHING THAT THE FINANCIAL MARKETS ACCOUNT FOR IN VALUING THE COMMON STOCKS OF COMPANIES?

A. Yes. The financial markets have been continuously absorbing and incorporating information about competition, technological and regulatory change. This is evident from financial analyst reports and the public disclosures of the telephone holding companies themselves over the past several years. As Dr. Billingsley has stated, the U.S. financial markets are highly efficient. If investors are aware of new risks which impact a company's value, they incorporate it into the cost of equity immediately. Consequently, Dr. Billingsley's arguments that BST is facing dramatic new risks resulting from the passage of the 1996 Act for which a greater cost of capital is required rings hollow. One would have to assume— contrary to his own statement— that the investing public is totally naive and would not account for the risks of deregulation prior to the passage of the 1996 Act itself.

Q. ASSUMING THAT MORE COMPETITION ARISES AT THE RETAIL TELEPHONE BUSINESS LEVEL, IS THERE EVIDENCE THAT INCREASED RETAIL COMPETITION WOULD MAKE THE WHOLESALE BUSINESS OF LEASING UNBUNDLED NETWORK ELEMENTS LESS RISKY?

A. Yes. Bell Atlantic is a large regional Bell holding company comparable to BellSouth. Bell Atlantic has indicated in a Strategic Overview published on its Internet web site (attached as Appendix 1 to my direct testimony) that the

business of leasing network elements, in and of itself, represents an opportunity for the company, since retail competition will increase utilization of its network at the wholesale level without the need to make any additional investment.

Q. IS THE PROSPECT OF INCREASED COMPETITION IN THE RETAIL PHONE SERVICE RELEVANT FOR PURPOSES OF DETERMINING THE COST OF CAPITAL IN THIS PROCEEDING?

A. No. The FCC in its August 8 Order explicitly defined the relevant risk as the risk incurred in the business of leasing unbundled network elements at wholesale [August 8 Order at ¶702]. (That the FCC has indicated that "the risk adjusted cost of capital need not be uniform for all elements," further indicates that the relevant risks are those inherent in the business of leasing elements itself, not the risks entailed with retail phone service. [Id. at ¶702.])

Q. DR. BILLINGSLEY BELIEVES THAT YOUR MENTION OF THE RISK OF PHYSICAL BYPASS, PARTICULARLY FOR BUSINESS CUSTOMERS, IS INCONSISTENT WITH YOUR DISCUSSION OF CAPITAL MARKET THEORY, WHICH SHOWS THAT COMPETITIVE RISKS CAN BE DIVERSIFIED AWAY AND WOULD NOT BE COMPENSATED BY THE MARKET WITH A RISK PREMIUM. WOULD YOU PLEASE EXPLAIN THE IMPLICATIONS OF CAPITAL MARKET THEORY WITH RESPECT TO YOUR TESTIMONY REGARDING RISK?

A. I discuss many potential risks of the network element leasing business in my testimony so that the Commission can get an accurate picture of the risks this

business faces, particularly in relation to other businesses engaged in by telephone holding companies. Some of these risks could be viewed as systematic, meaning that they could not be diversified away, and others nonsystematic, such as the risk of competition. According to capital market theory, an investor will not require extra compensation in the form of a higher cost of equity for risks that he or she can diversify away simply by acquiring a portfolio of companies in that business. Dr. Billingsley's inference is that because I describe both types of risks, I am assuming that BST must be compensated for both in its cost of equity. I do not make that statement. Instead, my goal is to elucidate capital market theory regarding diversifiable risks. Ironically, Dr. Billingsley is criticizing me for fully discussing the issues of risk in my testimony (which he has not done), both from the point of view of those who consider competitive risks to be significant and from the viewpoint of capital market theory.

The question for this Commission to decide is whether it accepts the premise of capital market theory with regard to competitive risks. If it does not, then the risk of physical bypass should be considered. If it is considered, the current reality is that there are only small in-roads in facility bypass and the likelihood of it developing significantly over the near term is low. The August 8 Order describes the current competitive position of the incumbent LEC's network element business as being natural or bottleneck monopolies which do not now face significant competition (August 8 Order at ¶'s 11, 702). BST's own trade association agrees with this view. In a brochure which the United States Telephone Association distributes to public consumers, it states:

> "Be a smart consumer and arm yourself with information, especially about what long-distance companies don't want you to know— such as the fact that they don't own, invest in or repair the local networks they'll use to carry your local calls. Those networks have been built and are maintained by your local telephone companies."[13] [emphasis added]

On the other hand, if the Commission concludes that capital market theory is correct, then competitive risks simply are not relevant.

