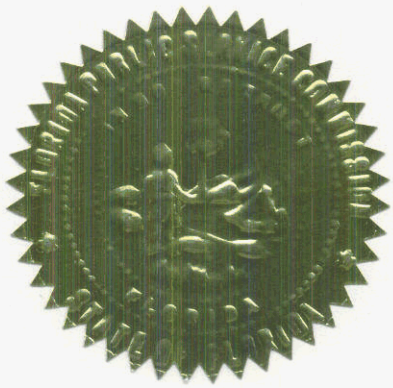
BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of	
Petitions by AT&T Communications of the Southern States, Inc., MCI Telecommunications Corporation and MCI Metro Access Transmission Services, Inc., for arbitration of certain terms and conditions of a proposed agreement with GTE Florida Incorporated concerning interconnection and resale under the Telecommunications Act of 1966.	**DOCKET NO. 960847-TP** **DOCKET NO. 960890-TP**



SECOND DAY - MORNING SESSION

VOLUME 6

Pages 628 through 782

PROCEEDINGS: **HEARING**

BEFORE: CHAIRMAN SUSAN F. CLARK
COMMISSIONER J. TERRY DEASON
COMMISSIONER JULIA L. JOHNSON
COMMISSIONER DIANE K. KIESLING
COMMISSIONER JOE GARCIA

DATE: **Tuesday, October 15, 1996**

TIME: Commenced at 9:05 a.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: JOY KELLY, CSR, RPR
Chief, Bureau of Reporting

APPEARANCES:
(As heretofore noted.)

WITNESSES - VOLUME 6

EXHIBITS - VOLUME 6

P R O C E E D I N G S

(Hearing reconvened at 9:05 a.m.)

(Transcript follows in sequence from Volume 5.)

COMMISSIONER DEASON: Call the hearing to order. Commissioner Garcia on his way and will be here momentarily.

Mr. Gillman, do you have further questions for Mr. Lerma?

MR. GILLMAN: We also have a preliminary matter, and it deals with the stipulation of some testimony.

The parties have agreed to stipulate into the record all testimony of Dr. Kaserman, Dr. Sibley, and Dr. Goodfriend. All proposed exhibits proposed by the Staff would go into evidence as well.

COMMISSIONER DEASON: That's great. What we should do is conclude with Mr. Lerma, and at the appropriate time we'll go through the necessary steps to get that testimony inserted into the record and all of the exhibits identified, and all of the Staff exhibits as well identified and inserted into the record.

MR. GILLMAN: Okay. One other, just a scheduling change. We've talked with the parties and

no one disagrees. With respect to GTE's schedule of witnesses, we're proposing to take Trimble and Steele, who will testify as a panel, after Dr. Duncan tomorrow. So we would go directly from McLeod to Mr. Wellemeyer.

COMMISSIONER DEASON: And the panel of Trimble and Steele will follow Duncan.

MR. GILLMAN: Yes. Who will follow Wood.

COMMISSIONER DEASON: And Witness Duncan will follow Witness Wood.

MR. GILLMAN: Yes.

MS. CANZANO: Duncan after Wood?

MR. GILLMAN: Yes. Wood, Duncan, Price, Trimble-Steele.

COMMISSIONER DEASON: Any other preliminary matters?

MR. TYE: Commissioner Deason, as a matter of information, Mr. Melson and I are continuing to look at a number of the other GTE witnesses. Maybe later today we'll be able to offer up the same kind of deal we made with the economist and we can get some of this testimony stipulated in. We're looking at it right now.

COMMISSIONER DEASON: Very good.

MR. GILLMAN: With that I'm ready to

proceed.

COMMISSIONER DEASON: Mr. Lerma is on the stand. You may proceed with your cross examination.

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ART LERMA

resumed the stand as a witness on behalf of AT&T of the Southern States and, having been previously duly sworn, testified as follows:

CROSS EXAMINATION

BY MR. GILLMAN:

Q Mr. Lerma, I'd like to refer you to ALR -- what you have identified as ALR-2, Page 3 of 4.

A Yes.

Q Now, that is a state-specific study?

A No. What that is is the methodology that AT&T included in its study to calculate avoided access costs.

Q Was the data you used from Bell Atlantic in the state of Pennsylvania?

A The data I used is methodology that was obtained publicly in a Bell Atlantic Pennsylvania case, and that methodology is applied to GTE's access expenses off the ARMIS Reports.

Q So these actual numbers were not used in any way, shape or form in your opinion?

A The numbers that appear on this page, the percentages were used and applied to the total operating expenses for GTE, but these specific numbers on this page were not.

Q And the percentages were developed as a result of the Bell Atlantic Pennsylvania data?

A That's correct.

Q And going down to the second square there, .26%, access as a percent of total expenses?

A Yes.

Q Am I correct in reading this exhibit, you're saying that the total -- the amount of expenses that relate to carrier access is only .26% of the total expenses for Bell Atlantic?

A No, that's not correct. What that represents is a .26% of the total expenses for Bell Atlantic represent access expenses of a retail nature that would be avoided, and that would be things such as avoided access sales expense, service expenses, but only in the provision of access itself.

Q So the only amount that's being not avoided in your study is .26%?

A Yes, that's correct.

Q Isn't it true in the state of Florida that GTE Florida's access revenues is about a third of its

total revenues?

A I'm not certain of that. I don't have that information.

Q Does that sound about right to you?

A I really couldn't tell you.

Q Okay. One other question. The SNFA category?

A Yes.

Q Now, that category doesn't even exist on GTE's Florida ARMIS Report, does it?

A No, but, however, for that reason what our study does, it incorporates a calculation of avoided costs that includes a consideration for shared network facilities arrangements. And because we don't have any of those with GTE, we've actually overestimated, and actually that's to the benefit of GTE from the perspective of this adjustment.

MR. GILLMAN: I have nothing further. Thank you.

COMMISSIONER DEASON: We need to move exhibits.

MS. DUNSON: Exhibit 14.

COMMISSIONER DEASON: Without objection Exhibit 14 is admitted. Thank you Mr. Lerma.

(Exhibit 14 received in evidence.)

MS. DUNSON: May he be excused?

COMMISSIONER DEASON: Yes.

(Witness Lerma excused.)

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COMMISSIONER KIESLING: I believe the next scheduled witness is Mr. Price.

MS. CANZANO: Commissioner Deason, if this is appropriate time, Staff can mark for identification the exhibits for Goodfriend and Sibley.

COMMISSIONER DEASON: Very well. If all of the parties agree, we'll go ahead and go through the procedure and get all of the economic testimony inserted into the record and all of the exhibits identified.

We'll start with Dr. Kaserman. That's AT&T witness.

MR. HATCH: I believe Dr. Kaserman submitted both direct and rebuttal testimonies. Attached to his direct testimony is an exhibit DLK-1.

COMMISSIONER DEASON: DLK-1 will be identified as Exhibit 15. Were there exhibits attached to the rebuttal?

MR. HATCH: No, there were not.

COMMISSIONER DEASON: So you're moving the insertion of the prefiled direct and rebuttal

testimony of Dr. Kaserman.

MR. HATCH: That is correct.

COMMISSIONER DEASON: That will be inserted into the record as though read without objection. You're also requesting the admittance of Exhibit 15.

MR. HATCH: That is also correct.

COMMISSIONER DEASON: Without objection and stipulation of parties that exhibit is admitted.

(Exhibit 15 marked for identification and received in evidence.)

MR. HATCH: I'm sorry. There's also a deposition of Dr. Kaserman. I'm not sure whether Staff identified that as an exhibit or not.

MS. CANZANO: Staff did not plan to introduce that into the record.

MR. HATCH: We would request that that be marked for identification.

COMMISSIONER DEASON: Is that deposition part of the package of exhibits that was distributed earlier?

MR. HATCH: It's not in there, Commissioner Deason. It was not an exhibit that was identified by Staff. It was a deposition taken by General Telephone on October the 1st.

COMMISSIONER DEASON: Is this part of the

agreement between the parties to have that inserted and identified and admitted into the record?

MR. HATCH: I believe that's correct.

COMMISSIONER DEASON: Has a copy been provided to the court reporter?

MR. HATCH: It will be soon.

MS. CANZANO: Staff needs a copy of that also.

COMMISSIONER DEASON: Yeah, I would think we would all need a copy of that Mr. Hatch. That will be identified as Exhibit No. 16. Could I have a further description of that? It is a transcript of a deposition.

MR. HATCH: Transcript of a deposition of doctor David L. Kaserman taken October 4th, I believe 1996. Was taken by the time of Huntman and Williams, and it was taken in Auburn, Alabama.

COMMISSIONER DEASON: Very well. That will be identified as Exhibit No. 16, and by agreement of the parties that exhibit also will be admitted into the record.

(Exhibit 16 marked for identification and received in evidence.)

COMMISSIONER DEASON: Does Staff have exhibits the for Dr. Kaserman?

MS. CANZANO: Staff does not.

COMMISSIONER DEASON: Very well. That then should complete Dr. Kaserman, is that correct? Very well.

We can then proceed to Goodfriend.

MR. MELSON: Mr. Chairman, Dr. Goodfriend had direct testimony of 46 pages and rebuttal testimony of 8 pages. And I'd ask that those two pieces of testimony be inserted into the record.

COMMISSIONER DEASON: Without objection both direct and rebuttal of Dr. Goodfriend wil be inserted into the record as though read.

MR. MELSON: Dr. Goodfriend had one exhibit attached to her direct testimony, SJG-1. I'd like to have that marked.

COMMISSIONER DEASON: That will be identified as Exhibit 17.

MR. MELSON: And I'd move Exhibit 17.

COMMISSIONER DEASON: Without objection Exhibit 17 is admitted into the record.

(Exhibit 17 marked for identification and received in evidence.)

COMMISSIONER DEASON: Does Staff have exhibits for Dr. Goodfriend?

MS. CANZANO: Yes. Staff has what we have

identified as SJG-2 consisting of her deposition transcript from September 24th, 1996, and late-filed deposition exhibit exhibits 1 through 5, although 1 and 3 through 5 are not provided in this package because it's too voluminous.

COMMISSIONER DEASON: It is Staff's intention that that entire -- all of the matters you just described would be incorporated into Exhibit 18.

MS. CANZANO: Yes, it is.

COMMISSIONER DEASON: Very well. Any objection to Exhibit 18? No objection show that Exhibit 18 is admitted. Any other exhibits for Dr. Goodfriend.

(Exhibit 18 marked for identification and received in evidence.)

COMMISSIONER DEASON: Any other exhibits for Dr. Goodfriend?

MS. CANZANO: Not from Staff.

COMMISSIONER DEASON: Very well. That then should conclude all the matters subject to -- relating to Dr. Goodfriend's testimony. We'll move then to Sibley.

MR. GILLMAN: Yes. Commissioner Deason, GTE asks that the direct testimony of David S. Sibley filed in Docket No. 960847-TP, that that be inserted

into the record as though read.

COMMISSIONER DEASON: Without objection the direct testimony of David Sibley will be inserted into the record.

MR. GILLMAN: Commissioner Deason, Dr. Sibley has two exhibits attached to that testimony, DSS-1 and DSS-2 and request that be marked as a composite exhibit.

COMMISSIONER DEASON: It will be identified as composite Exhibit 19.

(Exhibit 19 marked for identification and received in evidence.)

MR. GILLMAN: David Sibley filed -- also filed the direct testimony in Docket 960980-TP, and GTE would ask that that testimony be inserted into the record as though read.

COMMISSIONER DEASON: Without objection it will be so inserted.

MR. GILLMAN: And there were no exhibits to that testimony.

COMMISSIONER DEASON: Do you move the admittance of Exhibit 19?

MR. GILLMAN: Yes, I do.

COMMISSIONER DEASON: Without objection exhibit 19 is admitted. Does Staff have exhibits for

Witness Sibley?

MS. CANZANO: We have what we've identified as DSS-3 consisting of his deposition transcript from October 2nd, 1996.

COMMISSIONER DEASON: That will be I would had as Exhibit 20.

MR. GILLMAN: Commissioner Deason, I apologize, but we also have some rebuttal testimony by Dr. Sibley.

(Exhibit 20 marked for identification and received in evidence.)

COMMISSIONER DEASON: Very well.

MR. GILLMAN: There was testimony by actually by Michael J. Doane that was adopted by Sibley and filed in Docket 960847-TP. And GTE would request that that testimony be inserted into the record as though read.

COMMISSIONER DEASON: And that is Mr. Sibley was adopting testimony of whom?

MR. GILLMAN: Michael J.Doane.

MR. MELSON: May I inquiry just a minute?

COMMISSIONER DEASON: Yes.

MR. MELSON: My understanding was Mr. Doane's rebuttal testimony was not at all substantive. All it did was adopted Mr. Sibley when

GTE thought that Mr. Doane was going to be the witness.

MR. GILLMAN: I stand corrected. I apologize. That was withdrawn.

COMMISSIONER DEASON: I was concerned because it was not listed in the Prehearing Order. So there is no further testimony to be inserted. Very well.

Staff, do you move the admittance of Exhibit 20?

MS. CANZANO: Yes, we do.

COMMISSIONER DEASON: Without objection show that Exhibit 20 is admitted. And I believe that should conclude Mr. Sibley's testimony. And the parties may be looking at other witnesses as well. We'll so notify the Chair at the appropriate time.

MR. FUHR: Did you say the Exhibit 20 was the deposition?

COMMISSIONER DEASON: Yes. That's the deposition transcript dated 10-2-96.

MR. FUHR: Very good. Thank you.

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DIRECT TESTIMONY OF

DAVID L. KASERMAN

ON BEHALF OF AT&T COMMUNICATIONS

OF THE SOUTHERN STATES, INC.

Docket No. 960847-TP

I. QUALIFICATIONS AND PURPOSE OF TESTIMONY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is David L. Kaserman. My business address is the Department of Economics, College of Business, 415 West Magnolia -- Room 203, Auburn University, Auburn, Alabama, 36849-5242.

Q. WHAT IS YOUR OCCUPATION?

A. I am an economist. My current position is Torchmark Professor of Economics at Auburn University.

Q. WOULD YOU PLEASE SUMMARIZE YOUR QUALIFICATIONS?

A. I hold a Ph.D. degree in Economics from the University of Florida. My principal field of interest is industrial organization, which encompasses the areas of antitrust economics and the economics of regulation. I have over twenty years of experience as a professional economist and have held positions both in government agencies

(e.g., the U.S. Federal Trade Commission) and in academic institutions. In addition, I have consulted on and testified in numerous antitrust cases and regulatory hearings. My primary research interest is in the application of microeconomic analysis to public policy issues, and that interest is reflected in my publications.

Over the past twelve years, I have focused much of my research on public policy issues surrounding the telecommunications industry, particularly those issues created by the emergence of competition in the various markets that comprise that industry. That research has resulted in the publication of more than a dozen papers on this subject, with several more papers currently in progress. I also have recently published a major textbook dealing with the economics of antitrust and regulation. In addition, over this same period, I have testified on telecommunications policy issues in more than fifteen states and before the Federal Communications Commission.

Q. HAVE YOU PREPARED A VITA THAT DESCRIBES YOUR EDUCATION, PUBLICATIONS. AND EMPLOYMENT HISTORY?

A. Yes. A copy of my most recent vita is attached as Exhibit 1.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by AT&T to prepare this testimony in support of its petition to this Commission for arbitration with GTE under the provisions of Section 252 of the Telecommunications Act of 1996 (the Act). Toward that end, my testimony

addresses four specific topics: (1) the pressing need to implement policies that will promote entry into local exchange markets; (2) the economically efficient pricing standard to apply to local interconnection services and unbundled network elements; (3) the economically efficient pricing standard to apply to wholesale services; and (4) other non-price competitive issues that affect the ability of efficient competitors to enter local exchange markets.

Throughout this testimony, I will attempt to explain the fundamental economic principles that should guide the Commission's arbitration decisions concerning these important topics. Adherence to these principles will ensure that Florida consumers begin to receive the myriad benefits of more competitive local exchange markets as rapidly as possible. It will also help to ensure that the competition that emerges is both efficient and sustainable.

II. THE NEED TO PROMOTE ENTRY INTO LOCAL EXCHANGE MARKETS

Q. WHY SHOULD THIS COMMISSION FAVOR ARBITRATION DECISIONS THAT WILL PROMOTE ENTRY INTO LOCAL EXCHANGE MARKETS?

A. Local exchange telephone markets currently stand as the last remaining segment of the telecommunications industry to fall to competitive market forces. They now represent the final source of significant monopoly power in this sector of the economy. As a result, the consumer benefits of policies that will successfully promote competition in these markets are likely to be quite substantial.

Such competition may arise at two distinct levels, which may be conceptualized as the retail and wholesale stages of the local exchange market. The retail stage involves marketing and delivery of end user services (e.g., services directly involved in reaching the customer -- marketing, billing, collection, operator services and directory assistance to customers), while the wholesale stage provides basic network functionalities (e.g., local exchange switching, transmission, signal processing and connection with the customer location) that are used to produce these end-user services.

Retail-stage services may be provided by a carrier entering the local market and obtaining from an incumbent local exchange carrier ("ILEC") the inputs the competitor carrier needs. Here, a new entrant may use the existing facilities of an incumbent carrier such as GTE, but add value in the manner the new entrant presents these services to the customer.[i/]

Services at the wholesale stage, however, require that the new entrant construct from scratch the facilities required to provide these functions -- i.e., become a facilities-based carrier.

While effective competition eventually may arise at both stages, its prospects are currently much brighter at the retail level. Competition at the wholesale stage will require tremendous capital expenditures to fully replicate local exchange networks with the existing technology and, therefore, is not likely to occur either rapidly or on a geographically ubiquitous basis. Instead, competition at this stage is likely to

proceed slowly and to focus largely on the more cost effective urban areas for some time to come. At least for the immediate future, considerable emphasis must be placed on competition at the retail stage -- both through resale and unbundled network element based services -- as the most viable vehicle for pro-competitive change. Such retail competition will yield both immediate and long term benefits to consumers.

Q. WHAT IMMEDIATE BENEFITS ARE EXPECTED TO EMERGE FROM ENTRY INTO LOCAL EXCHANGE MARKETS?

A. Consumers will benefit immediately and directly from retail competition both in reduced costs and expanded service offerings. Other markets that have undergone a similar transformation from monopoly to competitive supply invariably have experienced such beneficial effects from retail competition during the early stages of competition. Even when limited to the retail stage, competitive rivalry imposes pressures to improve performance that even the most conscientious regulators cannot replicate. Such pressures lead to innovative production and marketing strategies that lower costs and increase the quality and variety of products offered to consumers.

Indeed, holding quality constant, under appropriate (competitive) pricing standards, the only firms that will have an incentive to enter the retail stage will be those firms that can perform the retail function at costs that are equal to or below those of the ILECs. Moreover, unlike facilities-based (or wholesale-stage) entry which requires substantial investment, retail-stage entry will enable competitive market forces to

surface rapidly and on a geographically widespread basis.

Q. WHAT LONG-TERM BENEFITS ARE EXPECTED TO RESULT FROM RETAIL COMPETITION IN LOCAL EXCHANGE MARKETS?

A. The promotion of retail competition may provide the most expeditious path toward facilities-based entry as well. Development of a customer base through successful retail entry can provide the antidote to the substantial sunk costs required for facilities-based entry into local exchange markets. That is, once a competitor has successfully entered the retail stage of a local exchange market via resale of the ILEC's wholesale services or unbundled elements, developing identity and goodwill with customers, the risks of investing in the network facilities required to provide these services (investments which may not be recovered if entry is not successful) will be lowered substantially. Moreover, once the new entrant begins to develop its own local network facilities, the ability to purchase unbundled network elements from the ILEC at competitive prices will allow such development to proceed incrementally and in a cost-minimizing fashion.