While I see room for debate on this subject, my sense is that capital market theory is correct on this issue. The following hypothetical helps to analyze this question. Assume first that there are only two companies in the network element leasing business, BellSouth and GTE. In addition, assume that GTE becomes a much better competitor, that this is known to the market, and that GTE wins significant business away from BellSouth.[14] Under such circumstances, BellSouth's market has become more competitive and its market share will drop. In valuing the two companies, investors will forecast future cash flows for each company. BellSouth's forecasted cash flows will be reduced, while GTE's will be increased. BellSouth's stock price will fall and GTE's will rise. If competitive risk also affects cost of equity, investors will additionally increase BellSouth's cost of equity, which will cause its stock price to fall further. GTE's market in turn has become relatively less competitive, so investors will reduce GTE's cost of capital and the price will go up even further. Looked at in this light, it is questionable

that investors would require the second reduction in BellSouth's price by additionally increasing its cost of equity, particularly since the operating risks of the two companies are the same.

Finally assume that an investor buys both GTE and BellSouth. This investor now owns 100% of the profits from the network element leasing business, and bears no risk of competition whatsoever, even though BellSouth and GTE continue to compete with one another. If competition affects the cost of equity, this creates a puzzle for the investor who has just bought all of the competitors. Before he acquired both companies, he assigned a higher cost of equity to BellSouth. What cost of equity does he use after the acquisition to value his interest in BellSouth? BellSouth's competitive risks have not changed at all, but the investor does not bear any of that risk. His industry-wide profits remain constant regardless of which individual company wins the competitive war. Similarly, the investor receives no added benefit from the fact that GTE is the better competitor, even though he paid an added premium for this company by reducing the cost of equity. The most plausible answer to this puzzle is that competitive risk does not change the cost of equity to begin with, precisely because an investor does not consider unsystematic risks which can be diversified away easily. This is why capital market theory states that when determining the cost of equity, investors are concerned with the fundamental operating risks of a business, not the idiosyncracies affecting the individual competitors.

Q. DOES THE FACT THAT THE NETWORK ELEMENT BUSINESS LEASING BUSINESS FACES SOME RISKS TURN IT INTO A HIGH-RISK BUSINESS AS DR. BILLINGSLEY SUGGESTS?

R. No. All businesses face some risks, including low-risk businesses. As discussed above, both the FCC and Bell Atlantic view it as a low-risk business in their public pronouncements.

Q. IS DR. BILLINGSLEY INCONSISTENT IN HIS USE OF THE CAPITAL ASSET PRICING MODEL?

A. Yes. On the one hand, Dr. Billingsley uses the capital asset pricing model in his analysis. Yet on the other, he attacks its "pristine theory" (Billingsley Georgia Rebuttal Testimony[15], pg. 60) as being impractical because it inconveniently negates his argument that competitive risks are highly significant to BST.[16] However, the foundation of the model is that diversifiable risks do not increase the cost of capital. As Ibbotson Associates states:

> "...unsystematic risk is that portion of total risk that can be avoided by diversifying; the CAPM concludes that unsystematic risk is not rewarded with a risk premium. For example, the possibility that a firm will lose market share to a competitor is a source of unsystematic risk for the stock of a particular company."[17] [emphasis added]

Q. DR. BILLINGSLEY ASSERTS THAT THE FCC CONSIDERS COMPETITIVE RISKS IMPORTANT TO THE COST OF CAPITAL. HAS THE FCC SPECIFICALLY ADDRESSED THE CAPITAL MARKET THEORY QUESTION?

A. Not to my knowledge. Looking at Dr. Billingsley's specific citation to the FCC's Third Report and Order (FCC-96-488), which is not directed to the issue of unbundled network elements, the FCC stated that "potential competition could increase the risk facing the incumbent LECs, and thus increase their cost of capital, thus mitigating, to some extent, the factors suggesting that incumbent LECs cost of capital has decreased since 1990. [emphasis added] (Billingsley Georgia Rebuttal Testimony[18], p. 13) It does not appear that the FCC has definitively concluded that these risks will increase the LECs' cost of capital, but that they are leaving them open for consideration.

Q. DOES THIS FCC STATEMENT ALSO INDICATE THAT, EVEN IF COMPETITIVE RISKS DO INCREASE LEC COST OF CAPITAL, THAT ON NET THE COST OF CAPITAL HAS DECLINED SINCE THE TIME THAT THE FCC DETERMINED THE 11.25% ACCESS CHARGE RATE?

A. Yes. While I believe that the FCC is leaving the final decision to state Commissions, it is clearly its position that, if all of the factors are considered including competitive risks, the net cost of capital has declined from the time the 11.25% was adopted. One clear indication of this is the significant decline in interest rates since the FCC's Rate Represcription Order adopted in September of 1990. In its August 8 Order, the FCC stated that "earlier this year, we instituted a preliminary inquiry as to whether the currently authorized federal 11.25 percent

rate of return is too high given the current marketplace cost of equity and debt." (August 8 Order at ¶702)

Q. DR. BILLINGSLEY STATES THAT YOU HAVE INCORRECTLY ESTIMATED THE COST OF DEBT BECAUSE YOU USE ONLY SHORTER TERM DEBT. IS THIS CORRECT?

A. Not at all. Remember that my starting point is the forward-looking cost of debt for all securities of BellSouth listed in Standard & Poor's Bond Guide BellSouth, like most holding companies, has outstanding securities with a variety of maturities. Therefore, considering only long-term securities produces a misleading estimate of the cost of debt. Contrary to Dr. Billingsley's statement, the Bond Guide includes all of BellSouth's long-term debt, but may in fact exclude some of BellSouth's shortest term securities. Thus my calculations may slightly overstate the holding company's cost of debt.

Q. IS DR. BILLINGSLEY CORRECT THAT NETWORK ELEMENTS WOULD ONLY BE FINANCED WITH LONG-TERM DEBT?

A. No. The network elements have varied expected economic lives, not all of which are necessarily long-term. In addition, the network element leasing business, like any other business, would be financed using a variety of sources and maturities. Dr. Billingsley would be hard-pressed to name any companies which are financed with 100% long-term debt.

Q. DR. BILLINGSLEY BELIEVES THAT YOUR DISCUSSION REGARDING THE QUARTERLY DCF MODEL IN YOUR VALUATION BOOK SHOWS THAT YOU ARE BEING INCONSISTENT IN YOUR ARGUMENTS IN THIS CASE WHERE YOU INSTEAD USE THE ANNUAL DCF MODEL. IS THIS TRUE?

A. No. Dr. Billingsley misunderstands my reasoning on this point. When calculating the cost of equity applicable to an investor, the investor assumes that he or she will get quarterly dividends. As investors normally receive dividends quarterly, they will reinvest them and get the benefit of quarterly compounding. In other words, investors earn their cost of equity as calculated by the quarterly DCF model by reinvesting their cash flows quarterly. The purpose of this proceeding, however, is to determine the cost of capital which the telephone operating companies should be allowed. In contrast to investors, telephone operating companies are able to reinvest their cash flows on an approximate monthly basis. Consequently, if the Commission allows a rate which is estimated using an annual DCF model, then BST gets an effective rate higher than the allowed rate because of monthly compounding. This effective rate will in fact exceed the rate calculated using a quarterly DCF basis. Thus, it would be entirely inappropriate to calculate the DCF cost of equity on a quarterly compounding basis for purposes of this proceeding, because this would give BST the benefit of both quarterly and monthly compounding. If the Commission were to decide that it preferred the quarterly DCF model, then a decompounding adjustment would have to be made to remove the benefit of monthly compounding.

Q. DR. BILLINGSLEY BELIEVES THAT YOU HAVE MADE INCONSISTENT ARGUMENTS REGARDING DIVERSIFICATION IN RELATION TO TELEPHONE HOLDING COMPANIES. IS THAT THE CASE?

A. No. In the case of telephone holding companies, engaging in businesses which are systematically riskier than the network element leasing business will always make the risk of the telephone holding company greater than of the network leasing business. Overall risk can never fall because of the acquisition of systematically riskier businesses. This can be illustrated with a simple example. If you hold a one-asset portfolio comprised of a productive local oil well with enormous proven reserves, you will not make that oil well less risky by undertaking wildcat oil drilling in Iraq. Your overall holdings become more risky by making a fundamentally riskier investment. In the context of the telephone holding companies, the FCC and the major rating agencies have recognized that investments in businesses outside of local exchange have made them riskier.

Q. DR. BILLINGSLEY'S RISK PREMIUM ANALYSIS DIFFERS FROM YOURS, AND LEADS TO A SIGNIFICANTLY HIGHER COST OF EQUITY ESTIMATE. HOW DO YOU VIEW HIS APPROACH?

A. The equity risk premium is a subject of great research and debate in finance, and no definitive consensus been reached. In my analysis, I attempted to consider all of the prevailing research by leading academics which I thoroughly discuss in my direct testimony. It is clear that Dr. Billingsley has not addressed recent research, particularly that of Blanchard, Siegel and Ross et al. which indicates that the forward-looking market premium over U.S. Treasury bonds is in the 2 to 5%

range, far lower than what Dr. Billingsley estimates. As I mentioned in my direct testimony, a nonacademic source which also appears to subscribe to this view is a correspondent for Fortune magazine, who indicated that "[t]o venture into the volatile stock market instead of cozying up to bonds, investors rightfully expect a superior return from stocks. In fact, they expect to beat the bond return by four full percentage points— something called the risk premium on stocks..."[19] Similarly, *The Economist* stated in its October 25, 1997 issue that "recent studies [regarding risk premium] suggest a current figure of one to four percentage points."[20] In its 1990 Rate Represcription Order, the FCC agreed with the position of the Consumer Coalition that the risk premiums used by the LEC's experts were unrealistically high, particularly when compared to those used by financial analysts. They cite the Consumer Coalition expert's testimony that "...the Wall Street analyst reports, relied upon by the RHCs to support their positions on other issues, use much smaller risk premiums, ranging from 2.0% to 5.4%."[21]