The experience of interexchange resellers that gradually became facilities-based carriers provides a stellar example to substantiate this argument. MCI, Sprint, and all other non-AT&T facilities-based competitors initially entered the interexchange market as resellers. Successful promotion of retail competition will provide additional benefits by paving the way for a more rapid growth of facilities-based competition, just as it did in the long distance industry.

Q. WILL RETAIL COMPETITION ACHIEVED THROUGH RESALE AND UNBUNDLED ELEMENTS ELIMINATE THE ILECS' MONOPOLY POWER AND, THEREFORE, THE NEED FOR CONTINUED REGULATION OF THESE FIRMS' PRICING AND PROVISIONING DECISIONS?

A. No. While the beneficial effects of retail competition should not be underestimated, it must be recognized that substantial monopoly power in the provision of wholesale-stage services will remain until widespread facilities-based competition emerges. Due to the presence of such monopoly power and the economic incentive of the ILEC to utilize that power to exclude competitors from its markets at both the retail and wholesale stages, regulators will have a crucial role to play in controlling the ILECs' behavior for the foreseeable future.

Transformation of local exchange markets from monopoly to competition is likely to be a prolonged, contentious, and complex process, and its success will hinge largely upon the ability and willingness of regulatory commissions to implement and enforce efficient pro-competitive policies.

Q. IS GTE LIKELY TO VOLUNTARILY ADOPT EFFICIENT ENTRY-FACILITATING PRICING AND PROVISIONING POLICIES?

A. No. Monopoly power such as that held by GTE is a valuable asset that is not likely to be surrendered voluntarily. As a result, voluntary bilateral negotiations with a monopolist are unlikely to bear competitive fruit. Thus, despite the Act's

requirement in Section 251(c)(1)'s that the ILECs negotiate in good faith, it is not likely that such negotiations will yield the complete pricing and provisioning agreements necessary for successful entry.

Indeed, as an economic matter, it is likely that Congress anticipated the failure of voluntary negotiations to provide an adequate resolution of the terms needed for entry. That anticipation, in turn, motivated the Act's provision for the arbitration process in which we are now engaged. Throughout this process, regulators should expect GTE and other ILECs to adopt strategies that: (1) foreclose new firms from entering their markets; (2) encourage existing firms to exit their markets; and (3) extend their monopoly power to other markets. The economics literature refers to these types of anti-competitive strategies as preemption, predation, and monopoly leveraging, respectively. They are designed to maintain, regain, and augment the incumbent's firm's pre-existing monopoly power.

Q. IS THERE ANY REASON THAT GTE MAY BE EVEN LESS WILLING THAN THE BELL OPERATING COMPANIES TO NEGOTIATE AN INTERCONNECTION AGREEMENT THAT WILL FACILITATE ENTRY INTO THEIR LOCAL EXCHANGE MARKETS?

A. Yes. GTE is not subject to the Section 271 provision of the 1996 Act which prohibits the Bell companies from reentering the interLATA market until a certain level of competition (as defined by a checklist of market conditions) is realized. In fact, GTE is already selling both local and long distance services within its regions and has begun joint marketing of these services in several areas. Moreover, the

early indications are that these efforts are experiencing considerable success.

This unique joint-marketing capability places GTE in a strategically advantageous position relative to the interexchange carriers (IXCs). Specifically, until the IXCs are able to enter GTE's local exchange markets, GTE will be the sole supplier of the vertically integrated end-to-end service that most analysts expect to be in very high demand.

Importantly, this competitive advantage is not a manifestation of any superior production efficiencies or innovative service designs. That is, it is not attributable to superior performance by GTE in the marketplace. Rather, it stems from a regulatory-induced advantage that is not shared by GTE's potential competitors. As a result, the competitive scales are being tilted in GTE's favor by an asymmetry in regulatory policy in this regard.

Q. WHAT ARE THE IMPLICATIONS OF THIS REGULATORY INDUCED ADVANTAGE FOR THE COMMISSION'S ARBITRATION EFFORTS?

A. I believe there are two important implications for the arbitration process. First, the Commission should be mindful that GTE lacks any incentive whatsoever to voluntarily negotiate entry-facilitating interconnection agreements. It is likely to be an extremely reluctant participant in the Act's prescribed negotiation process and it is equally likely to be uncooperative in the subsequent arbitration. The longer GTE can forestall entry into its local exchange markets, the greater the head start it will accumulate in the joint marketing of long-distance and local services. There is a real

opportunity here for GTE to strategically exploit the regulatory process to gain a marketplace advantage. It is unlikely to miss that opportunity.

Second, because GTE has already begun to secure this advantage, there is an additional urgency to conclude the arbitration process as rapidly as possible so that GTE's customers can begin to experience some choice in selecting a vertically integrated carrier. Until new entrants such as AT&T can successfully enter GTE's local exchange markets, consumers in these areas will face a monopoly not only for local service but for the bundled local/long distance offering as well.

Thus, the Commission should strive to: (1) complete the arbitration quickly, and (2) specify the terms of its arbitration order to facilitate entry as expeditiously as possible. Otherwise, GTE will be the beneficiary of a regulatory-sanctioned marketing advantage that will tend to entrench its extant market power. Such an outcome is contrary to both the intent of the 1996 Act and the interests of consumers.

Q. WHAT ARE SPECIFIC ACTIONS AN ILEC MAY TAKE IN ORDER TO PRESERVE ITS MONOPOLY POSITION?

A. The specific actions an ILEC may take to maintain its monopoly are quite numerous. They can involve both price and non-price terms of sale. With regard to the former, a vertical price-cost squeeze may be used to force competitors from a market or prevent potential competitors from entering. For example, entry into GTE's intraLATA toll markets has been frustrated by its pricing access services high

in relation to the rates GTE charges for its toll services.

Similarly, a refusal to interconnect or the provision of inferior interconnection can have an equivalent effect. For example, a requirement that a new entrant interconnect at a predetermined single point or adopt a specific type of interconnection can increase the entrant's costs by preventing the firm from making efficient use of its network.

Additionally, a refusal to provide specific contractual terms that a potential entrant may require (e.g., quality of service standards with explicit penalties for non-performance) can have similar exclusionary effects.[ii/] As a result, regulators will need to enforce explicit pro-competitive policies pertaining to all aspects of the ILECs' behavior--pricing, provisioning, and contracting -- if the desired market transformation is to be achieved.

Q. IS THERE A DANGER THAT PROMOTION OF RETAIL COMPETITION WILL TEND TO DISCOURAGE FACILITIES-BASED ENTRY?

A. As I explained above, as long as retail competition is fostered through efficient, pro-competitive pricing and provisioning policies, it will tend to promote, rather than discourage, facilities-based entry. Specifically, as long as such competition is not subsidized by pricing wholesale services and unbundled network elements below the relevant economic costs of providing these products, the incentive for facilities-based entry to occur is not dampened in the least by successful resale entry.

The pricing principles I will explain later in this testimony and the specific pricing standards that result from these principles are subsidy-free. As a result, there is no conflict between these standards and the legitimate desire to promote facilities-based competition. Under the correct pricing standards, the two forms of entry are complements, not substitutes. I turn, now, to these pricing standards.

III. THE PRICING OF INTERCONNECTION SERVICES AND UNBUNDLED NETWORK ELEMENTS

Q. WHAT IS THE FUNDAMENTAL ATTRIBUTE OF ECONOMICALLY EFFICIENT PRICES?

A. In the absence of any significant market failures, the fundamental characteristic of efficient prices is that they reflect the marginal or (as is typically measured in the telecommunications industry) incremental costs imposed on the provider to supply the good or service in question.[iii/] The price that consumers pay for a service measures society's marginal willingness to pay for the last unit produced. Marginal cost measures the marginal value to society of the resources used to produce the last unit. Only if the marginal willingness to pay (i.e., the price of a good) is equal to the marginal (or incremental) value of the resources employed in production (i.e., the marginal cost of a good) is the socially optimal level of output realized.[iv/]

Q. COULD YOU PLEASE ILLUSTRATE THIS POINT?

A. Yes. Assume the price of some product, say pencils, exceeds the incremental cost of production. Specifically, suppose that the price of pencils is 23¢ and the incremental cost is 14¢. An economist would say that there is a socially sub-optimal level (or an under-allocation) of resources being devoted to the production of pencils.

The reason is that at the prevailing price there are consumers who value the good more highly than it costs the firm (or, more generally, society) to produce the good. Because they do not value the good more than the inflated price, however, they are economically and inefficiently denied consumption of the good. That is, despite the fact that they value the next unit of the good 9¢ more than it costs society to produce that next unit, additional consumption does not occur. In this situation, then, society's resources are fundamentally misallocated. The solution to this misallocation occurs when (and only when) price reflects the incremental (or marginal) cost of production.

Q. WHY IS IT IMPORTANT FOR THE FLORIDA COMMISSION TO APPLY EFFICIENT PRICING PRINCIPLES IN ITS ARBITRATION DECISIONS?

A. In a free market economy, prices serve an extremely important role as signals for resource allocation decisions of all types. For example, high prices encourage consumers to cut back on consumption. At the same time, they encourage producers to increase the quantity of the product supplied. The resulting adjustments provide an equilibrium between production and consumption of the product. With regard to entry decisions, prices serve as traffic signals, directing the flow of productive

resources between industries. Consequently, efficient allocation of resources and promotion of competition require very careful attention to the level at which regulators set prices. Specifically, prices must be established at economically efficient (i.e., incremental cost) levels if efficient and pro-competitive outcomes are to be encouraged.

Traditional regulatory pricing policies, however, have not always pursued efficiency. Frequently, other regulatory objectives have dominated efficiency considerations in price making decisions.[v/] As a result, regulated price structures have typically contained substantial elements of cross-subsidization, where the price to one group of consumers exceeds cost in order to hold the price to another group of consumers below cost.[vi/] The resulting departure of price from cost creates economic inefficiency in both the subsidized and subsidizing markets.

Where both of these markets are subject to monopoly supply with entry prohibited by regulatory fiat, such inefficient cross-subsidization policies, while harmful to social welfare, can be sustained. Where entry barriers are relaxed, however, the presence of inefficient prices (such as those that accompany cross-subsidization policies) creates distorted incentives for entry decisions, and eventually these prices become unsustainable.

Specifically, in markets where price is held above cost (that is, the markets that are generating the subsidies), entry may be artificially encouraged. Such entry, in turn, forces these prices downward, thereby eliminating the source of the cross subsidy. In markets where price is held below cost (that is, the markets that are receiving the

subsidies), entry is discouraged. Indeed, there is no more effective entry barrier than a below-cost price. It makes little sense, then, to relax legal and regulatory barriers to entry and then set prices below costs through the regulatory process (except where such prices are necessary to compensate for other prices which are below cost). Such a pricing policy is, in effect, regulatory-enforced predatory (or preemptive) pricing.

Therefore, as local exchange markets evolve from monopoly to competition, it is absolutely essential that regulators abandon existing policies of cross-subsidization and inefficient pricing and substitute efficient pricing structures. Once entry is allowed, it is imperative that the correct signals be given to market participants -- particularly potential entrants -- to direct the efficient flow of resources into these markets. Just as faulty traffic signals can cause serious accidents, faulty price signals can cause serious inefficiencies.

Q. GIVEN THE PRICING PRINCIPLE YOU HAVE IDENTIFIED, AT WHAT SPECIFIC LEVEL SHOULD THE COMMISSION SET THE PRICES FOR INTERCONNECTION SERVICES AND UNBUNDLED NETWORK ELEMENTS?

A. Interconnection services and unbundled network elements are crucial inputs that new entrants will need to purchase from GTE in order to compete at the retail stage in local exchange markets in Florida.[vii/]

In order to promote efficient entry at the retail stage, the price these entrants should

pay for these inputs is equal to the incremental cost that GTE incurs to provide them. Moreover, due to the multiproduct nature of GTE's operations, the relevant cost to which prices should be equated is what is known as the total service long-run incremental cost, or TSLRIC.[viii/]

TSLRIC is the theoretically correct basis for pricing these inputs for several reasons.[ix/] First, TSLRIC is an incremental cost. As a result, socially optimal purchase and entry decisions will be fostered with prices set at this level. Second, TSLRIC is long-run in nature. Because the decision to enter a market is, by definition, a long-run decision, TSLRIC prices will send economically correct signals to potential entrants. Third, TSLRIC is an economic cost. As such, it includes a normal (competitive) profit on the capital that is invested to provide the relevant service or element. And fourth, the concept applies to total service costs, which means that all costs that can be causally attributed to production of the product in question are incorporated in these prices. Thus, TSLRIC prices for interconnection services and unbundled network elements are subsidy-free and economically efficient. Such prices will promote efficient and sustainable competition in local exchange markets.

Q. IS THE POLICY RECOMMENDATION THAT THESE PRICES BE SET EQUAL TO TSLRIC CONSISTENT WITH THE TELECOMMUNICATIONS ACT OF 1996?

A. Yes. Section 252(d)(1) of the Act requires that the prices for interconnection services and unbundled network elements 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 ..."

Moreover, this Section further indicates that these prices "may include a reasonable profit."

Because TSLRIC prices are, in fact, equal to the long-run incremental cost of providing these inputs, including a normal profit on the causally attributable invested capital, the Act's criteria are fully satisfied by such prices.

In addition, the clear and overriding intent of this legislation is to promote competition in local exchange markets. That is, the Act's primary purpose is to put in place a set of pricing and provisioning regulatory policies that eventually will foster a structural transformation of these markets from monopoly to competition. For reasons explained above, that transformation depends heavily upon successful entry by firms that, for some time, will be dependent upon the ILECs for certain network functions and components for which there is currently no alternative. As a result, it is crucially important that these functions and components -- interconnection services and unbundled network elements -- be priced at economically efficient TSLRIC levels. Otherwise, the entry process will be distorted, and the desired market transformation will be artificially delayed. Thus, TSLRIC pricing of these inputs is not only consistent with the letter of this Act, it is also consistent with the Act's overall objectives.

Further, Section 252(d)(2)(A), dealing with charges for transport and termination of traffic, specifies that:

> . . . a State commission shall not consider the terms and conditions for reciprocal compensation to be just and reasonable unless -
>
> (i) such terms and conditions provide for the mutual and reciprocal recovery by each carrier of costs associated with the transport and termination on each carrier's network facilities of calls that originate on the network facilities of the other carrier; and
>
> (ii) such terms and conditions determine such costs on the basis of a reasonable approximation of the additional costs of terminating such calls. [Emphasis added.]

Thus, prices based upon the principles of cost causation (linkage of costs to the product giving rise to these costs) and incremental costs appear to be envisioned by the Act. Again, TSLRIC prices correspond directly with these principles and, therefore, clearly satisfy the Act's criteria.

Q. IS THIS PRICING RECOMMENDATION ALSO CONSISTENT WITH THE TRADITIONAL ECONOMIC CRITERION OF MAXIMIZATION OF SOCIAL WELFARE?

A. Yes, TSLRIC pricing is entirely consistent with that criterion. Social welfare as used by economists essentially is a reflection of the overall well-being of the

community involved, including both the consumers and producers of the product. Maximization of social welfare insures that both groups receive the greatest level of satisfaction attainable from existing resources.

Economists typically arrive at their pricing recommendations by solving a constrained optimization problem wherein some specific objective function (or goal) is maximized or minimized, subject to a given set of constraints. In the usual situation involving regulatory pricing recommendations, prices have been chosen to maximize social welfare subject to the constraint that the market is a natural monopoly[x/]

Due to the technological and economic feasibility of transforming local exchange markets from monopoly to competition, however, the assumption of a static natural monopoly market structure no longer provides an appropriate foundation from which to derive pricing recommendations. Instead, recognizing the tremendous benefits that will flow from a successful transformation of these markets from monopoly to competition, we should select prices for monopolized inputs, such as interconnection services and unbundled network elements, that optimize the pace at which such competition emerges.[xi/]

Because interconnection services and unbundled network elements constitute vital monopoly-controlled inputs that will be required by new entrants into local exchange markets, the lower these prices are set, the more rapid will be the development of resale competition. Viable competition that will be sustainable in the long run, however, cannot be fostered by subsidizing the entry process. The

prices for interconnection services and unbundled network elements should be subject to the constraint that they be subsidy-free.

The revised optimization problem we now face, then, is to find a set of input prices that will maximize the welfare of the community served by optimizing the pace at which local exchange competition develops subject to the constraint that these prices be subsidy free. The obvious solution to this problem is to set these input prices at the lowest unsubsidized level. That level, in turn, is equal to the (per unit) TSLRIC of these inputs. Consequently, setting these prices at TSLRIC is consistent with the traditional economic criterion of maximizing social welfare.

Q. ARE THERE OTHER BENEFICIAL PROPERTIES OF TSLRIC PRICES FOR LOCAL INTERCONNECTION AND UNBUNDLED NETWORK ELEMENTS?

A. Yes. In addition to promoting a rapid development of local exchange competition, TSLRIC prices for interconnection services and unbundled network elements exhibit several additional beneficial properties.

First, such prices promote efficient entry decisions. A firm considering entry will compare its expected post-entry revenues to its expected costs. Where the former exceed the latter, profitable entry is feasible. Expected costs, however, are influenced directly by the prices the ILEC such as GTE charges for the inputs it sells to its competitors. If those input prices are held above their respective TSLRICs, the entry decision will be artificially distorted. Consider, for example, the consequences

of setting the price of an unbundled element at $4 per month if the TSLRIC of that element is only $2 per month. In that case, an efficient firm considering an entry strategy that requires purchase of that particular network element will be inefficiently discouraged from entering. As a general proposition, input prices that exceed TSLRIC artificially dampen the new entrants incentive to enter. Such prices create a disadvantage for the new entrant from the start.[xii/]

Second, a similar conclusion holds with respect to potential entrants' and new competitors' make-or-buy decisions. Such firms must decide which network elements to purchase from the ILEC and which elements to supply or construct themselves. These decisions are founded squarely on a comparison of the incremental costs of the two alternative sources of supply -- one being the entrant's incremental cost of purchasing the element from the ILEC (simply the price that must be paid for it) and the other being the incremental cost of constructing that element anew. If the ILEC's price is held above its incremental cost of providing that network element (i.e., its TSLRIC), an artificial incentive is created for the new entrant to supply that element itself. As a result, the ILEC's existing network infrastructure will be under-utilized and industry costs will be increased unnecessarily. Moreover, the higher costs experienced by the firms that have been artificially encouraged to self-supply undermines the ability of market forces to push the ILEC's retail product prices downward toward competitive levels. As a result, the intensity of competition is dampened.

Finally, by creating parity between the prices charged by the ILEC and the costs the ILEC incurs to provide interconnection services and unbundled network elements,

the prospects for anti-competitive behavior are reduced. For example, the ILEC's incentive and ability to engage in a vertical price squeeze against its competitors are reduced by establishing prices for ILEC-supplied monopoly inputs that accurately reflect incremental costs. The reason is that, with upstream prices equal to costs, any attempt by an ILEC to price predatorily at the downstream stage will require the firm to reduce retail prices below its own incremental cost of providing the retail service. It is relatively unlikely that the firm would embark on such a strategy that purposefully inflicts losses on itself on the uncertain prospect that it will be able to recover these losses in the future.

Thus, the pricing of inputs to reflect their underlying TSLRICs can be seen to more closely align the self-interest of the ILEC (to make profits) with the interests of society (both to avoid monopolistic practices that deter competition and to minimize the need for subsequent regulatory intervention).

Q. IF YOUR RECOMMENDATION IS ADOPTED AND INTERCONNECTION SERVICES AND UNBUNDLED NETWORK ELEMENTS ARE PRICED AT TSLRIC, IS GTE LIKELY TO EXPERIENCE A REVENUE SHORTFALL?

A. No. Claims that strict adherence to efficient pricing principles would bankrupt the ILECs have been employed by various advocates of inefficient prices for decades. The alleged "justification" for raising certain (monopoly) local exchange prices above incremental costs have included: (1) claims of natural monopoly; (2) the alleged presence of ILEC common costs, which may not be captured in incremental cost measures; (3) the need to recover ILEC embedded costs or ensure a return on

stranded investment; and (4) the need to generate subsidy flows within the regulated firm to support the universal service objective.[xiii]

Regardless of which of these alleged rationales is employed, the argument fails to provide an adequate justification of the proposed departures from efficient prices, especially input prices paid by competitors for unbundled elements or interconnection services. For instance, natural monopoly conditions no longer appear to extend over the full set of services provided by local exchange companies.[xiv/] Moreover, the perception that TSLRIC prices will automatically fail to cover firm costs often stems, at least in part, from some fairly common misconceptions concerning what is properly included in the firm's prices under this cost concept. In particular, some parties have failed to recognize that: (1) because long-run incremental cost is an economic cost, it includes a normal profit on the provision of the service in question; and (2) because it is a long run cost, it includes the cost of any fixed assets (or overhead) that can be causally attributed to that service. Therefore, the fundamental premise underlying this argument -- that efficient prices necessarily will fail to cover costs -- is questionable.

Even if efficient prices do fail to cover the regulated firm's current costs (which are likely to be inflated both by embedded costs and inefficiencies), they may still generate sufficient revenues to cover the lower (economic) costs that will be realized in a more competitive environment. That is, the ILEC's costs are not immutable. GTE's rising profits under current price cap regulation demonstrate this. Regulation of a monopoly has a pronounced tendency to inflate observed costs above those attainable under more competitive conditions.

As with other industries that have undergone a similar transformation, the emergence of competition in local exchange markets is likely to result in substantial efficiency gains that will reduce costs considerably. As a result, the same set of prices that generate insufficient revenues today may yield sufficient revenues tomorrow. Regulators should not assume that the ILEC's costs are completely generated by external forces. Substantial portions of these costs may be within the control of the ILEC itself and these costs will fall with the advent of competition.

Q. IF THE FLORIDA COMMISSION DETERMINES THAT SOME OF GTE'S PRICES SHOULD BE RAISED ABOVE TSLRIC, DOES ECONOMIC THEORY PROVIDE ANY GUIDANCE CONCERNING WHICH PRICES SHOULD BE RAISED?

A. If other financial or policy considerations dictate that some subset of the ILEC's prices be raised above its costs as measured by TSLRIC, fundamental economic principles require that retail prices be raised, not those prices charged to and disproportionately borne by new entrants. Increasing intermediate product prices for competitors above efficient levels creates distortions in downstream production processes which must ultimately be borne by consumers, no matter which carrier they may choose for their retail service.[xv] As a result, it is more economically efficient to recover any revenue shortfall from final consumers directly in the prices they pay for retail services. Such a recovery mechanism is competitively neutral, as the Act intends.

To the extent prices new entrants pay for unbundled network elements and network interconnection are raised above TSLRIC -- in order to generate revenues to achieve some other objective (e.g., to provide an additive for some recovery of embedded costs found to be "just and reasonable" or to pay for universal service subsidies) -- we are effectively sacrificing competition on the altar of this alternative goal. Such a sacrifice is unnecessary, because there are alternative, more efficient means of raising those revenues. This general policy prescription holds all the more strongly in the local exchange markets today, where public policy is attempting to facilitate a rapid transition from monopoly to competitive supply. Therefore, there is simply no principled basis for raising interconnection services and unbundled network elements prices above TSLRIC.

Q. TO BE CLEAR, IS IT YOUR POSITION THAT FINANCIAL VIABILITY CONSIDERATIONS DO NOT PROVIDE AN ECONOMICALLY RATIONAL JUSTIFICATION FOR INCREASING THE PRICES OF ILEC-SUPPLIED INPUTS ABOVE THEIR RESPECTIVE TSLRICS?

A. That is correct. In order to understand this issue more clearly, it is useful to pose the following three questions:

1. If ILEC-supplied monopoly inputs are priced at TSLRIC will the ILEC's costs exceed its revenues?
2. If TSLRIC prices for ILEC-supplied monopoly inputs do generate a revenue shortfall (i.e., if the answer to question 1 is yes), should regulators ensure that the ILEC is made whole?
3. If TSLRIC prices for ILEC-supplied monopoly inputs do generate a revenue

shortfall and the ILEC is entitled to recover at least some portion of it, how should the necessary revenues be recovered?

I answer each of these questions below.

Q. WOULD THE ILEC'S COSTS BE LIKELY TO EXCEED ITS REVENUES IF ILEC-SUPPLIED MONOPOLY INPUTS ARE PRICED AT TSLRIC?

A. Two considerations suggest that the answer to this question is "perhaps but probably not."

First, I am not proposing that all of the ILEC's revenue-generating services be priced at TSLRIC-- only those interconnection services and unbundled elements that are subject to monopoly power and must be purchased by competitors to enter local exchange markets. ILECs currently sell many other services and products (e.g., vertical services and yellow pages) that are priced well in excess of their costs. As a result, it is not at all clear that pricing this competitively-important subset of services at TSLRIC will create an overall revenue shortfall.

Second, unless there are substantial common costs present in the ILEC's operations, TSLRIC prices will be fully compensatory. Some recent evidence suggests that the magnitude of common costs in this industry has been greatly exaggerated.[xvi/] If that is the case, then implementing TSLRIC prices for interconnection services and unbundled network elements will not create a revenue shortfall. Therefore, the answer to question 1 is clearly not an unambiguous "yes" -- it may, in fact, be "no."

Q. SHOULD THIS COMMISSION ENSURE THAT GTE IS MADE WHOLE IF ITS TSLRIC PRICES TO NEW ENTRANTS GENERATE A REVENUE SHORTFALL?

A. I am convinced that the theoretically correct answer here is "probably not" or, at least, "GTE should not be fully compensated." Several reasons underlie this opinion. First, the traditional regulatory compact, as interpreted in the landmark Hope Natural Gas case, never promised (or could promise) normal profits under all circumstances.[xvii/] Firms do not go bankrupt overnight, and many firms (both regulated and unregulated) have weathered prolonged periods of losses without exiting their industries. Thus, a regulatory policy that requires that the ILECs' profits be positive in every period would not appear to be economically optimal. Second, whatever regulatory compact might have existed under rate-based, rate-of-return regulation would appear to have been voluntarily repealed when Florida shifted to price-cap regulation for GTE. A principal feature of this alternative regulatory regime is supposed to be that the firm's stockholders willingly accept increased risks of both financial gains and losses.

Regulatory commissions simply cannot simultaneously continue to hold the ILECs harmless from competitive risk and promote any sort of meaningful competition in local exchange markets. Protection of competitors is fundamentally incompatible with promotion of competition as required by the Act and as planned for the benefit of Florida local telephone customers. As local exchange markets begin to evolve toward competition, ILEC appeals to be made whole (particularly at the expense of their competitors) should be increasingly ignored.

Q. IF THIS COMMISSION DETERMINES GTE IS ENTITLED TO RECOVER SOME PORTION OF AN ESTIMATED REVENUE SHORTFALL, HOW SHOULD THE RECOVERY BE ACCOMPLISHED?

A. If it is decided that revenue shortfalls will be caused by TSLRIC pricing of ILEC-supplied inputs and that the ILECs should be at least partially, if not fully, compensated, the theoretically correct answer to this question again leads us to endorse TSLRIC prices for interconnection services and unbundled network elements. That is, if additional revenues are required beyond those realized under TSLRIC input prices, then these revenues should be recovered directly from all end users in a competitively neutral fashion. We should not distort the input prices paid by the ILEC's potential or actual competitors to collect these revenues. In short, under no circumstances does the financial viability issue warrant a departure from economically efficient TSLRIC prices.

Q. PRICING INTERCONNECTION SERVICES AND UNBUNDLED NETWORK ELEMENTS AT TSLRIC OBVIOUSLY REQUIRES EMPIRICAL ESTIMATES OF THESE COSTS. ARE SUCH ESTIMATES CURRENTLY AVAILABLE?

A. Yes. To implement this pricing recommendation, regulators will need to adopt a costing methodology that is capable of providing reasonably accurate estimates of the TSLRICs of the interconnection services and unbundled network elements that new entrants will be purchasing from the ILECs.

Specifically, any model used should generate cost estimates that: (1) are forward looking; (2) employ least-cost but currently available technologies; (3) measure incremental costs; (4) are long-run; and (5) are consistent with cost causation. The model described in AT&T Witness Wood's testimony appears to provide such a methodology.[xviii]

IV. THE PRICING OF WHOLESALE SERVICES

Q. IS THERE AN ECONOMIC DISTINCTION BETWEEN THE SALE OF UNBUNDLED NETWORK ELEMENTS AND WHOLESALE SERVICES?

A. Yes. Under the "unbundled network elements" scenario, a new entrant into a local exchange market has at least two options available. First, the entrant may choose to purchase a complete package of unbundled elements (including the loop, switch, and local transport) that will enable it to supply end-user services in direct competition with the ILEC. That is, it may enter with no local network facilities of its own. This so-called platform approach offers several desirable economic properties. For example, by purchasing unbundled elements, the new entrant may be able to devise and configure new service offerings that better meet particular customer needs, thereby serving market niches that would otherwise go unserved. In addition, the platform approach provides a source of market discipline that can help to prevent or overcome anti-competitive abuses that may arise from mispricing of other ILEC services (e.g., wholesale services and carrier access services). Specifically, the flexibility of supply created by allowing new entrants to purchase

the complete package of network elements at efficient prices can help to constrain the ILEC's ability to foreclose entry through various alternative strategic actions.[xix/]

Under the second entry option using the unbundled network element approach, the new entrant may purchase a subset of the ILEC's network elements and combine those elements with other network components that are either self-supplied or purchased from some other provider(s) in order to produce some end-user service that, again, may or may not correspond directly to an end-user service of the ILEC. That is, these unbundled elements supplied by the ILEC are simply inputs into a production process. The particular output or service that process yields is determined by the firm purchasing those inputs. It is not constrained by the existing output mix of the ILEC from which the unbundled elements are bought. As a result, the firm's success in the marketplace will depend upon its ingenuity in designing service offerings that better meet consumers' preferences and its efficiency in combining inputs to produce those service offerings at competitive prices. Moreover, this second approach allows for partial facilities-based competition at the retail stage and permits an incremental investment strategy that ultimately will promote competition at the wholesale stage as well.

Wholesale services, on the other hand, are discounted versions of the ILEC's underlying retail products. A new entrant purchasing a wholesale service, then, must compete directly with the corresponding retail service that the ILEC is already selling. As a result, the feasibility of entering the market as a reseller of wholesale services is directly contingent upon the relationship (or spread) between the existing price of the retail service and the price of the wholesale service. That difference, in

percentage terms, is referred to as the wholesale discount. Obviously, the level at which that discount is set -- and not the specific price at which the wholesale service itself is set -- will influence the incentive to enter the local exchange market as a reseller.

As a consequence, the pricing problem presented by wholesale services is somewhat different from the pricing problem presented by unbundled network elements. Specifically, the former pricing problem must incorporate the retail rate charged for the end-user service, whereas the latter pricing problem need only reflect the appropriate incremental costs. Despite this difference, however, the economic principles that apply to these problems are precisely the same.

Q. IS THE DISTINCTION BETWEEN THESE PRICING PROBLEMS RECOGNIZED IN THE ACT?

A. Yes. The Act appears to recognize both this difference and the commonality of the economic principles involved. The Act specifies that wholesale discounts be set equal to the costs the ILEC will avoid by selling the service at the wholesale stage versus the retail stage. Specifically, Section 252(d)(3) provides that:

> "A State commission shall determine wholesale rates on the basis of retail rates charged to subscribers ... excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be avoided by the local exchange carrier."

The Act clearly recognizes the need to incorporate the retail rate charged by the

ILEC when establishing the wholesale rate to be paid by resellers competing with 675
that ILEC. Moreover, the avoided cost concept also suggests that the wholesale discount should reflect incremental costs -- here, the incremental costs of reducing or eliminating the ILEC's retail stage operations.

Q. IS THIS PROVISION CONSISTENT WITH THE DICTATES OF EFFICIENT PRICING?

A. Under an appropriate definition of the "costs that will be avoided," under the Act, it is entirely consistent with efficient pricing principles. Specifically, avoided costs should be defined to include all of the long-run incremental costs associated with the retail activities of the ILEC that will be avoided when the ILEC ceases to perform those retail activities.

Conceptually, such avoided costs consist of three basic components: (1) the long-run incremental costs that an efficient provider of the retail function would incur (i.e., the TSLRIC of the retail stage); (2) any additional costs that the ILEC currently incurs in the provision of retail services that are attributable to production inefficiencies (i.e., any organizational slack or "fat" contained in the ILEC's observed costs at the retail stage); and (3) any positive economic profit earned by the ILEC at the retail stage (where positive economic profit is the excess above a normal return on the firm's activities at this stage).[xx/]

The first component consists of the costs avoided by an economically efficient supplier of retail services that is minimizing cost and earning a normal profit (i.e., a

competitive return). A normal profit or competitive return is the investors' risk-adjusted return on capital investments, measured by opportunities presented in alternative enterprises. It is the very same return a new entrant would expect to earn.

The second and third components of avoided costs (fat and excess profits) are arguably the most avoidable of all avoided costs. If the ILEC no longer provides the retail services, then it no longer bears the cost inefficiencies that it formerly incurred in the provision of those services. Likewise, it is no longer entitled (if it ever was) to any excess profits associated with its retail operations. Consequently, the concept of avoided costs should incorporate all three components, because all three will, in fact, be avoided. I refer to this guidepost for establishing the efficient wholesale discount as the "avoided cost pricing rule." The application of this rule to the pricing of GTE's wholesale services will yield economically efficient (and, therefore, pro-competitive) outcomes.[xxi/] Moreover, this rule is consistent with Section 252(d)(3).

Q. DOES APPLICATION OF THE AVOIDED COST PRICING RULE RESULT IN AN ECONOMICALLY EFFICIENT PRICE FOR WHOLESALE SERVICES?

A. Whether application of this rule will lead to an economically efficient wholesale price depends upon the efficiency of the retail price to which the (efficient) wholesale discount is applied. Regardless of the efficiency of the retail price, however, it is economically efficient to apply the avoided cost pricing rule. Three

simple cases help to explain this point.

Case 1: An Efficient ILEC With No Excess Profit: In this case, the price the ILEC charges for the retail service is equal to the costs the ILEC incurs in providing this service. In other words, the ILEC experiences competitive profits in selling this service. In this case, the application of the avoided cost pricing rule (where avoided costs include all three of the components identified above) will, in fact, result in an economically efficient wholesale rate. That is, the wholesale discount dictated by this rule will result in a wholesale rate equal to the TSLRIC of providing the upstream wholesale service.

A simple example can be used to illustrate this point. Suppose the TSLRIC of providing the wholesale service is $7 per month. Also, suppose the (efficient) TSLRIC of providing the retail portion of the service is an additional $5 per month, yielding a total TSLRIC of the overall service of $12 per month. Assume initially that the ILEC providing this service is economically efficient (i.e., its operations contain no fat) and it is earning a normal (competitive) profit. Under these circumstances, the retail price must be equal to the sum of the TSLRICs of the two vertical stages -- wholesale plus retail. Thus, the retail price from which the wholesale discount is subtracted is $12. With neither fat nor excess profit at the retail stage, avoided cost is simply the TSLRIC of performing the retail function which, in this example, is $5. Thus, application of the avoided cost pricing rule yields a wholesale discount of $5 or a wholesale rate of $7, which is precisely equal to the TSLRIC of providing the wholesale service.[xxii/]

This wholesale rate promotes economic efficiency at both of the vertical stages of production. At the retail stage, the $5 discount encourages efficient reseller entry and discourages inefficient reseller entry. Any potential entrant that can perform the retail function at an incremental cost equal to or below the incremental cost incurred by the ILEC is encouraged to enter and provide that function, thereby placing downward pressure on the price charged to consumers. Any potential entrant that incurs retailing costs greater than the ILEC is discouraged from entering.

Case 2: An Inefficient ILEC With Excess Profits: Importantly, these same efficiency properties will continue to hold under the proposed rule in the presence of inefficient production by the ILEC and/or excess profit (i.e., profits exceeding the ILEC's opportunity cost of its investment.). For example, suppose that, in addition to the $5 TSLRIC at the retail stage, the ILEC incurs an additional $2 in production inefficiencies at the retail stage and an additional $2 in excess profit. In this situation, the retail price is $16 per month ($7 wholesale TSLRIC, plus $5 retail TSLRIC, plus $2 fat, plus $2 economic profit). But this price minus the wholesale discount provided by the avoided costs (which are now equal to $9) still yields the efficient wholesale rate of $7. Moreover, this rate still promotes efficient entry decisions at both the retail and wholesale stages.

Most importantly, unlike some proposed rules, this efficient discount allows competitive market forces to be unleashed on the ILEC's inefficient and overpriced retail operations. Specifically, an efficient entrant paying $7 for the wholesale service will be able to undercut the ILEC at the retail stage, pushing the final product price downward toward the competitive ($ 12) level. Under this rule,

market forces will provide consumers the benefits of competitive retailing, placing pressure on the ILEC to improve the efficiency of its retail operations. Whenever the retail price is equal to or greater than the costs the ILEC incurs, application of the avoided cost rule promotes economic efficiency and provides consumer benefits at both stages.[xxiii/]

If, instead of the proposed avoided cost pricing rule, we were to subtract only the TSLRIC of an efficient firm at the retail stage, however, the effect would be to insulate the ILEC's inefficiency and excess profit from the forces of competition. Under this approach, the wholesale rate would be set at $11 (the retail price of $16 minus the retail stage TSLRIC of $5). At this wholesale rate, an efficient entrant will be unable to undercut the incumbent's price; and, as a result, the beneficial effects of entry are greatly attenuated. Neither inefficiency nor excess profits are exposed to market forces. Consequently, the ILEC is effectively indemnified from competition at customers' expense.

Case 3: An Efficient ILEC and ILEC Revenues Below TSLRIC Costs:

Suppose a third case, where the retail price is, for whatever reason, held below the ILEC's overall cost of providing the service (i.e., the service is being subsidized). In this case, application of the avoided cost pricing rule will still produce an efficient wholesale discount, but it generally will fail to produce an efficient TSLRIC wholesale rate or price. Quite simply, an efficient discount applied to an ILEC's inefficient price yields another inefficient price. Importantly, however, application of the avoided cost pricing rule in this case still allows competition to arise in the provision of the retail portion of the overall service despite the existence of the

below-cost price. In so doing, it maximizes the consumer benefits achievable in the presence of the retail-stage pricing distortion.

Here, again, a simple example is instructive. Assume we have the same TSLRICs used in the preceding example. To simplify the analysis, we further assume that the ILEC's operations are efficient (i.e., we assume zero fat).[xxiv/] Here, however, we assume the ILEC earns negative profits of $2 per month on each unit of the service provided. The retail price charged for this service is now $10 per month ($7 wholesale TSLRIC, plus $5 retail TSLRIC, minus the $2 in negative profit). Because negative profits are not avoided by selling at wholesale versus retail, the $2 loss involved in the sale of this service does not enter into the calculation of the efficient wholesale discount. That is, negative profits do not constitute avoided costs.[xxv/]

As a result, the discount in this case is simply the $5 in avoided costs (i.e., the TSLRIC of the retail function). Therefore, the wholesale price under the avoided cost rule is reduced to $5 in this situation. Notice that this price is below its corresponding TSLRIC by the same amount ($2) that the retail price is held below the total TSLRIC of providing the overall service. The subsidy here is merely shifted from the retail to the wholesale stage.

What, then, are the efficiency properties of this below-cost wholesale price? The fundamental efficiency property is that, as with the preceding case, efficient entry at the retail stage will be encouraged and inefficient entry at that stage will be discouraged. With a wholesale price of $5 and a retail price of $10, any potential

entrant that can perform the retail function at an incremental cost of $5 or less (the TSLRIC an efficient ILEC incurs to perform that function) will have an incentive to enter the market on a resale basis. Any potential entrant whose incremental costs exceed $5 cannot profitably enter. By preserving the incentive for efficient resale entry, the avoided cost pricing rule enables competition to arise at the retail stage of production despite the presence of the below-cost price.