Q. HOW DOES DR. BILLINGSLEY ARRIVE AT SUCH A HIGH RISK PREMIUM?

A. Dr. Billingsley arrives at a large risk premium by making the same mistake with the market that he made for individual companies. That is, he assumes growth for an infinite period at a rate exceeding the growth rate of the aggregate economy. Had he properly taken account of the fact that growth must eventually slow, as I do in my direct testimony, he would have arrived at a market risk premium more consistent with that which I recommend.

Q. AFTER CONSIDERING DR. BILLINGSLEY'S ANALYSIS AND ARGUMENTS, ARE YOU PERSUADED THAT YOUR COST OF CAPITAL ESTIMATE IS TOO LOW?

A. No. None of Dr. Billingsley's arguments are persuasive and— contrary to his assertions— they are fundamentally inconsistent with investor expectations. In particular, Dr. Billingsley did not attempt to address the real-world, investor-oriented evidence described in my direct testimony which provides independent assurance that my estimate is in the correct range. For example, in the Bell Atlantic/NYNEX merger proxy statement dated September 9, 1996, Merrill Lynch as part of its fairness opinion performed a DCF analysis of the companies using an 8 to 10% discount rate for their telephone company operations. It is notable that this was disclosed in a securities filing seeking investor approval of a multi-billion dollar merger which subjected both Merrill Lynch and the officers of both companies to federal and state securities laws with onerous disclosure requirements. I also note in my direct testimony that a Salomon Brothers analyst report dated January 1996 estimated the cost of capital for the regional Bell holding companies to be 8.6%. Consequently, I see no evidence whatsoever that a hypothetical cost of capital posited to be hundreds of basis points higher by Dr. Billingsley is anything close to BST's true cost of capital.

Q. DOES THAT CONCLUDE YOUR PRESENT TESTIMONY?

A. Yes, it does.

1 Endnotes:

[1] Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Dkt. No. 96-98, First Report & Order, FCC 96-325 (rel. August 8, 1996)

[2] Stewart C. Myers and Lynda S. Borucki, "Discounted Cash Flow Estimates of the Cost of Equity Capital—A Case Study", *Financial Markets, Institutions & Instruments*, vol. 3, no. 3, New York University Salomon Center, 1994.

[3] Ibbotson Associates, *Stock, Bonds, Bills and Inflation, 1996 Yearbook*, Chicago, pp. 158-159

[4] As noted by Dr. Billingsley, Dr. Sharpe is a Nobel-prize winning financial economist.

[5] Sharpe, William F., Gordon J. Alexander and Jeffery V. Bailey, *Investments*, Fifth Edition, Prentice Hall, Englewood Cliffs, New Jersey, 1995, pp. 590-591

[6] Damodaran, Aswath, *Damodaran on Valuation Security Analysis for Investment and Corporate Finance*, John Wiley & Sons, New York, 1994, pp. 99-101

[7] Copeland, Tom, Tim Koller, and Jack Murrin, *Valuation Measuring and Managing the Value of Companies*, John Wiley & Sons, New York, 1994, p. 295

[8] Before the Kentucky Public Service Commission, Administrative Case No. 360, Rebuttal Testimony of Dr. Randall S. Billingsley, November 4, 1997, p. 36, at 6-12.

[9] Damodaran, *Id.*, p. 115.

[10] Damodaran, *Id.*, pp. 108-109.

[11] In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 41, at 16.

[12] In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 50, at 17-20.

[13] "*Call Them On It! 4 Questions the Long-Distance Companies Don't Want You To Ask*", United States Telephone Association.

[14] The conclusions of this hypothetical would continue to hold if one alternatively assumed that BellSouth and GTE were equally efficient and competitive, and that the market became much more competitive due to the entry of several new competitors.

[15] In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 60, at 13.

[16] Dr. Billingsley fails to mention that Professor Sharpe won the Nobel prize for his work in developing this "pristine theory".

[17] Ibbotson Associates, *Stock, Bonds, Bills and Inflation, 1996 Yearbook*, Chicago, pg. 148.

[18] In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 13, at 15-21.

[19] Kuhn, Susan E. "Personal Fortune: Why Bonds May Beat Stocks", *Fortune*, October 28, 1996.

[20] "Will Investors Run for Cover? When the Rain Comes", *The Economist*, vol. 345, October 25, 1997.

[21] In the Matter of Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers. FCC 90-315, Adopted September 19, 1990; Released December 7, 1990. ¶'s 136 & 139, p. 7523

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