Q. IN YOUR THIRD CASE, WILL THE BELOW-COST WHOLESALE PRICE TEND TO DISCOURAGE FACILITIES-BASED ENTRY AT THE WHOLESALE STAGE?

A. No. In this case, facilities-based entry at the wholesale stage is already effectively foreclosed by the retail price which has been set below cost. Setting the wholesale price below cost by an equal amount has no independent or additional effect on the incentive for facilities-based entry to occur. The culprit here is the retail rate, not the wholesale rate. Indeed, no pricing standard of which I am aware can provide an incentive to enter at the wholesale stage so long as the retail rate remains below cost.

For example, suppose regulators attempt to preserve what might mistakenly be perceived to be an efficient incentive for entry at the wholesale stage by setting the wholesale rate equal to the TSLRIC of providing the wholesale service (which is $7) while continuing to hold the retail rate below cost (at $10). Under this wholesale pricing proposal, no entry will occur at either stage. Obviously, entry as a reseller will be foreclosed. With a wholesale rate of $7, a retail price of $10 and an efficient TSLRIC of performing the retail function of $5, even a firm that is more efficient

than the ILEC in carrying out retail operations cannot successfully enter on a resale basis. And, with no resellers in the market, entry as a pure wholesaler is not feasible. Finally, entry as a vertically integrated carrier providing both the wholesale and retail functions is also foreclosed, because the $10 retail price fails to cover the $12 costs incurred by an efficient firm operating at both vertical stages. Thus, incremental cost (TSLRIC) pricing at the wholesale stage in the presence of a subsidy at the retail stage is a formula for preserving monopoly at both stages. It is a policy that is clearly at odds with the legislative intent of the 1996 Act to promote competition as well as the interests of consumers.

Q. BY SETTING THE WHOLESALE PRICE BELOW TSLRIC, WON'T THE ILECS BE SUBSIDIZING THEIR COMPETITORS?

A. No. As long as the retail rate remains below cost, competitors will receive no subsidy. While the wholesale rate does fall below the ILEC's TSLRIC of providing the wholesale service under the proposed avoided cost approach, the entire subsidy flows through to final consumers as a consequence of the equally subsidized retail rates. That is, with the wholesale discount set equal to the correctly defined avoided costs, the wholesale rate is subsidized only to the extent the retail rate is also subsidized. As a result, the ILEC's resale competitors receive no subsidy under this policy.

Q. WILL THE AVOIDED COST PRICING RULE YIELD EFFICIENT OUTCOMES IN THE PRESENCE OF UNEQUAL INTERCONNECTION AND PROVISIONING ARRANGEMENTS?

A. It will not achieve efficiency under these circumstances unless an appropriate adjustment is made. To this point, I have implicitly assumed that the wholesale services purchased by resellers are completely equivalent to the retail services provided by the ILEC in all relevant respects. In other words, I have assumed that the quality, timeliness of delivery, etc. are identical. That assumption, however, is extremely unlikely to hold in local exchange markets during the transition to competition. Rather, as this transition unfolds, it is virtually inevitable that the interconnection and provisioning arrangements provided to resellers will be inferior in myriad respects.

In the presence of such inferior resale arrangements, a routine application of the avoided cost pricing rule will fail to provide efficient entry signals. Specifically, if resellers attempting to enter local exchange markets cannot receive and process customers' orders in a convenient and timely manner and provide services that are equal in quality to that provided by the ILEC, then even perfectly efficient wholesale discounts will fail to promote efficient entry. Under competitive conditions, one simply cannot market successfully an inferior product at an equal price.

Q. DOES THE NEW ACT RECOGNIZE THIS NEED FOR EQUAL INTERCONNECTION AND PROVISIONING ARRANGEMENTS?

A. Yes. Recognizing this problem, Congress incorporated a provision requiring the ILECs to provide equal interconnection to their competitors. Specifically, Section

25 l(c)(2)(C) of the Act requires ILECs to provide interconnection

> "that is at least equal in quality to that provided by the local exchange carrier to itself or to any subsidiary, affiliate, or any other party to which the carrier provides interconnections."

Despite this legislative requirement, however, various non-price strategic actions available to the ILECs make the likelihood of fully equal interconnection and provisioning services extremely remote at this point. As a practical matter, virtually any anti-competitive end achievable through manipulation of input and/or output prices can also be achieved through some sort of non-price strategy.[xxvi/] As the Rochester experiment and numerous other examples have already made clear, new entrants into local exchange markets will face a host of non-price exclusionary tactics.[xxvii/] Even the best efforts of the most conscientious regulators will prove inadequate to prevent them. Indeed, the impossibility of successfully enforcing equal interconnection to the bottleneck facilities of a vertically integrated monopoly was the primary justification for the 1984 divestiture. The avenues through which ILECs can impede the ability of competitors to successfully reach their end customers are simply too numerous, complex, and subtle for legislators to foresee and regulators to police.

Q. AS WITH TSLRIC PRICING OF INPUTS, IMPLEMENTATION OF THE AVOIDED COST PRICING RULE REQUIRES EMPIRICAL ESTIMATES OF THE RELEVANT COSTS--HERE, THE AVOIDED COSTS. ARE SUCH COST ESTIMATES AVAILABLE?

A. In an effort to calculate the ILECs' "costs that will be avoided" as a consequence of providing services at wholesale rather than retail, AT&T has developed a retail cost model. This model is described in more detail in AT&T Witness. Art Lerma's testimony. The purpose of the model is to account properly for the retail-level costs that will be avoided in the long run as an ILEC adjusts its operations to provide wholesale services. The model estimates the costs that are incurred (or not) as a consequence of participation at the retail level. The cost estimations provided by the model represent a sound approximation to the theoretically proper standard for establishing a discount that is dictated by the avoided cost pricing rule.

V. NON-PRICE COMPETITIVE ISSUES

Q. WHY ARE NON-PRICE COMPETITIVE ISSUES RELEVANT TO THIS ARBITRATION PROCEEDING?

A. As noted above, successful resolution of pricing issues will be in vain unless myriad other non-price terms of sale are also made conducive to entry. Neither resellers of wholesale services nor firms purchasing unbundled network elements will be able to enter local exchange markets successfully if the ILECs are able to discriminate in the quality and timeliness of the interconnection and provisioning services they supply to their competitors.

In fact, in situations where input prices have been set at competitive levels, the incentive to discriminate on non-price terms is heightened. Through provision of

inferior or untimely interconnection and provisioning services, ILECs can sustain their extant monopoly power against the threat of entry. Consequently, the Florida Commission needs to devote at least as much attention to non-price competitive issues as it does to the pricing issues discussed above.

Q. PLEASE EXPLAIN HOW GTE CAN UTILIZE NON-PRICE TERMS OF SALE TO EXCLUDE COMPETITORS FROM ITS MARKETS.

A. The exclusionary effects achievable by manipulating the non-price terms of sale can be easily explained by analogy to a vertical price-cost squeeze. Under a vertical price squeeze, competitors are either denied entry and/or forced to exit by pricing inputs above costs while holding output (retail) prices relatively low, thereby eliminating the possibility of profitable production at the downstream stage.[xxviii/]

The success of this strategy obviously hinges upon the impact of higher input prices on competitors' costs. But raising input prices is only one of many strategies capable of raising rivals' costs.[xxix/] For example, an ILEC may require competitors to interconnect at a particular point or adopt a specific interconnection arrangement that prevents these firms from making efficient use of their existing or planned networks. Any number of other non-price terms of sale can have a similar cost-increasing effect. Therefore, raising rivals' costs through the provision of unfavorable non-price terms of sale can have precisely the same exclusionary effects as a vertical price-cost squeeze.

Q. WHAT SORTS OF NON-PRICE ISSUES ARE LIKELY TO ARISE DURING

THE ARBITRATION PROCESS?

A. Two broad types of non-price competitive issues are likely to emerge. First, and most obvious, technical interconnection and provisioning issues -- such as number portability, dialing parity, and service ordering capabilities -- will be confronted. Due to strategic actions (and non-actions) undertaken by the ILECs, the inputs supplied to entrants are likely to be physically inferior to the inputs supplied by the ILECs to themselves. Regardless of the source, such inferiority will hamper the entry process and delay the advent of competition.

Second, it must be recognized throughout the arbitration process that no monopolist can ever be expected to voluntarily negotiate contracts that facilitate entry into its own market.[xxx/] Under normal competitive contracting, both parties to the negotiation have something to gain. Both parties are willing participants in the negotiation process, and both are anxious to reach an agreement so that the gains from trade can be realized. Under monopoly conditions, however, where one party is attempting to negotiate the terms of supply of inputs that are needed to enter the other party's monopolized market, such mutual benefits are not present. The monopolist simply has nothing to gain and much to lose from an agreement that successfully facilitates entry and, thereby, erodes its monopoly power.

As a result, the Florida Commission must recognize that: (1) GTE has a strong economic incentive to exclude competitors from its market; and (2) such exclusion may be accomplished by [a] refusal to provide interconnection or other inputs needed for successful entry, [b] establishment of non-competitive prices for such

inputs, [c] provision of inferior interconnection, provisioning, or other inputs, and [d] refusal to negotiate contractual provisions reasonably required by new entrants. Close attention must be devoted to all sources of exclusionary effects if competition in local exchange markets is to develop.

Q. CAN YOU PROVIDE A HYPOTHETICAL EXAMPLE TO EXPLAIN THE ECONOMIC EQUIVALENCE OF THE ALTERNATIVE EXCLUSIONARY STRATEGIES YOU HAVE IDENTIFIED?

A. Yes. Suppose a firm is considering entry into a local exchange market. Such entry requires that firm to obtain interconnection service from the ILEC in order to terminate its customers' calls within the local calling area. The ILEC, in turn, has an economic incentive to foreclose such entry in order to maintain its monopoly position. Such foreclosure may be achieved through any of the four alternative strategies identified below.

First, the ILEC may simply refuse to provide the necessary interconnection service. Because local exchange entry cannot succeed without interconnection to the local network, such a refusal to deal obviously will prevent entry at the retail stage from occurring.

Second, the ILEC may agree to supply the interconnection service but set the price of that service at a prohibitively high level. By setting the interconnection rate in excess of the TSLRIC of providing the interconnection service, a vertical price-cost squeeze can be created that will prevent entry from occurring.

Third, suppose that, in conformity with the requirements of the Telecommunications Act, the ILEC agrees to provide the interconnection service and that regulators set the price of that service equal to its TSLRIC. The same exclusionary effect may still be achieved by providing entrants technically inferior interconnection arrangements, late delivery of promised services or other non-price deficiencies. These actions would raise new entrants' costs by preventing them from making efficient use of their networks. Again, these increased costs have the effect of foreclosing entry.

Finally, suppose the ILEC is required to provide fully equal interconnection at TSLRIC prices. Does this exhaust the avenues through which exclusion of competitors may be achieved? No. Even with equal interconnection provided at efficient prices, entrants can be prevented from entering the market by refusing to provide contractual terms that will make entry commercially feasible. For example, the ILEC may require a long-term commitment that the entrant is unwilling to make. It may refuse to provide quality commitments or penalty clauses that the entrant needs to reduce its risks of nonperformance by the ILEC. By presenting unacceptable contractual provisions and/or by refusing to supply needed provisions, the ILEC can increase the risks (and, therefore, the costs) of entering the market.

All four strategies have economically equivalent effects. They all can be used to exclude competitors from local exchange markets. The Commission will need to be alert to all four sources of exclusionary effects during the course of the arbitration process.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THIS COMMISSION'S ACTIONS ON THESE NON-PRICE COMPETITIVE ISSUES?

A. In my opinion, the Commission should: (1) strictly enforce the flexible and equal (non-discriminatory) interconnection provisions of the Act and institute explicit penalties for failure to perform (including the additional wholesale discount discussed above); and (2) arbitrate contractual provisions, requiring GTE to meet reasonable requests for individualized terms and, again, incorporate explicit provisions containing penalties for non-performance. Such actions, in combination with the pricing recommendations I made earlier in this testimony, will be necessary if the ILECs' hold on local exchange markets is to be broken and the powerful forces of competition are to be unleashed.

Q. HAVE YOU HAD AN OPPORTUNITY TO REVIEW THE AUGUST 8TH FCC ORDER INTERPRETING SECTIONS 251 AND 252 OF THE ACT?

A. I have conducted a preliminary review of that order.

Q. WHAT ARE YOUR INITIAL IMPRESSIONS REGARDING THE ECONOMIC RECOMMENDATIONS CONTAINED IN THAT ORDER RELATIVE TO THE RECOMMENDATIONS CONTAINED IN YOUR TESTIMONY?

A. The economic principles espoused in the FCC Order appear to be in general

agreement with the pricing and provisioning recommendations I have made here. The Order embraces economic efficiency as the standard for pricing decisions, calling for rates that reflect forward-looking incremental costs that are calculated on a cost-causative basis. It also recognizes the need to address the myriad non-price strategies an ILEC may use to foreclose entry into local exchange markets and the economic incentive for them to do so. In these and many other important respects, the economic recommendations presented in the FCC's Order are in close harmony with the principles and policies I have advanced in this testimony.

VI. SUMMARY

Q. WOULD YOU PLEASE SUMMARIZE YOUR TESTIMONY?

A. Yes. Under the provisions of the Telecommunications Act of 1996, state regulatory commissions are assigned responsibility for arbitrating disputes between ILECs and their potential competitors in situations where voluntary negotiations have failed to produce a mutually-agreeable contract. The fundamental issues involved in this arbitration process are likely to be: (1) the prices charged for ILEC-supplied inputs that entrants will need in order to compete in local exchange markets on a resale basis (interconnection services, unbundled network elements, and wholesale services); and (2) the various non-price terms of sale (both technological and contractual) that will accompany these prices. The outcome of this arbitration process will be critical in determining whether and how soon we have viable competition in local exchange markets. Consequently, state commissions should take their arbitration responsibilities very seriously and should adopt policy

decisions that will move these markets toward competition as expeditiously as possible.

My testimony presents the basic economic principles and specific pricing and provisioning recommendations that will achieve this objective. Specifically, the Florida Commission should: (1) set the prices for interconnection services and unbundled network elements at their respective TSLRICs; (2) set wholesale discounts equal to or, in the presence of unequal interconnection, greater than avoided costs, where such costs include the TSLRICs of the retail stage plus inefficiencies (or fat) and any excess economic profits; and (3) arbitrate equal interconnection and provisioning arrangements and truly non-discriminatory contractual provisions that recognize the different needs of the various companies attempting to enter these markets. And, when in doubt, err on the side of competition.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

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i/ Analogies may be seen in other industries: One example would be the appliance industry: A number of appliance retail stores may sell to Florida consumers the same national brands of refrigerators and other domestic appliances. Although the same products are marketed by each retail store, the consumer may see each store very differently -- based on the retail prices offered, variety and currency of products arrayed on the outlet floor, hours of operation and attentiveness by sales representatives to customers. Competition will produce distinguishable services, even if the basic product is the same.

ii/ Quality of service problems can be expected to become more prevalent under a price cap regime. Quite simply, under price caps, firms profit from cost reductions, and such reductions often may be achieved through the provision of lower quality services. See Timothy J. Brennan, "Regulating by Capping Prices,", Vol. 1 (June 1989), pp. 133-147.

iii/ Marginal cost, long-run incremental cost (LRIC), and total service long-run incremental cost (TSLRIC) all measure the change in the firm's total costs caused by a change in output. In that sense, they are very similar conceptually. The only difference

between them is the magnitude of the change in output contemplated. For marginal cost, the change is infinitesimal. For TSLRIC, the change is the entire output of the service. And for LRIC, the change is finite but less than then the entire output.

iv/ This is one of the most fundamental propositions in economics. For example, Paul Samuelson and William Nordaus write that:

"Only when prices of goods are equal to marginal cost is the economy squeezing from its scarce resources and limited technical knowledge the maximum of outputs." Paul A. Samuelson and William D. Nordaus, Economics. Twelfth edition, McGraw Hill Book Company, 1985, pp. 487-488.

v/ For example, see the discussion in Peter Temin, "Cross-Subsidies in the Telephone Network after Divestiture," Journal of Regulatory Economics, Vol. 2 (December 1990), pp. 349-362.

vi/ On the widespread use of cross-subsidization in regulated pricing structures, see Sam Peltzman, "Toward a More General Theory of Regulation," Journal of Law and Economics, Vol. 19 (August 1976), pp. 211-240. For an explanation of the popularity of such pricing structures among regulators, see T. Randolph Beard and Henry Thompson, "Efficient versus 'Popular' Tariffs for Regulated Monopolies," Journal of Business, Vol. 69, No. 1 (January 1996), pp. 75-87.

vii/ For the purposes of my testimony, interconnection services include the switching, transport and termination of local calls originating on one local carriers' network and terminating on another carriers' network. Unbundled network elements refer to existing local network facilities controlled by the ILEC, such as the local loop, local switch, signal processing and transport functions, that are needed by the new entrant to provide local telephone services.

viii/ TSLRIC measures the total incremental cost incurred in the long run that is caused by the addition (or deletion) of a service or element from an existing set of services or elements. Technically, the prices are set equal to the TSLRIC (which is a total dollar amount) divided by the number of units to be sold, so that prices are stated as dollars per unit.

ix/ These reasons are discussed more fully in the Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig attached to the "Comments of AT&T Corp." in CC Docket No. 96-98, May 16, 1996.

x/ Other constraints, such as uniform prices and normal profits, may be imposed as well. Indeed, the well-known concept of Ramsey prices is derived from precisely this sort of constrained optimization problem. See William J. Baumol and David F. Bradford, "Optimal Departures From Marginal Cost Pricing," American Economic Review, Vol. 60 (June 1970), pp. 265-283.

xi/ The social welfare benefits of implementing prices that achieve this result are likely to dominate any benefits that might possibly be derived from a set of alternative prices that solve the more traditional optimization problem under assumed static monopoly conditions. Therefore, promoting competition is entirely consistent with maximization of social welfare.

xii/ Which is, of course, why input prices that exceed TSLRIC artificially reduce the speed at which local exchange markets are transformed from monopoly to competition.

xiii Common costs are those costs which are required to provide a group of services, but which do not vary with the quantity of the individual services produced. As such, they are not causally attributed to a particular service or the level of a service. Embedded costs (or stranded investments) reflect items for which costs have been incurred in the past and recorded in a firms' accounting records, but which are not caused by current or future

production of services.

xiv/ See Richard Shin and John S. Ying, "Unnatural Monopolies in Local Telephone," RAND Journal of Economics, Vol. 23 (Summer 1992), pp. 171-183.

xv/ Indeed, price mark-ups on interconnection services and unbundled elements have precisely the same economic consequence as the imposition of taxes on these intermediate inputs. But the distortionary effects associated with taxation of inputs are well-known. See Peter A. Diamond and James A. Mirrlees, "Optimal Taxation and Public Production I: Production Efficiency," American Economic Review, Vol. 61 (March 1971), pp. 8-27. On page 24 of this paper, these authors explain that:

> Therefore the optimal tax structure includes no intermediate good taxes, since these would prevent efficiency . . . . In the absence of profits, taxation of intermediate goods must be reflected in changes in final good prices. Therefore, the revenue could have been collected by final good taxation, causing no greater change in final good prices and avoiding production inefficiency.

xvi/ William Baumol, Janusz Ordover, and Robert Willig have recently written that:

> We understand that the portion of forward-looking costs that is unattributable to particular network elements is likely to be small. The aggregated categories of network elements generally comprise discrete physical facilities -- loop, switching, transport, and signaling. Economies of scope, or cost subadditivities, among these categories are likely to be minimal or nonexistent.

Supra, footnote 9.

xvii/ Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591, 601 (1944).

xviii Where appropriate ILEC-specific cost data are not available, the Hatfield Model is also a useful methodology for estimating TSLRIC.

xix/ I will discuss some of these exclusionary strategies below.

xx/ If economic profits are negative, the service is receiving a subsidy and this component should be set equal to zero. I will address this case in more detail below.

xxi/ By "efficient outcomes" I mean that the resulting wholesale rate will support efficient entry but deny inefficient entry, where "efficient entry" means entry by firms that are able to perform the retail function at costs that are equal to or less than the ILEC's costs.

xxii/ In this particular case, the avoided cost pricing rule yields outcomes that are precisely equal to those of the so-called Efficient Component Pricing Rule (ECPR). That is, both yield desirable economic efficiency and competition-enabling properties. This correspondence of results between these two pricing rules, however is not general. Moreover, the general inapplicability of the ECPR to pricing in the telecommunications industry has recently been pointed out by the developers of the ECPR concept. See Affidavit of William J. Baumol, Jarusz Ordover, and Robert D. Willig, supra, Note 6. See also, the recent substantive critiques of the ECPR by Nicholas Economides and Lawrence J. White, "Access and Interconnection Pricing. How Efficient Is the 'Efficient Component Pricing Rule'?" Antitrust Bulletin, Vol. 40 (Fall 1995), pp. 557-579; and William B. Tye and Carlos Lapuerta, "The Economics of Pricing Network Interconnection; Theory and Application to the Market for Telecommunications in New Zealand," Yale Journal on Regulation, Volume 13 (Summer 1996), pp. 419-500.

xxiii/ Note that the $9 discount along with the retail price of $16 can encourage entry by

firms that have incremental costs that exceed those of a fully efficient provider of the retail service (i.e., the TSLRIC at the retail stage which, here, is $5). Nonetheless, the rule only encourages entry by firms that are at least as (or more) efficient than the ILEC. Moreover, even inefficient entry will tend to move retail prices closer to competitive levels in the presence of monopoly. See Economides and White, ibid.

xxiv/ Relaxation of this assumption would not alter the conclusions of this analysis.

xxv/ The ILEC will continue to incur the $2 in negative profits as long as the retail price remains at the $10 subsidized level even if it ceases to perform the retail function. As I explain below, the only way to foster resale entry in the presence of the subsidy is to shift that subsidy to the wholesale rate. When that is done, the $2 loss is merely transferred to the wholesale service and, therefore, is not avoided. If the subsidy is not shifted to the wholesale stage, resale entry will not occur. The ILEC, then, will continue to perform the retail function and will continue to bear the $2 loss. Therefore, negative profits are not an avoided cost.

xxvi/ The provision of discriminatory or unequal interconnection can be seen as a strategy to raise rivals' costs. See S. Salop and D. Scheffman, "Raising Rivals' Costs," American Economic Review, Vol. 73 (May 1983), pp. 267-281.

xxvii/ See Mike Mills, "The Front Line for Phone Lines: Bell Atlantic Has Been 'Fighting Tooth and Nail' to Beat Back Competition," Washington Post, October 17, 1994, F 1, which reports an instance in which Bell Atlantic refused to allow employees of a competitor to use its restroom facilities. Additional examples of this sort of behavior are described in Leslie Cauley, "Calls Waiting: Rivals are Hung Up on Baby Bells' Control Over Local Markets," Wall Street Journal, Tuesday, October 24, 1995, pp. A1, A6. Moreover, strategic use of discriminatory interconnection to support monopolization is not new in the telecommunications industry. For an historical discussion of such practices, see David F. Weiman and Richard C. Levin, "Preying for Monopoly? The Case of Southern Bell Telephone Company, 1894-1912," Journal of Political Economy, Vol. 102 (1994), pp. 103-126.

xxviii/ It is important to note that, for a price-cost squeeze to be effective, the retail price need not be below the overall cost of providing the service as long as the input price is sufficiently above cost. Competitors will be foreclosed if the spread between the retail price and the input price falls short of the incremental cost of producing the retail portion of the overall service.

xxix/ See Salop and Scheffman, supra, Note 26.

xxx/ Indeed, if buyers could successfully negotiate competitive prices from a monopolist, there would be no need for regulation or antitrust laws.

REBUTTAL TESTIMONY OF

DAVID L. KASERMAN

ON BEHALF OF AT&T COMMUNICATIONS

OF THE SOUTHERN STATES, INC.

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

Docket No. 960847-TP

Filed: September 24, 1996

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is David L. Kaserman. My business address is the Department of Economics, College of Business, 415 West Magnolia -- Room 203, Auburn University, Auburn, Alabama, 36849-5242.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A. Yes. I filed direct testimony on August 16, 1996.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to respond to economic arguments and analyses presented by Dr. David Sibley in his Direct Testimony, filed on behalf of GTE Florida Incorporated, Docket No. 960847-TP.

Q. DO YOU AGREE WITH THE BULK OF THE ANALYSIS PRESENTED BY DR. SIBLEY?

A. I do not.

Q. WHAT IS THE BASIS OF YOUR DISAGREEMENTS WITH DR. SIBLEY?

A. The bases of my disagreement are both fundamental and particular. Dr. Sibley and I hold quite different views on the nature of competition in local exchange markets, and on the prospects for, and policies to promote, future competition in these markets. As a result of these fundamental disagreements, we further disagree on the proper regulatory policies and pricing rules to promote competition and efficiency.

Q. PLEASE EXPLAIN HOW YOUR VIEWS AND DR. SIBLEY'S VIEWS DIFFER ON THESE FUNDAMENTALS.

A. The first fundamental difference concerns the purposes and intent of the Telecommunications Act of 1996 (hereafter, the "Act"). Dr. Sibley's testimony suggests that he views the Act as having, as a primary goal, a guarantee that incumbent local exchange carriers (hereafter ILECs) are indemnified against losses arising out of competitive entry into local exchange markets. Numerous references throughout Dr. Sibley's testimony attest to the primary importance he attaches to this purposes. For example, he suggests that, "These arbitrations can affect the financial viability of GET and every state's incumbent local exchange carriers. That issue, in turn, will have profound ramifications for the consumers of the state."[1] Later, he states, "...if prices are not appropriately set..., that will impair GTE's financial integrity. This will starve the local telecommunications network of future investments."[2] Dr. Sibley summarizes by stating that, "...many of the benefits that should accrue to all citizens from robust, fair competition will be eroded if GTE and other local exchange carriers are so weakened that they are unable to compete effectively with those companies entering the marketplace."[3] These sentiments

suggest that Dr. Sibley sees a close, causal connection between the financial well being of the ILEC and the welfare of consumers. Any such connection, however, is severed by competition.

Dr. Sibley's views on the importance of ILEC recovery of historic costs also illustrate his assumption that incumbent firm welfare is a paramount purpose of the Act. Dr. Sibley claims that, "...GTE should be reimbursed for all its costs and be allowed the opportunity to earn a reasonable rate of return..."[4] If GTE is reimbursed for "all its costs," it doesn't need an "opportunity" to earn a reasonable return, it is guaranteed one.

Protecting GTE's returns, which amounts to protecting GTE from competition, is wholly inconsistent with protecting competition. In my view, the primary purpose of the Act is the introduction of competition and the benefits it brings to local telecommunications markets. The promotion of efficient and sustainable competition in local exchange markets, however, requires control of the substantial monopoly power enjoyed by ILECs. Entry will, and is intended to , erode this dominant position. Introducing competition to eliminate monopoly is not consistent with indemnifying the incumbent monopolist against competitive "harm."

Dr. Sibley and I also disagree over the current state of competition in local telecommunications markets. Dr. Sibley's testimony repeatedly suggests that the incumbent enjoys little or no market power, and that good alternatives available in markets imply no bottleneck facilities. I do not agree with this characterization: the ILEC has substantial market power in many areas and, barring some unforeseen

technological miracle, will continue in a dominant position for some years.

Dr. Sibley and I also disagree over the nature of costs of many local exchange services. Dr. Sibley's discussion of the noncompensatory nature of TELRIC pricing suggests that he believes that natural monopoly conditions arising, for example, form common costs, obtain in these markets, even for the provision of unbundled network elements (hereafter UNEs). This position is hard to understand given his frequent assertions that local exchange markets already exhibit substantial competitive forces. In effect, he is arguing that this market is both competitive and a natural monopoly. He can't have it both ways.

Finally, Dr. Sibley and I do not agree on the role competition in local markets will play in the future. Dr. Sibley suggests that competition, particularly the prices available from competing suppliers, provide dynamic efficiency for applications of his version of the Efficient Components Pricing Rule (hereafter ECPR, referred to by Dr. Sibley as the M-ECPR) to pricing unbundled elements and wholesale services. I believe that fostering competition is, itself, the main issue being addressed in this arbitration. The amount of competition and the competitive benefits local markets in Florida will exhibit in the future depends critically on the outcome of this arbitration. The purpose of competition is not to improve flawed pricing rules, rather, the purpose of pricing rules is to foster competition.

Q. DO THESE FUNDAMENTAL DIFFERENCES LEAD YOU TO RECOMMEND THAT THE COMMISSION ADOPT POLICIES DIFFERENT FROM THOSE RECOMMENDED BY DR. SIBLEY?

A. Yes. My understanding of the purpose of the Act, and my views on the nature of costs and competition in local exchange markets in Florida, lead me to conclude that prices for wholesale services and unbundled network elements (UNEs) should be based on long run incremental costs in the manner outlined in my Direct testimony. Dr. Sibley argues in favor of a version of the ECPR that is flawed due to a misidentification of private with social costs.

This rule purports to efficiently price inputs sold to competitors using the ILEC rate structure, as is, to assign common costs in much the same manner as Fully Distributed Cost (hereafter FDC) pricing. Although Dr. Sibley acknowledges that the current rate structure is not economically efficient, he proposes a rule to price inputs based upon it. Pricing UNEs at TELRIC, in contrast, is economically efficient in the strict sense.

As a result, of our fundamental disagreements, Dr. Sibley and I also differ over many other specific policy issues discussed in his direct testimony. Due to the length and complexity of Dr. Sibley's testimony and the included report, Exhibit No. DSS-2 by Michael Duane, J. Gregory Sidak, Daniel F. Spulber, Michael A. Williams, and David S. Sibley, I will address only the most important points of disagreement in my testimony below.

Q. TO WHAT EXTENT SHOULD GTE FLORIDA BE DEREGULATED PRIOR TO FACING COMPETITION FROM NEW ENTRANTS INTO LOCAL EXCHANGES MARKETS?

A. Contrary to Dr. Sibley's suggestions, substantial deregulation of GTE prior to

meaningful competitive entry is a case of "putting the cart before the horse." The purpose of the transitional regulation envisioned by the Act is to protect consumers from monopoly prices while protecting competition from the very real threat of exclusionary actions by GTE. These threats will ultimately be eliminated by competition. Until that day arrives, however, continued regulation of ILEC prices will be necessary in order to protect both consumers and competition. Thus, obtaining some measure of competitive rivalry should be precondition to the substantial deregulatory moves suggested by Dr. Sibley.

Q. ARE THE PROPOSALS PUT FORTH BY AT&T IN THIS ARBITRATION DESIGNED TO PROVIDE AT&T WITH A UNIQUELY FAVORABLE COMPETITIVE POSITION?

A. No, the cannot be. The non-discrimination provisions of the Act require that any contractual terms obtained by AT&T by negotiation or arbitration must be available to all firms entering the local exchange market. As a result, any favorable contractual provisions obtained by AT&T will be available to its competitors in this market. Such availability, in turn, ensures that the benefits of these provisions will flow through to consumers as competing firms vie for their business.

Q. IS THE VERSION OF THE EFFICIENT COMPONENTS PRICING RULE PROPOSED BY DR. SIBLEY THE BEST METHODOLOGY FOR ENCOURAGING COMPETITION IN LOCAL EXCHANGE MARKETS AS OUTLINED IN THE ACT?

A. No. Dr. Sibley proposes a slightly modified version of the ECPR which retains many of the flaws of the formulation rejected by the FCC earlier. Dr. Sibley's proposal

modifies the previous version by capping the opportunity costs component by a "market constraint" representing alternative competitive supply prices or stand alone costs. This modification eliminates only the most egregious outcomes in the practical application of this rule. The basic flaws still remain.

Dr. Sibley proposes that opportunity costs incurred by the ILEC be calculated as foregone net revenue contributions from lost sales (in the absence of a market alternative) given the current regulated pricing structure. Given the distortions contained in that pricing structure, which are cited by Dr. Sibley, it seems incredible to call the resulting prices "efficient." Certainly the prices calculated by this methodology are not designed to foster competition in compliance with the Act.

The issues of which prices for network inputs are efficient versus which prices are compensatory are entirely different. Marginal cost pricing is efficient whether it is compensatory or not. Further, it is compensatory under the cost conditions at issue in many cases here. The non-compensatory aspect of marginal cost (TELRIC or TSLRIC) pricing arises only under natural monopoly conditions of substantial economies of resale or scope.

Q. WILL THE "MARKET" DERIVED LIMITATION PLACED ON THE OPPORTUNITY COST COMPONENT OF NETWORK INPUT PRICES EFFECTIVELY REDUCE THESE PRICES BELOW THOSE PREVIOUSLY REJECTED BY CRITICS OF THE ECPR?

A. No. Use of "competitive" market prices, when available, represents no restriction beyond that inherent in the unwillingness of buyers to pay higher prices for goods

available elsewhere for less. The stand alone cost (SAC) limitation, previously imposed by the FCC, would be rendered meaningless by the extraordinarily high levels of allegedly forward looking common costs (FLCC) proposed by GTE Florida. FLCC of $769 millions, calculated based on GTE revenues, guarantee implied levels of stand alone costs that will preclude competitive entry and perpetuate the GTE monopoly.

Q. IS THE METHOD FOR CALCULATING FORWARD LOOKING COMMON COSTS PROPOSED BY DR. SIBLEY CORRECT?

A. No, it is not. Dr. Sibley suggests that, as a consequence of regulation of GTEs' rates, current GTE revenues can serve as a basis for inferring GTE's common costs. This proposition has no support in economic theory. Firm costs arise from efficient utilization of technologies used to deliver telecommunications services and the like. Firm revenues reflect regulatory initiatives, lack competition, and blind chance. Thus, revenues area totally incorrect basis for calculating costs.

Q. IS DR. SIBLEY'S PROPOSAL TO USE THE BUNDLED RATE FOR TOLL AND LOCAL SERVICE AS THE BASIS FOR CALCULATING THE LOCAL SERVICE DISCOUNT CORRECT?

A. No. This proposal well illustrates the defective application of Dr. Sibley's version of ECPR for calculating discounts. Dr. Sibley suggests that the substantial margins earned on intraLATA toll be applied as part of the ILEC's "opportunity cost" even when the entrant self provides toll service. This proposal is indefensible on any grounds (other than maintaining GTE's monopoly).

Q. DR. SIBLEY PROPOUNDS GTE'S CLAIM THAT THE COMMON COSTS OF UNBUNDLED NETWORK ELEMENTS ARE "SUBSTANTIAL NOT ONLY IN ABSOLUTE MAGNITUDE, BUT ALSO AS A PERCENTAGE OF GTE'S TOTAL COSTS"[5] IS THIS CORRECT?

A. Absolutely not. The common costs of UNEs are small, as recognized by the FCC and many others. GTE's alleged "common costs" appear to be associated primarily with vertical and other retail services, not unbundled elements. The claim of high common costs for UNEs is designed to support monopoly pricing of these competitively crucial elements to forestall entry in opposition to the intent of the Act.

Q. DO YOU PURPOSE COULD GTE HAVE IN PROPOSING PRICES FOR UNES AND WHOLESALE SERVICES THAT EXCEED EFFICIENT LEVELS?

A. Two purposes are evident. First, these inputs constitute monopoly-supplied products creating a strong profit motive to inflate their prices. Second, higher prices reduce competition by preventing entry and thus maintaining the dominant position of GTE. Thus, GTE has very strong economic incentives to raise these prices above their efficient levels.

Q. DR. SIBLEY SUGGESTS THAT HIS "COMPETITIVE CAPS" APPLIED TO THE ECPR DUPLICATE MARKET PERFORMANCE WITH VOLUNTARY EXCHANGE. IS THIS CORRECT?

A. GTE has a monopoly position. Is it reasonable to believe that voluntary exchanges between a monopolist and a potential entrant will lead to competitive outcomes? Dr. Sibley states that the emergence of competition will, under his proposed pricing rule,

bring some prices down. Can prices that competition will reduce be competitive to begin with? This is actually an admission that the ECPR will not yield competitive performance, but will instead, produce prices in excess of competitive levels.

Q. IS THE ECPR, OR DR. SIBLEY'S PROPOSED VARIANT OF THIS RULE, GENERALLY ACCEPTED BY ECONOMISTS?

A. No. The rule on which Dr. Sibley's proposal is based has been rejected by its creators and criticized by many leading economists. Drs. Economides and White point out that, "[T]he ECPR also protects the monopolist from any competitive challenge by these rivals and thus protects the monopolist's profits; and the ECPR preserves the allocative or consumption inefficiency that results from the monopolist's excessively high price for the through service."[6] (p.564) Dr. Baumol's views on the applicability of ECPR to pricing of telecommunications services are also well-documented.[7]

Although Dr. Sibley proposes a modified form of this rule, his suggestion does not represent any improvement over the previously rejected version when one takes account of the very large "common costs" he suggests apply in this case. Dr. Sibley argues for over three quarters of a billion dollars in common costs and further suggests that, due to competitive supply in switches, these costs will be assigned primarily to loops. This renders competitive entry nearly impossible. Using Dr. Sibley's methodology, the stand alone costs of loops and some other UNEs will be prohibitive. Consequently, Dr. Sibley's application of the ECPR will amount to monopoly pricing.

Although Dr. Sibley suggests that Professor Baumol did not repudiate Dr. Sibley's

version of ECPR, the record clearly indicates that Dr. Baumol is not in agreement with Dr. Sibley's application here. In particular, Dr. Baumol states that,

> "Intuition, and available forward-looking engineering costs studies, indicate that for a logical aggregation of network elements, SAC [stand-alone cost] does not differ significantly from long run incremental cost because there are no significant common or shared costs, among groups of network elements. This is because those aggregative categories of network elements generally comprise discrete physical facilities--e.g., loop, switching, transport and signalling."[8] [Emphasis added.]

Further, Dr. Baumol suggests that, "We understand that the costs incurred in common between network elements and retail services are de minimis."[9] Thus, I do not think that Drs. Baumol and Willig would agree with Dr. Sibley's proposals.

Q. IN ADDITION TO A VARIANT OF THE ECPR, DR. SIBLEY RECOMMENDS END USER CHARGES TO FACILITATE RECOVERY OF GTE COSTS THAT ARE NOT RECOVERED BY ECPR PRICING. IS THIS ANALYSIS VALID?

A. No. There are several problems with this proposal. First, the nature and application of this fee are unclear. Second, some of the costs outlined by Dr. Sibley are included under TELRIC based pricing. For example, the costs incurred by GTE to accomplish unbundling of network elements or resale of network services are included in TELRIC and avoided cost components. Dr. Sibley's proposal to compensate GTE for losses incurred when "avoided costs are incorrectly overstated" raises the question of

whether GTE will be penalized when and if they gain from understated avoided costs. Shared costs of network operation and common costs of network operation are recoverable under the TELRIC + X formula, while Universal Service reform, now under review will address the other "incumbent burdens" listed by Dr. Sibley.

Q. DR. SIBLEY CRITICIZES TSLRIC OR TELRIC PRICING ON NUMEROUS GROUNDS. DO YOU AGREE WITH THESE CRITICISMS?

A. No. TSLRIC pricing is unquestionably economically efficient. Rents earned on services sold at supercompetitive prices are not a social opportunity cost, and the preservation of these rents cannot provided the basis of efficient pricing. Cost recovery per se is not the basis of efficiency.

Q. DR. SIBLEY ARGUES THAT TSLRIC PRICING WILL LEAD TO EXCESSIVE UNBUNDLING AT THE CONTRIVANCE OF ENTRANTS. DO YOU AGREE WITH THIS CLAIM?

A. No. Unbundling should occur in response to competitive market forces. Elements should be unbundled when there is a demand for them on the part of potential entrants. Since a TSLRIC pricing methodology would permit the ILEC to recover the costs of unbundling, there is no scope for entrants to persecute the ILEC via this device.

Q. DR. SIBLEY STATES THAT TSLRIC (OR TELRIC) PRICING IS UNLIKE PRICING IN A COMPETITIVE MARKET. IS THIS TRUE?

A. No. Firms that lack market power price at marginal cost by necessity. Contrary to Dr. Sibley's claims, this result does not reside only in simple textbook analyses: the

analysis of Glenn MacDonald and Alan Slivinski provides an example.[10]

Q. DR. SIBLEY STATES THAT A "REGULATORY CONTRACT" REQUIRES THAT THE COMMISSION ALLOW GTE TO FULLY RECOVER ALL OF THEIR COSTS, INCLUDING HISTORICAL COSTS. IS THIS AN ECONOMIC ARGUMENT?

A. No, it is a legal one. I am not a lawyer and offer no legal opinion on this claim. However, the economic analyses of contracting theory offered by Dr. Sibley to support this view is curious. Dr. Sibley suggests that the (possibly largely implicit) contract between the regulator and regulated firm (ILEC) implies full cost recovery. However, even if one accepts this regulatory contract framework, there is no evidence presented, nor theoretical arguments offered, that full and compete indemnification of the regulated firm is a property of the "optimal" regulatory contract. Typically, optimality implies less than full "insurance" in any contract. The views expressed by Dr. Sibley seem to plainly contradict the intentions of the Act, the emergence, at the instigation of GTE, of price cap regulation, and the actual practice of even Rate-0f-Return regulation.

Q. CAN YOU BRIEFLY SUMMARIZE YOUR TESTIMONY?

A. Dr. Sibley and I disagree on several fundamental grounds. I believe that the primary purpose of the Telecommunications Act of 1996 is to foster efficient and sustainable competition in local telecommunications markets, and that this purpose is served by efficient pricing of wholesale services and unbundled network elements to potential entrants. Dr. Sibley appears to regard the maintenance of the financial position of the incumbent monopoly as both consistent with the objectives of the Act and legally

necessary. In pursuit of this objective, Dr. Sibley proposes a form of ECPR pricing that is inconsistent with promoting efficient entry, combined with end user charges designed to recover all of GTEs costs, including historical costs and costs that arise from incumbent inefficiencies. I do not believe that Dr. Sibley's proposals are consistent with either the intent of the Act, nor the welfare of the people of Florida.

Q. DO THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

Docket no. 960980

DIRECT TESTIMONY OF SARAH J. GOODFRIEND

ON BEHALF OF MCI

MCI/GTE ARBITRATION DOCKET

August 26, 1996

I. PERSONAL BACKGROUND

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Sarah J. Goodfriend. My business address is 701 Brazos St., Austin, Texas, 78701.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND AND EXPERIENCE.

A. Since September 1995, I have been employed as an Executive Staff Member in the Regulatory and Public Policy Analysis Section of MCI Telecommunications Corporation in Washington, DC. In this capacity I am responsible for the formulation, development and execution of regulatory strategies and policies to promote local exchange competition.

Before joining MCI, from 1993-1995, I served as a Commissioner with the Public Utility Commission of Texas (PUCT), which regulates franchise utilities providing electric and telecommunications services. As a member of the National Association of Regulated Utility Commissioners (NARUC), I served on the Committee on Communications (1993-1995), the Board of Directors of the National Regulatory Research Institute at Ohio State University (1993-1995) and the Advisory Council of the Center for Public Utilities at New Mexico State University (1995). During this time, I had the opportunity to participate in many regulatory forums as an invited speaker.

These opportunities are detailed in my resume, Exhibit 17 (SJG-1). Prior to my appointment to Commissioner, I served as the Director of the Division of Economic and Regulatory Policy of the PUCT.

Before returning to Texas, I worked for seven years in Washington, DC. From 1987 to 1992, I was employed by the Office of Economic Policy, an advisory office to the Chair of the Federal Energy Regulatory Commission. In this capacity, I developed economic theory to improve regulation of the electric and natural gas industries, as these industries evolved toward more competitive market structures. From 1985 to 1987, after receiving my graduate degree, I was employed by the Bureau of Economics of the Federal Trade Commission (FTC). At the FTC, my work addressed issues of emerging competition and regulatory reform across a variety of industries. I am a graduate of the University of Texas at Austin and received my Ph.D. in Economics from the University of North Carolina at Chapel Hill in 1985.

Q. HAVE YOU TESTIFIED BEFORE?

A. Yes. A list of my testimonies is contained in my resume.

Q. WHAT IS THE BASIS OF YOUR TESTIMONY?

A. MCI assembled a group of seven economists to evaluate the economic issues that need to be addressed by state regulators during the arbitrations under the Telecommunications Act of 1996 ("the 1996 Act"). The seven economists are Gus Ankum, Steven R. Brenner, Richard Cabe, Nina W. Cornell, myself, A. Daniel Kelley, and Terry L. Murray. These economists produced a jointly authored white paper. The testimony that follows is the same as that white paper, except that it has been converted into question-and-answer format.

II. ECONOMIC PRINCIPLES

Q. HOW HAS THE 1996 ACT CHANGED THE WAY TELECOMMUNICATIONS IS TO BE REGULATED IN THE UNITED STATES?

A. The 1996 Act calls for competition to replace regulated monopoly whenever market conditions permit. This is stated most clearly in Section 257(b), which reads:

> NATIONAL POLICY—In carrying out subsection (a), the Commission shall seek to promote the policies and purposes of this Act favoring diversity of media voices, vigorous economic competition, technological advancement, and promotion of the public interest, convenience, and necessity.

Subsection (a) calls for the Federal Communications Commission ("FCC") to complete a proceeding within 15 months of enactment of the 1996 Act to identify and eliminate market barriers to entry.

Q. WHAT ARE THE CURRENT TELECOMMUNICATIONS MARKETS IN WHICH THE INCUMBENT LOCAL EXCHANGE CARRIERS STILL HAVE MARKET POWER OR EVEN A MONOPOLY?

A. Incumbent local exchange carriers (LECs) possess market power, and often monopoly positions, in many local exchange service markets. The First Report and Order issued by the Federal Communications Commission ("FCC") in CC Docket No. 96-98, In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 ("Order") is intended to begin eliminating market barriers to entry, and to establish rules to govern opening entry into local exchange markets.

Q. HAS THE FCC DECIDED ALL OF THE ISSUES THAT NEED TO BE DECIDED BEFORE ENTRY CAN BECOME EFFECTIVE COMPETITION IN LOCAL EXCHANGE MARKETS?

A. No. In that Order, the FCC has decided a number of major issues, but has left others to the states to decide. The issues left to the states are sufficient that the intent of Congress could be thwarted if consistent principles are not used to decide them.

Q. WHAT ARE THE PRINCIPLES THAT THE FCC RELIED ON IN MAKING THE DECISIONS IT MADE?

A. In terms of its economic underpinnings, the FCC's Order rests on six basic premises.

Q. WHAT IS THE FIRST OF THE FCC'S SIX BASIC ECONOMIC PREMISES?

A. The first basic economic premise of the FCC establishes as the fundamental requirement for achieving the goals of the 1996 Act that the incumbent local exchange companies must share with entrants their economies of density, connectivity, and scale. As the FCC said:

> The incumbent LECs have economies of density, connectivity, and scale; traditionally, these have been viewed as creating a natural monopoly. As we pointed out in our NPRM, the local competition provisions of the Act require that these economies be shared with entrants. We believe they should be shared in a way that permits the incumbent LECs to maintain operating efficiency to further fair competition, and to enable the entrants to share the economic benefits of that efficiency in the form of cost-based prices. (Paragraph 11, footnote omitted)

Q. WHAT IS THE SECOND OF THE FCC'S BASIC ECONOMIC PREMISES?

A. The second basic economic premise of the FCC is that nondiscrimination means that the incumbent LECs must not discriminate between an entrant and itself, or between different entrants based on any criterion other than cost differences. As the FCC noted:

> We believe that the term "nondiscriminatory," as used throughout section 251, applies to the terms and conditions an incumbent LEC imposes on third parties as well as on itself. (Paragraph 218)

> Also, incumbent LECs may not discriminate against parties based upon the identity of the carrier (*i.e.*, whether the carrier is a CMRS provider, a CAP, or a competitive LEC). (Paragraph 218)

> Thus, we conclude it would be insufficient to define the obligation of incumbent LECs to provide "nondiscriminatory access" to mean that the quality of the access and unbundled elements LECs provide to all requesting carriers is the same. As discussed above with respect to interconnection, an incumbent LEC could potentially act in a nondiscriminatory manner in providing access or elements to all requesting carriers, while providing preferential access or elements to itself. (Paragraph 312, footnote omitted)

> On the other hand, price differences based not on cost differences but on such considerations as competitive relationships, the technology used by the requesting carrier, the nature of the service the requesting carrier provides, or other factors not reflecting costs, the requirements of the Act, or applicable rules, would be discriminatory and not permissible under the new standard. (Paragraph 861)

Q. WHAT IS THE THIRD BASIC ECONOMIC PREMISE OF THE FCC?

A. The third basic economic premise of the FCC is that telecommunications is an industry with a great deal of technological change, and that its rules should not interfere with the pace or pattern of that change. As the FCC stated:

> The rapid pace and ever changing nature of technological advancement in the telecommunications industry makes it essential that we retain the ability to revise our rules as circumstances change. Otherwise, our rules might impede technological change and frustrate the 1996 Act's overriding goal of bringing the benefits of competition to consumers of local phone services. (Paragraph 246, footnote omitted)

Q. WHAT IS THE FOURTH BASIC ECONOMIC PREMISE OF THE FCC?

A. The fourth basic economic premise of the FCC is that forward-looking economic costs, not embedded costs, should be the basis for pricing interconnection and unbundled elements. As the FCC stated:

> In the following sections, we first set forth generally, based on

> the current record, a cost-based pricing methodology based on forward-looking economic costs, which we conclude is the approach for setting prices that best furthers the goals of the 1996 Act. In dynamic competitive markets, firms take action based not on embedded costs, but on the relationship between market-determined prices and forward-looking economic costs. (Paragraph 620)
>
> 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. (Paragraph 705, footnote omitted)

Q. WHAT IS THE FIFTH BASIC ECONOMIC PREMISE OF THE FCC?

A. The fifth basic economic premise of the FCC is that rates must recover costs in a manner that reflects the way they are incurred. This takes on special significance because rate structures that do not consistently reflect the way forward-looking economic costs are incurred, for example, by imposing nonrecurring charges for recurring costs, may become vehicles for over-recovery of costs, and thus, act as a barrier to entry. The FCC applies this principle, for example, to shared facilities to equitably match, insofar as practical, costs and payments for benefits in time. As the FCC stated:

> ...we find that imposing nonrecurring charges for recurring costs could pose a barrier to entry because these charges may be excessive, reflecting costs that may (1) not actually occur; (2) be incurred later than predicted; (3) not be incurred for as long

as predicted; (4) be incurred at a level that is lower than predicted; (5) be incurred less frequently than predicted; and (6) be discounted to the present using a cost of capital that is too low. (Paragraph 747)

We require, however, that state commissions take steps to ensure that incumbent LECs do not recover nonrecurring costs twice and that nonrecurring charges are imposed equitably among entrants. (Paragraph 750)

A state commission may, for example, decide to permit incumbent LECs to charge the initial entrants the full amount of costs incurred for shared facilities for physical collocation service, even if future entrants may benefit. A state commission may, however, require subsequent entrants, who take physical collocation service in the same central office and receive benefits as a result of costs for shared facilities, to pay the incumbent LEC for their proportionate share of those costs, less depreciation (if an asset is involved). Under this approach, the state commission could require the incumbent LEC to provide the initial entrants *pro rata* refunds, reflecting the full amount of the charges collected from the subsequent entrants. Alternatively, a state commission may decide to permit incumbent LECs to charge initial entrants a proportionate fraction of the costs incurred, based on a reasonable estimate of

> the total demand by entrants for the particular interconnection service or unbundled rate elements. (Paragraph 750)

Q. WHAT IS THE SIXTH BASIC ECONOMIC PREMISE OF THE FCC?

A. The sixth basic economic premise of the FCC is that the incumbent LECs have virtually no incentives to voluntarily provide the various unbundled network elements and interconnection needed by entrants at prices or under the terms and conditions that would make effective competition a reality. Instead, incumbent LECs have both the incentive and the ability—absent regulatory intervention—to force entrants to accept prices, terms, and conditions that would be insufficient to bring consumers the benefits the 1996 Act sought to convey. As the FCC stated:

> Because an incumbent LEC currently serves virtually all subscribers in its local serving area, an incumbent LEC has little economic incentive to assist new entrants in their efforts to secure a greater share of that market. An incumbent LEC also has the ability to act on its incentive to discourage entry and robust competition by not interconnecting its network with the new entrant's network or by insisting on supracompetitive prices or other unreasonable conditions for terminating calls from the entrant's customers to the incumbent LEC's subscribers. (Paragraph 10, footnote omitted)

> Congress recognized that, because of the incumbent LEC's incentives and superior bargaining power, its negotiations with new entrants over the terms of such agreements would be quite

different from typical commercial negotiations. As distinct from bilateral commercial negotiation, the new entrant comes to the table with little or nothing the incumbent LEC needs or wants. The statute addresses this problem by creating an arbitration proceeding in which the new entrant may assert certain rights, including that the incumbent's prices for unbundled network elements must be "just, reasonable and nondiscriminatory." (Paragraph 15, footnote omitted)

We find that incumbent LECs have no economic incentive, independent of the incentives set forth in sections 271 and 274 of the 1996 Act, to provide potential competitors with opportunities to interconnect with and make use of the incumbent LEC's network and services. Negotiations between incumbent LECs and new entrants are not analogous to traditional commercial negotiations in which each party owns or controls something the other party desires. Under section 251, monopoly providers are required to make available their facilities and services to requesting carriers that intend to compete directly with the incumbent LEC for its customers and its control of the local market. Therefore, although the 1996 Act requires incumbent LECs, for example, to provide interconnection and access to unbundled elements on rates, terms, and conditions that are just, reasonable, and nondiscriminatory, incumbent LECs have strong incentives to

> resist such obligations. The inequality of bargaining power between incumbents and new entrants militates in favor of rules that have the effect equalizing bargaining power in part because many new entrants seek to enter national or regional markets. (Paragraph 56)
>
> In particular, a new entrant that has already constructed facilities may have a relatively weak bargaining position because it may be forced to choose either to accept transport and termination rates not in accord with these rules or to delay its commencement of service until the conclusion of the arbitration and state approval process. (Paragraph 1065)

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide an economic analysis of how state regulators should take these same six basic premises into account in addressing the issues that are reserved to state regulators to decide under the FCC's Order. This paper applies these six premises to eight issues: (1) the need for additional unbundled network elements, (2) the need to prevent discriminatory non-price terms and conditions for acquiring unbundled network elements, (3) the need to identify the costs and cost structures of unbundled elements and efficient unbundling, (4) the recurring rates to be charged for unbundled elements, (5) the non-recurring rates to be charged for unbundled network elements, including, in particular, the costs of unbundling that the incumbent LECs should be allowed to charge entrants, (6) the costs and cost structure of transport and termination of local exchange traffic, (7) the compensation rates for transport and

termination, and (8) the desirability of initiating state access reform now.

III. UNBUNDLED NETWORK ELEMENTS

Q. WHAT ARE THE ISSUES THAT STATE REGULATORS MUST DECIDE WITH RESPECT TO UNBUNDLED NETWORK ELEMENTS?

A. There are five issues that state regulators must decide with regard to unbundled elements. The first is whether to order the incumbent LECs to unbundle any elements in addition to the minimum list ordered unbundled by the FCC. The second is to prevent discriminatory nonprice terms and conditions for acquiring unbundled network elements. The third is to identify the costs and cost structures of the unbundled elements themselves and the costs associated with efficient unbundling of a wholesale LEC network. The fourth is to set recurring rates for the unbundled elements, both those on the FCC's list of elements to be unbundled and any additional elements. The fifth is to set the non-recurring rates for ordering unbundled network elements. Both recurring and non- recurring rates must be set to comply with the forward-looking economic costing methodology known as TELRIC (Total Element Long Run Incremental Cost). Both recurring and non-recurring rates must be structured to reflect how costs are incurred.

Q. DO INCUMBENT LOCAL EXCHANGE CARRIERS WANT TO PROVIDE UNBUNDLED NETWORK ELEMENTS IN A MANNER THAT FACILITATES LOCAL EXCHANGE COMPETITION?

A. No. As the FCC stated:

> As discussed above at sections II.A, II.B and V.B, we believe

> that incumbent LECs have little incentive to facilitate the ability of new entrants, including small entities, to compete against them and, thus have little incentive to provision unbundled elements in a manner that would provide efficient competitors with a meaningful opportunity to compete. (Paragraph 307)

Therefore, refusing to provide additional unbundled elements and setting rates above efficient economic costs both can prevent efficient competitors from having "a meaningful opportunity to compete."

A. **Additional Unbundled Network Elements: Loop Distribution Plant**

Q. THE FCC HAS ORDERED THAT A MINIMUM LIST OF UNBUNDLED NETWORK ELEMENTS BE PROVIDED. CAN STATE REGULATORS ADD TO THIS LIST?

A. Yes. The FCC has determined that state regulators can order the incumbent LECs to unbundle more network elements than those on the FCC's minimal list.

Q. SHOULD STATE REGULATORS ADD TO THE FCC'S MINIMUM LIST OF UNBUNDLED NETWORK ELEMENTS?

A. Yes. One additional network element should be added to the list: unbundled distribution, which is a loop subelement. The network implementation white paper accompanying this white paper explains why this additional network element is needed, how it would be used, why it is technically feasible to unbundle, and why, for some period of time, it cannot be provided at an equal or lower cost or in as timely a fashion by (at least) MCImetro as by the incumbent LEC.

Q. WHY SHOULD ANOTHER UNBUNDLED NETWORK ELEMENT BE ADDED TO THE FCC'S MINIMUM LIST?

A. Forcing an entrant to purchase the whole loop even though it has facilities that could be used for a portion of the loop exemplifies an incumbent LEC practice, that, if it were to be sanctioned by a regulator, surely undermines the entrant's "meaningful opportunity to compete" using an architecture which rivals the incumbent's. The FCC provided clear instruction. The FCC identified a "technically feasible" standard and an "impairment" standard to which incumbent LECs should be held when states evaluate unbundling requests beyond the minimal FCC list.

Q. WHAT ARE THE "TECHNICALLY FEASIBLE" AND "IMPAIRMENT" STANDARDS OF THE FCC?

A. The 1996 Act gives entrants the right to have the incumbent LECs unbundle any network element that it is technically feasible to unbundle. According to the FCC:

> We conclude that the term "technically feasible" refers solely to technical or operational concerns, rather than economic, space, or site considerations. We further conclude that the obligations imposed by sections 251(c)(2) and 251(c)(3) include modifications to incumbent LEC facilities to the extent necessary to accommodate interconnection or access to network elements. Specific, significant, and demonstrable network reliability concerns associated with providing interconnection or access at a particular point, however, will be regarded as relevant evidence that interconnection or access at that point is technically infeasible. . . . Finally, we conclude that

> incumbent LECs must prove to the appropriate state commission that a particular interconnection or access point is not technically feasibile [sic]. (Paragraph 198)

The incumbent LECs should be ordered to provide this additional unbundled network element because it is needed to minimize the cost to entrants of competing on a broad scale with the incumbent LECs for local exchange service. In the section of its Order discussing access to unbundled (proprietary) network elements, the FCC provided an economic and competitive interpretation to define the "impairment standard" to which incumbent LECs should be held when states evaluate requests for unbundling beyond the FCC's minimal list. According to the FCC:

> We believe, generally, that an entrant's ability to offer a telecommunications service is "diminished in value" if the quality of the service the entrant can offer, absent access to the requested element, declines and/or the cost of providing the service rises. . . . Accordingly, we interpret the "impairment" standard as requiring the Commission and the states, when evaluating unbundling requirements beyond those identified in our minimum list, to consider whether the failure of an incumbent to provide access to a network element would decrease the quality, or increase the financial or administrative cost or the service a requesting carrier seeks to offer, compared with providing that service over other unbundled elements in the incumbent LEC's network. (Paragraph 285, footnotes omitted)

As the accompanying Network Implementation white paper explains, it is both technically feasible and economically necessary under the standards adopted by the FCC to require incumbent LECs to unbundle Loop Distribution plant.

Q. DID THE FCC ELABORATE ON ITS IMPAIRMENT STANDARD?

A. Yes. The FCC elaborated on its meaning of the impairment standard when it explained further that:

> The interpretation advanced by most of the BOCs and GTE, described above, means that, if a requesting carrier could obtain an element from a source other than the incumbent, then the incumbent need not provide the element. We agree with the reasoning advanced by some of the commenters that this interpretation would nullify section 251(c)(3) [of the 1996 Act] because, in theory, any new entrant could provide all of the elements in the incumbent' networks. Congress made it possible for competitors to enter local markets through the purchase of unbundled elements because it recognized that duplication of an incumbent's network could delay entry, and could be inefficient and unnecessary. (Paragraph 287, footnote omitted)

For me, the significance of the rejection of the incumbents' proposed standard is very clear: Under the Act, no regulator may permit a refusal to unbundle, where technically feasible, to result in the imposition of inefficiencies and unnecessary costs on entrants. Such acquiescence is permission to undermine competition.

B. **Discriminatory Practices: Terms and Conditions of Interconnection**

Q. **IS THE IMPAIRMENT STANDARD THE ONLY STANDARD OR SAFEGUARD CREATED TO PRESERVE EMERGING COMPETITION?**

A. No. The impairment standard is one of a number of standards or safeguards created to preserve emerging competition to its fullest potential. In paragraphs 217 and 218 of its Order, the FCC found that Congress intended a more stringent legal standard of nondiscrimination to apply under the 1996 Act section 251(c)(2) than under section 202(a) of the original Act. On this legal basis and considering the procompetitive purpose of the 1996 Act, the FCC recognized, again, that "... the [incumbent] LEC has the incentive to discriminate against its competitors by providing them less favorable terms and conditions of interconnection than it provides itself..." finding that "by providing interconnection to a competitor in a manner *less efficient* (emphasis added) than an incumbent LEC provides itself, the incumbent LEC violates the duty to be 'just' and 'reasonable' under Section 251(c)(2)(D)...."

Q. **WHAT ARE OTHER WAYS THAT INCUMBENT LECS CAN UNDERMINE THE PROCOMPETITIVE ASPECTS OF NETWORK UNBUNDLING?**

A. Refusals to unbundle and improper pricing of unbundled elements, the main topics of this section, are but two ways incumbent LECs may undermine the procompetitive aspects of network unbundling. The Network Implementation white paper discusses cross-connect points. Cross-connection facilities include the house cabling and jumper cables that make it possible for an entrant's unbundled loop to be connected to its collocation equipment. This "glue" that holds the network together and connects unbundled elements must be priced properly. The pricing of house cabling and jumper

cables can be every bit as important in limiting the incumbent's ability to discriminate in the provision of unbundled elements as is the pricing of the unbundled elements themselves. The FCC pointedly addressed the example of cross-connect facilities to unbundled loops, including the house cabling and jumper cables necessary to allow a competitor to connect an unbundled loop to its collocated equipment, noting that several entrants had alleged that incumbent LECs had required unreasonable rates, terms and conditions for such cross-connection facilities in the past. (See Paragraph 386)

The Operations Support Systems Implementation white paper discusses the various databases to which entrants must have access, and describes the various functions -- pre-ordering, ordering, provisioning, maintenance and repair, and billing -- for which access to operations support systems are necessary. Refusal to provide access to databases efficiently is an expression of discrimination. Terms and conditions of access can become instruments for the creation of barriers to competition.

Similarly, the Ancillary Arrangements And Services Requirements white paper describes seven specific ancillary arrangements or services, and, for each, recommends specific state action needed to reduce barriers to competition.

B. Recurring Rates for Unbundled Network Elements

Q. WHAT IS THE BASIS ON WHICH RECURRING RATES FOR UNBUNDLED NETWORK ELEMENTS ARE TO BE SET?

A. The FCC has adopted a costing and pricing methodology based on forward-looking, economic costs, finding that such a methodology best replicates the conditions of a competitive market and reduces the ability of an incumbent LEC to engage in anticompetitive behavior. (See, for example, paragraph 679). The FCC has said that prices for unbundled network elements (and for interconnection) should "be based on

the TSLRIC (Total Service Long Run Incremental Cost) of the network element[s], which we will call Total Element Long Run Incremental Costs (TELRIC)." (Paragraph 672) The prescribed TELRIC costing methodology is provided in Part 1 of Title 47 of the C.F.R. as Subpart F - Pricing of Elements, and applies to the costing and pricing of network elements, interconnection, and methods of obtaining access to unbundled elements, including physical collocation and virtual collocation. In the following discussion, I use the term "element" to refer to items covered by Subpart F.

1. Requirements for Conformity With the TELRIC Methodology

Q. WHAT IS REQUIRED FOR A STUDY TO CONFORM TO THE TELRIC METHODOLOGY ORDERED BY THE FCC?

A. The cost study methodology ordered by the FCC essentially requires the study to be conducted as though the local exchange carrier was split into two virtually separate subsidiaries: a wholesale subsidiary and a retail subsidiary. The sole purpose of the wholesale subsidiary is to run the network and provide unbundled elements not only to entrants, but also to the retail subsidiary of the incumbent LEC. The methodology also requires that the costs be studied as though only the retail subsidiary puts network elements together to form services sold at retail to end users. According to the FCC:

> Common costs also include costs incurred by a firm's operations as a whole, that are common to all services and elements (e.g., salaries of executives involved overseeing all activities of the business), although for the purpose of pricing interconnection and access to unbundled elements, which are intermediate products offered to competing carriers, the relevant common costs do not include billing, marketing and other costs

attributable to the provision of retail service...(Paragraph 694)

We further conclude that, for the aggregate of all unbundled network elements, incumbent LECs must be given a reasonable opportunity to recover their forward-looking common costs attributable to operating the wholesale network.... (Paragraph 698)

2. States Must Examine Cost Studies to Set Element Prices

Q. **WILL STATE REGULATORS HAVE TO EXAMINE COST STUDIES TO SET RECURRING RATES FOR UNBUNDLED NETWORK ELEMENTS?**

A. Yes. I urge state regulators to begin to examine TELRIC cost studies now, recognizing that the sooner states act to set prices in accordance with required cost studies, the greater certainty all market participants will have. While the default proxies established by the FCC provide some bounds for entry decisions, even use of these proxies will require states to identify the appropriate translation of local loop proxy ceilings into geographically-deaveraged rates. State regulators will have to examine cost studies proposed for this purpose.

If the state regulator adopts a proxy for arbitration purposes, the proxy must be superseded once the state regulator completes its review of cost studies and finds compliance with the FCC rules. Thus, regardless of the way in which the state commission resolves its immediate need to identify prices for interconnection, collocation and unbundled elements, ultimately the commission will be required to closely examine cost studies for compliance with the definitions and procedures set forth in sections 51.505 and 51.511 of the FCC rules.

3. Incumbent LEC Cost Studies

Q. CAN STATE REGULATORS USE EXISTING INCUMBENT LEC COST STUDIES FOR THIS PURPOSE?

A. No. The historical "just trust us" approach of incumbent LECs to cost studies is no longer allowed. The FCC has called for all parties to be able to review cost information and for state regulators to give "full and fair effect to the costing methodology" it adopts. (Paragraph 619) Moreover, the states must take into account that the incumbent LECs have an "asymmetric access to cost data." (Paragraph 680) This gives the incumbent LEC unequal power. Historically the inequality has been between those who would critically evaluate LEC cost studies -- such as the commission staffs and others -- and the incumbent LECs. In paragraph 680, the FCC explains that, because of this asymmetry of power over information, the FCC will require the incumbent LEC to "... prove to the state commission that the rates for each element it offers do not exceed the forward-looking economic cost per unit of providing the element." (Section 51.505(e))

For an economist, this standard of "proof" can be met only if critical analysis of the results of the cost study or model is possible in order to evaluate its reasonableness. In turn, this requires examination so that judgments may be formed about the reasonableness of inputs, outputs and the relationships used to translate inputs into outputs, namely, the foundations and relationships of the "model" itself. In the following section, I provide an example of a dramatic difference in cost claimed for remote call forwarding. The magnitude of difference makes abundantly clear the necessity of evaluating a model for reasonableness to obtain confidence in the results.

Moreover, from the analyst's perspective, the results and summary of methodology of a cost study are, in a sense, only the tip of the iceberg: behind each cost

study are a multitude of workpapers, and behind the workpapers are data sources and assumptions. All of these need to be reasonably explained and subject to examination to be able to determine whether a given cost study accurately reflects the appropriate methodology and accurately estimates costs. Sufficient information must be available so that informed analysis and evaluation is possible.

Historically, LEC cost studies have been "black box" models. By "black box" I mean that the relationships used to translate from inputs to outputs are unavailable to those who would bring engineering and economic judgements to bear and engage in an open dialogue about the proper way to characterize and express cost-causation relationships and the meaning and application of best practice operations and processes in a model.

The lack of openness of incumbent LEC cost studies goes beyond the absence of visible formulas and publicly-available documentation. It extends to issues of what data are used as model or study "inputs." Historically, it has been difficult to assess the reasonableness of LEC input data because it has not been easy or even possible to compare the inputs from one LEC's studies to those used in the studies of another LEC. Thus, apart from certain requirements for reporting uniformity, such as ARMIS filings in compliance with the Uniform System of Accounts, it is not easy to bring together data from different LECs in a form that facilitates comparisons. Extensive use of non-disclosure requirements tends to protect rather than expose atypical or idiosyncratic data and individual states do not typically require LECs to show how their data inputs compare to data inputs used by other incumbent LECs.

The FCC has ruled that incumbent LEC cost studies must comply with the requirements for forward-looking economic cost studies. It is now time for state commissions to pry the lid, once and for all, from the LEC "black box" and expose the

inner workings of all proffered cost models to the light of open debate.

4. The Hatfield Model Complies With the Requirements for Cost Studies

Q. YOU HAVE SAID THAT THE COMMISSION CANNOT USE THE COST STUDIES OF THE INCUMBENT LEC TO SET THE RECURRING RATES FOR UNBUNDLED NETWORK ELEMENTS. IS THERE A COST STUDY THEY CAN USE FOR THIS PURPOSE?

A. Yes. In contrast to the prevailing LEC practice of secrecy is the Hatfield Model, a telecommunications costing model developed by Hatfield Associates, Inc. of Boulder, Colorado at the request of AT&T and MCI. The Hatfield Model (Version 2.2, Release 2) is a model of the costs that an efficient local exchange carrier would incur to provide basic exchange service and unbundled network functions.

The Hatfield Model is a publicly available model that allows users to examine all the model's inputs, algorithms and results to evaluate whether the model produces reasonable estimates of element cost. Some of the inputs the user can directly specify; others are incorporated into the model itself, but both are readily visible to the user. The inner workings of the model are captured by a set of Excel spreadsheets, which can be studied to see exactly how inputs are transformed into outputs, stage-by-stage. Documentation of the model includes descriptions of the model algorithms, inputs and assumptions. The model is open for inspection and analysis. A user may run the model to his or her heart's content to test the sensitivities of the model to changes in inputs. These characteristics of the model make it appropriate to use as a basis for evidentiary findings about the nature and magnitude of forward-looking economic cost. The Hatfield Model (Version 2, Release 2.2) is the current evolution in a series of models

which, finally, have broken the incumbent LEC stranglehold on information necessary to actually engage in the debate required for reasoned decisionmaking in this area.

Q. YOU NOTE THAT THE HATFIELD MODEL IS OPEN FOR INSPECTION AND ANALYSIS. DOES IT MEET THE CRITERIA THE FCC HAS RULED MUST BE MET FOR A TELRIC COST STUDY?

A. Based on a careful reading of the FCC's order and my understanding of the Hatfield Model and its methodology, I believe that the model captures the costs that the FCC requires to be included in the prices of unbundled network elements and interconnection services. I also believe the Hatfield Model conforms more closely to the FCC costing principles than the cost studies of the incumbent LECs with which I am familiar. One way in which most incumbent LEC cost studies do not conform is that they have not followed a TELRIC methodology. The Hatfield Model attempts to identify all of the forward-looking costs that an efficient wholesale-only LEC would incur to produce the entire range of network elements that the FCC's Order requires to be unbundled.

The Hatfield Model estimates cost of individual network elements by first determining the capital requirements for each network element and then adding both the capital-related and non-capital-related expenses for each element. Where plant is used by only a single element, the Hatfield model assigns those costs to that individual element, consistent with the requirements of the FCC's TELRIC methodology that the capital costs and expenses be attributed directly to individual network elements "to the greatest extent possible." (Paragraph 694) Where two or more network elements use the same plant, the Hatfield Model attributes costs to each of the network elements that use that plant so that the sum of the capital costs for each of the network elements equals the total capital costs for providing all the network elements together. This approach

conforms with the FCC's requirement that the prices for network elements reflect the economies of scale, scope and density that the incumbent LECs enjoy. (Paragraph 11) Moreover, the model attributes costs common to a particular group of elements to only those network elements using reasonable, nondiscriminatory factors (such as apportioning the costs of shared plant according to the ratio of the costs of the plant that is not shared between network elements). Therefore, it is consistent with the FCC's requirement that the incumbent LECs not be allowed to recover costs of shared plant disproportionately from network elements that would be especially hard for new entrants to build themselves or acquire from another source at this time. (Paragraph 696)

To these estimates of capital and network operations costs that are either part of the TELRIC of an individual element or that element's share of costs common to more than one network element, the Model adds a 10% markup, as an estimate of forward-looking overhead costs. This 10% markup reflects the level of "general and administrative" costs that a firm operating in a competitive environment would incur to provide a total level of output equivalent to the total quantity of each network element. It includes a share of the expenses for corporate managers' salaries, support operations such as the legal and human resources department, and the like.

The FCC's rules require that such overhead costs be included to the extent that they vary with the output of particular network elements (despite their accounting classification), and thus are part of the TELRIC of those elements. The FCC also requires, to the extent that there are any such overhead costs that are common to several wholesale elements, or to wholesale and other functions, that the prices of of network elements include "a reasonable share of common costs." The procedure of estimating the overhead costs of a wholesale-only carrier, which is what Hatfield does by adding the 10% markup, satisfies the FCC requirements. While statistical evidence and a

growing literature on activity-based accounting systems suggest that many of the costs that have traditionally been considered "overhead" costs should actually be considered service-specific or element-specific costs, the Hatfield Model method for treating overhead costs renders any precise distinction between element-specific and "common" overhead costs unnecessary. Insofar as the 10% markup captures all of the relevant overhead costs, it includes any element-specific costs and a reasonable share of any "common" overhead costs. This approach ensures that each network element recovers at least its "reasonable" share of such common costs, to the extent that they exist. Moreover, if regulators set prices for network elements equal to the costs that the Hatfield Model reports for each element, these prices would allow a firm that is engaged solely in providing network elements on a wholesale basis (with no retail functions) to recover all of its economic costs of doing business, including a reasonable profit, but no more. From this vantage point also, the Hatfield approach lies well within the bounds of reasonableness. I therefore urge regulators to adopt the Hatfield Model costs as the prices for unbundled network elements and interconnection services.

C. Non-Recurring Rates And Costs of Unbundling Elements

Q. DO STATE REGULATORS HAVE TO USE THE SAME PRINCIPLES IN SETTING NON-RECURRING RATES FOR UNBUNDLED NETWORK ELEMENTS?

A. Yes. Incumbent LECs do not only charge recurring rates for the use of their networks, they also charge non-recurring rates to recover the costs of ordering and any initial non-recurring costs of making the service or element available. These rates must also be set by state regulators. Granting incumbent LECs the discretion to set non-recurring rates without regard to economic costs would allow them to act on their incentive to

impede or prevent entry just as much as granting them discretion to set recurring rates without regard to economic costs. In particular, excessive non-recurring upfront costs can function as a financial barrier to entry. (See, Paragraph 749 of the Order) Thus, all of the same considerations that the FCC has laid out for determining proper recurring costs should be applied to non-recurring costs.

One of the most important requirements a state commission can insist upon is that charges for non-recurring costs reflect the forward-looking economic costing principle required by the FCC. To do otherwise is to allow the incumbent LECs to impose unduly high non-recurring costs on entrants not because they represent the efficient costs of providing those unbundled elements but in order to impede or prevent entrants from entering by using unbundled network elements. This requirement needs to apply to two forms of non-recurring costs: the costs of ordering service, and the determination of the costs of unbundling.

This is not merely a hypothetical concern. The experience that has occurred in several states with the ordering charges for Remote Call Forwarding (RCF) as an interim local number portability solution offers a clear example of how non-recurring charges can be used to prevent use of an element or function of an incumbent LEC's network. Although the functions are performed in networks that use very similar facilities, the prices to be charged to order RCF differed between Texas and Illinois by an enormous amount.

In paragraph 6 of a stipulation and agreement in the Texas Public Utility Commission Docket No. 14940, signed by SWBT and a number of other parties, such as Texas PUC and Time Warner Communications, SWBT commits to the following:

> The Settling parties agree that SWBT will charge a Secondary Service Order charge of $16.95 per telephone number ported.

> As an alternative to the $16.95 charge per telephone number ported, to recognize the efficiencies associated with large volumes of service orders, SWBT agrees to allow the LSPs to utilize a mechanized system to make bulk transfers of service orders by using a similar system to that currently allowed in Section 10 of SWBT's General Exchange tariff relating to Call Management Services. Specifically, after payment of a one time charge of $4,100.00 for the initial programming, SWBT will accept number changes via magnetic tape, or other agreed medium, at a rate of $10.00 per program run and $1.00 per telephone number ported. Any LSP or bill aggregator, (i.e., a clearing house type entity) who submits orders on tape pursuant to these provisions may submit orders on behalf of other LSPs without payment of additional programming fees or additional programming runs.

These provisions mean that if competitors collectively order 50,000 ported numbers over the course of 50 orders of 1000 numbers per tape (possibly one tape per month) then the effective service ordering charge is $1.092 per number ported.

By contrast, in Ill. C.C. Docket 95-0296, Ameritech Illinois proposed Standard Business Service Ordering Charges of $34.50. (ILL.C.C. No. 5, Part 2 - Section 28, 2nd Revised Page 5, Effective October 3, 1995.) Ameritech revised both the costs studies and the service ordering charge a number of times; the proposed charges, however, are never below $30.00 per number ported. Also, I understand that the cost studies supporting these charges, though proprietary, show costs greatly in excess of the

$34.50, which caused Ameritech to claim that their rates were really very reasonable. These costs were based, however, on ordering costs in a retail environment, not a wholesale one.

In general, state regulators should require that the ordering systems whose costs form the basis of part of any non-recurring charges should reflect electronic ordering, ordering in bulk, and all other applicable efficiencies that can exist in a wholesale, rather than a retail, market.

Q. YOUR LAST EXAMPLE DISCUSSED NON-RECURRING RATES TO RECOVER THE COSTS OF ORDERING. DO NON-RECURRING RATES ALSO RECOVER THE COST OF UNBUNDLING?

A. Yes. Just as with non-recurring costs for ordering a service, state regulators should also insist that the costs recovered by the incumbent LECs for unbundling network elements be calculated based on efficient unbundling. This is another area in which the incumbent LECs can act forcibly on their incentives to impede or block competition. It is also an area in which few of the other safeguards such as an insistence on strict nondiscrimination can blunt the ability to act on those incentives. Therefore, state regulators need to be particularly vigilant in examining with a critical eye claims about the costs of unbundling.

In most cases, the costs of unbundling will be non-recurring costs. In this regard, state regulators must take strongly into account the principle that costs be recovered only once, and be recovered equitably. The FCC's example of how to treat shared facilities for physical collocation service that will benefit future entrants matches costs and payments for benefits in time when facilities are shared between or among entrants. (See, Paragraph 750) This principle should be generalized, insofar as

practical, to all elements shared in time. Said differently, if the first entrant pays the efficient costs that an incumbent LEC would incur to be able to provide a particular unbundled network element, later users of the same unbundled network element should share equitably in the recovery of that cost. The logic should apply to any non-recurring cost that later entrants benefit from that an original requester pays.

Another way in which the FCC's example should be generalized is to include the incumbent LEC as one of the possible beneficiaries through time. In effect, some requests for unbundled network elements may be filled by the incumbent LEC by upgrading the facility in a manner that will be valuable to the LEC in the future, while charging the entrants for all of the costs of the upgrade. To the extent the incumbent LEC will benefit from the upgrade because it regains use of the facility in the future, through customer churn or some other event, the effect of such a charge would be to force the entrant to bear the cost of the incumbent LEC's network upgrades that are intended to make it easier for the incumbent to compete in the future. In this case, the requirement that the charge be imposed equitably needs to be expanded to take into account the future benefits to the incumbent LEC from activities taken to unbundle a network element for an entrant that may only be used for a fixed period of time before it reverts to the incumbent LEC to reuse.

An example of such a situation would arise if an entrant requests unbundled loops, and to provide them the incumbent LEC has to condition them. If the entrant later relinquishes the loop—perhaps because the customer has decided to return to the incumbent LEC or because the customer moved and the new occupant chose the incumbent LEC—the incumbent LEC benefits from the conditioning performed on the loop.

Extending the principle of an equitable matching of costs and payments for

benefits in time to include the incumbent LEC's future use of facilities is particularly important. The incumbent LEC has the incentive and the ability to force the entrants to pay for unnecessary work (from the entrant's perspective) on unbundled network elements in order to impede competitive entry. It is a double blow to competition to have the entrant not only pay for unnecessary work, but to have that work position the incumbent LEC to be in a better position to compete.

IV. COMPENSATION FOR THE TRANSPORT AND TERMINATION OF LOCAL TRAFFIC

Q. WHY IS THERE A NEED FOR COMPENSATION FOR THE TRANSPORT AND TERMINATION OF LOCAL TRAFFIC?

A. Local networks must be interconnected if the public is to have any chance to gain the benefits of local exchange competition. Consumers demand the ability to reach all customers in the local calling area, and to do so without having to pay elevated prices to reach customers that subscribe to a different local carrier. If local networks are not interconnected, an entrant cannot provide this ubiquity of reach, and the incumbent can use its absence to convince customers not to shift to the services of the entrant. Thus, interconnection of local networks is absolutely essential if consumers are to have any chance of getting the benefits of local exchange competition. Interconnection opens up the question of what the compensation will be for terminating local exchange traffic.

Q. HOW HAS THE FCC RULED THAT COMPENSATION SHALL BE PROVIDED FOR THE TRANSPORT AND TERMINATION OF LOCAL EXCHANGE TRAFFIC?

A. The FCC has established a framework to govern interconnection and compensation for

terminating local exchange traffic. Interconnection is the physical linking together of two networks, and the FCC has set rules that govern interconnection. The FCC has separated compensation into transport and termination. The FCC has ruled that termination of a local call by the incumbent LEC as used in the 1996 Act means the act of switching the call to the intended recipient at the end office switch that serves that subscriber. The FCC has also ruled that the 1996 Act separately discusses transport of that call to the end office when an entrant does not interconnect at that end office directly. As the FCC noted:

> We define "transport," for purposes of section 251(b)(5), as the transmission of terminating traffic that is subject to section 251(b)(5) from the interconnection point between the two carriers to the terminating carrier's end office switch that directly serves the called party (or equivalent facility provided by a non-incumbent carrier.) (Paragraph 1039)

> We define "termination," for purposes of section 251(b)(5), as the switching of traffic that is subject to section 251(b)(5) at the terminating carrier's end office switch (or equivalent facility) and delivery of that traffic from that switch to the called party's premises.

Both of these functions are included in the FCC's rules governing compensation due the incumbent LEC for completing local calls that originate on another carrier's network. Within the framework of its rules, however, there are a number of vital issues that state regulators must still decide. In particular, state regulators must determine the actual compensation to be paid

the incumbent LEC and the compensation the incumbent LEC shall pay the entrant.

A. Compensation to the Incumbent

Q. WHAT HAS THE FCC RULED SHALL BE THE APPROACH TO COMPENSATION TO THE INCUMBENT?

A. The FCC rules governing compensation to the incumbent LEC for completing local calls have several components. The FCC has ruled that the compensation for transport and termination of local calls will be based on economic cost. To achieve this, the FCC ruled:

> States have three options for establishing transport and termination rate levels. A state commission may conduct a thorough review of economic cost studies prepared using the TELRIC-based methodology outlined above in the section of the pricing of interconnection and unbundled elements. Alternatively, the state may adopt a default price pursuant to the default proxies outlined below. If the state adopts a default price, it must either commence review of a TELRIC-based economic cost study, request that this Commission review such a study, or subsequently modify the default price in accordance with any revised proxies we may adopt. As previously noted, we intend to commence a future rulemaking on developing proxies using a generic cost model, and to complete such proceeding in the first quarter of 1997. As a third, alternative, in some circumstances states may order a "bill and keep" arrangement, as discussed below. (Paragraph 1055, footnote

omitted)

If a state selects the first option, after performing the thorough review of the economic cost studies both for conformance with the TELRIC principles the FCC has given and for accuracy of results, it must set the rates to recover only what the FCC has defined as economic costs. As the FCC stated:

> Consistent with our conclusions about the pricing of interconnection and unbundled network elements, we conclude that states that elect to set rates through a cost study must use the forward-looking economic cost-based methodology, which is described in greater detail above, in establishing rates for reciprocal transport and termination when arbitrating interconnection arrangements. (Paragraph 1056, footnote omitted)

The FCC has ruled that the structure of compensation paid to incumbent LECs for transport and termination should follow the switched access model of separate rate elements for different functions (although the level of those rate elements is not to be based on switched access charges). Thus, it has ruled that incumbent LECs shall be paid for tandem switching, for transport between the tandem and the end office, and for end office switching if any of these elements are used by an entrant. It has required, however, that these payments must be based on the TELRIC costs of supplying them, plus a reasonable share of forward-looking common costs, but no more. It has also ruled on when and how bill-and-keep can be used.

Q. WHAT SHOULD STATE REGULATORS USE TO SET TELRIC-BASED RATES FOR COMPENSATION?

A. I urge that the state regulators use the Hatfield Model to establish prices in conformance with TELRIC principles, under the presumption of symmetry in rates (unless the entrant proves it is entitled to be paid a higher rate). As was discussed in the section above on unbundled network elements, the Hatfield model produces reasonable estimates of TELRIC costs, and estimates more consistent with the FCC's required TELRIC methodology than cost estimates derived from incumbent LEC cost studies with which I am familiar.

Q. HOW SHOULD LOCAL EXCHANGE TERMINATING TRAFFIC BE MEASURED?

A. I urge that only the most efficient measurement and billing procedures be used to implement compensation, and that the incumbent LECs be allowed to recover in any rates charged to compensate for transport and termination only the forward-looking costs of the most efficient measurement and billing procedures. Specifically, I urge that auditable Percent Local Usage reports be used to determine the portion of traffic for which local interconnection compensation is due, rather than new measurement systems married to the billing system for switched access that would have to be developed and implemented at substantial cost. To do otherwise would prevent consumers from gaining the benefits sought from the 1996 Act.

Q. WHY DO YOU RECOMMEND THE USE OF A PERCENT LOCAL USAGE FACTOR, RATHER THAN THE DEVELOPMENT OF A NEW SYSTEM FOR

MEASUREMENT AND BILLING OF TERMINATING LOCAL EXCHANGE TRAFFIC?

A. Just as the incumbents have the incentive and the ability to try to prevent genuine competition using unbundled network elements by imposing excessively high non-recurring costs, the incumbents have the same incentives and ability to try to thwart the development of effective competition by imposing excessive and disproportionate costs for measurement and billing on entrants.

Many incumbent local exchange carriers do not now have a means to determine whether terminating traffic is local or intraLATA without imposing inefficiencies on the carrier delivering that traffic by requiring them to send it on separate trunk groups, which forces them to lose some of the economies of scale available in trunking. Developing and implementing a new system to do this will be costly. While it is the case that incumbent local exchange carriers can and do measure and bill for at least some of their local exchange traffic, the systems they use for that purpose exist mainly in the originating switch and cannot be used to determine whether a terminating call is a local or intraLATA toll call. Moreover, the measurement system that does exist for measuring some terminating traffic, switched access, cannot handle calls that are not preceded by a "1." Thus, any arrangement for terminating local exchange traffic that would have a charge per minute could force incumbents and entrants to develop new systems to sort out different kinds of traffic. Costs associated with the creation of systems for measuring and billing terminating local exchange calls will fall disproportionately on new entrants.

Q. IS THIS JUST A THEORETICAL CONCERN?

A. No. The development of measurement and billing systems for switched access shows

that this concern is not an idle one. AT&T prior to divestiture wanted a new measurement and billing system for interconnection for what were then called Other Common Carriers—the first ones being MCI and Sprint—in order to be able to charge them for all of the so-called non-conversation time: the time spent setting up calls that occurs in addition to the time when conversations actually occur. Until the advent of the Other Common Carriers, all that the switches were designed to measure was conversation time, as that was all that was billed to end users. AT&T knew the average non-conversation time of a call, and could have factored the costs of that into rates based on conversation time, but it chose not to take that approach.

Because switched access was to be measured and billed differently from how end user calls were measured and billed, the incumbent LECs needed new measurement and billing systems. The new systems turned out to be much more costly than the systems used for end user measurement and billing. According to data supplied in Massachusetts in 1995, it costs NYNEX only $0.000007 per message to bill a local exchange call, but $0.000215 per minute to bill a carrier access call. (Attachment 3 to the testimony of Ms. Paula Brown, in D.P.U. 94-185) According to Page 2 of 9 of Ms. Brown's Attachment 3, the average duration of a call is 3.16 minutes. Multiplying that times her carrier access billing cost shows a cost almost 100 times greater to bill a single call using the billing system for carrier access than the cost to bill an end user.

The incumbent local exchange carriers are indeed working on developing a new system to measure terminating local exchange traffic coming from other carriers that uses Signaling System 7 (SS7) data. If implemented, this would have several bad effects on entrants. First, it is going to add significant costs to the cost of terminating local exchange traffic. I understand that, based on data provided under proprietary agreements in at least two U S West states, Washington and Oregon, developing such

a measurement and billing system could more than double the forward-looking economic cost of the end office switching function for terminating traffic from the cost without measurement and billing. This is a significant cost burden to add to local exchange service. Second, it will penalize entrants because they will not be able to use it for all of the traffic that incumbent LECs terminate to them, as not all LEC switches are yet equipped to use SS7. Thus, although all of the traffic going from an entrant to an incumbent could be sorted and measured in this manner, the converse would not be true.

Moreover, I understand that the same cost data showed that the measurement function would be even more costly than the measurement function now performed for switched access. U S West proposed to use the same billing system it uses for interexchange carriers, with billing costs that are higher than the costs to bill measured local exchange traffic. In summary, the proposal is a way to increase the already inefficiently high costs of measuring and billing regular switched access, and impose those costs on entrants.

In order to be able to participate in a measured approach to compensation, the entrants would also have to incur the costs to install measurement equipment in their networks. The entrants cannot opt out of this requirement because to do so would put them at an even bigger disadvantage than if they installed the equipment. If compensation were to be on a measured use basis and the entrants did not install measurement equipment, they would not only pay the incumbent to terminate their traffic, but would also pay to terminate the incumbent's traffic. Thus, they would be forced to install measurement equipment themselves. As noted above, however, not all traffic from incumbent LECs uses SS7 signaling.

Additionally, based on the experiences to date with the billing for carrier access charges, the use of a bad measurement and billing system will pose additional costs in

the form of auditing and verification costs. Carrier access bills have been sufficiently in error that it has been cost effective for interexchange carriers to hire people full time to audit and try to get corrections made in these bills. These auditing costs have not been one-time costs, but continue to be incurred today. The costs to the interexchange carriers are less than the savings from what they otherwise would have been required to pay, but these additional expenditures on auditing due to the use of a bad measurement and billing system bring with them no social benefits whatsoever. In other words, these additional costs are a total dead weight loss to society.

Increases in these costs would fall disproportionately on entrants. The incumbent LEC would experience at least some of the same costs for each minute or message delivered to an entrant for termination, but those minutes -- while most likely equal to the number received from the entrants -- would constitute a much smaller percentage of the incumbent LEC's total traffic, at least for some time to come. The result is that the impact is much less on the incumbent than on the entrants of being faced with unnecessary and, from the point of view of society, wasteful costs than it is on the entrants.

Q. IS THERE ANY EVIDENCE THAT THE INCUMBENT LECS WANT TO IMPOSE DISPROPORTIONATE COSTS FOR MEASUREMENT AND BILLING ON ENTRANTS?

A. Yes. That incumbent LECs see an opportunity to impose disproportionate costs on entrants is supported by the nature of the agreement that BellSouth negotiated with entrants. The BellSouth agreement requires both the incumbent and the entrant to measure traffic. There are a number of fixed costs incurred for measurement and billing even if measurement and billing is based on exchanging Percent Local Usage

information. The entrant must spread the fixed costs of installation and use over a much smaller total base of operations. The result is that average cost per unit of traffic is raised more for the entrant than for the incumbent.

That the average cost per unit of traffic is raised more for the entrant than for the incumbent is a feature of the interplay between the cost structure of the billing system and the vastly different proportions of total traffic that is interconnected for the incumbent and the entrant. It has been argued that measurement costs nonetheless may be worth incurring so that, among other reasons, the payments a carrier receives for terminating interconnected traffic can vary with the volume of that traffic. The usual claim is that this is particularly important because of the possibility that the flow of traffic between two carriers might be substantially unbalanced.

The billing and measuring system required by the BellSouth agreement, however, would not serve this function. It would not allow a carrier to receive larger net payments if it terminated substantially more interconnected traffic than it originated because the agreement requires that bill-and-keep take over if traffic is *out* of balance by more than 105 percent. Thus bill-and-keep is used when traffic is out of balance and explicit payment is used when traffic is roughly in balance -- the exact opposite of the FCC requirement for use of bill-and-keep. It is difficult to make much sense of this arrangement, but it is easy to see that it does ensure that entrants' costs of serving a customer will be disproportionately increased by the requirement that they install measurement equipment that may not even be used.

Q. WHAT SHOULD STATE REGULATORS ORDER FOR DETERMINING THE AMOUNT OF LOCAL EXCHANGE TRAFFIC PASSING FROM ONE NETWORK TO ANOTHER?

A. To avoid the imposition of disparate and inefficient administrative costs, state regulators should require all carriers—incumbents and entrants alike—to report a percentage local traffic amount subject to an auditing requirement as the basis for compensation payments for transport and termination. This would mirror the current practice for jurisdictional reporting of terminating switched access.

Carriers can count minutes of use coming into their switches over a trunk group. Taking that count, plus the percentage of local traffic would enable the receiving carrier to bill for transport and termination without having to invent a whole new measurement and billing system. This would be far more efficient than allowing the incumbent LECs to act on their incentives to impose unnecessary and disparate cost burdens on entrants in an attempt to impede the development of local exchange competition.

B. Compensation to the Entrant

Q. WHAT ARE THE REQUIREMENTS GOVERNING COMPENSATION TO THE ENTRANT FOR TERMINATING LOCAL EXCHANGE TRAFFIC?

A. The 1996 Act addresses compensation to be paid to entrants when they complete local calls that originate on the network of the incumbent. The 1996 Act calls for such compensation to be reciprocal.

Q. WHAT HAS THE FCC RULED CONSTITUTES RECIPROCAL COMPENSATION?

A. The FCC has ruled that reciprocal compensation should be symmetrical compensation, unless an entrant can prove through the use of economic cost studies that the entrant should be paid a higher rate. As the FCC stated:

Symmetrical compensation arrangements are those in which the

> rate paid by an incumbent LEC to another telecommunications carrier for transport and termination of traffic originated by the incumbent LEC is the same as the rate the incumbent LEC charges to transport and terminate traffic originated by the other telecommunications carrier. (Paragraph 1069)
>
> Given the advantages of symmetrical rates, we direct states to establish presumptive symmetrical rates based on the incumbent LEC's costs for transport and terminating of traffic when arbitrating disputes under section 252(d)(2) and in reviewing BOC statements of generally available terms and conditions. If a competing local service provider believes that its cost will be greater than that of the incumbent LEC for transport and termination, then it must submit a forward-looking economic cost study to rebut this presumptive symmetrical rate. (Paragraph 1089)

In considering how entrants should be compensated, the FCC specifically addressed tandem switching functionality. The C.F.R. in section 51.709(a)(3) states:

> Where the switch of a carrier other than an incumbent LEC serves a geographic area comparable to the area served by the incumbent LEC's tandem switch, the appropriate rate for the carrier other than an incumbent LEC is the incumbent LEC's tandem interconnection rate.

In the text of its Order, the FCC made clear that by the use of the "tandem interconnection rate," the FCC meant the sum of the tandem charge, the transport charge, and the end office termination charge. As the FCC stated:

> We, therefore, conclude that states may establish transport and termination rates in the arbitration process that vary according to whether the traffic is routed through a tandem switch or directly to the end-office switch. In such event, states shall also consider whether new technologies (*e.g.*, fiber ring or wireless networks) perform functions similar to those performed by an incumbent LEC's tandem switch and thus, whether some or all calls terminating on the new entrant's network should be priced the same as the sum of transport and termination via the incumbent LEC's tandem switch. (Paragraph 1090)

The Network Implementation white paper describes the ways in which the physical networks can be interconnected for traffic delivery between the entrant and incumbent LEC networks. It describes the charges that apply based on the rules the FCC has prescribed.

C. Why the FCC Rules Reduce the Benefits From Bill-and-Keep

Q. YOU SAID THE FCC RULES PREVENT BILL-AND-KEEP FROM BRINGING ITS GREATEST BENEFITS TO CONSUMERS. WHY?

A. The FCC provides for three approaches to compensation. One of these is bill-and-keep, which could in principle be implemented without an examination of cost studies. A careful reading of the Order, however, suggests that the FCC intends to limit

bill-and-keep to apply only to termination, not transport. Although section 51.701(e) includes both transport and termination in its definition of reciprocal compensation arrangements, succeeding sections narrow the applicability of bill-and-keep. Section 51.713, in particular, limits the definition of bill-and-keep arrangements for reciprocal compensation to "those in which neither of the two interconnecting carriers charges the other for the termination of local telecommunications traffic that originates on the other carrier's network."

As a result, the FCC approach would not end the need to measure terminating traffic, one of the important benefits of bill-and-keep. Measurement would still be needed for transport. The failure of the FCC to include transport in a bill-and-keep approach makes it less beneficial for competition than it would otherwise be.

V. INTRASTATE ACCESS CHARGE REFORM

Q. WHY ARE YOU ADDRESSING SWITCHED ACCESS CHARGES IN THIS ARBITRATION?

A. With every decision prying open local exchange markets to competition, the need to eliminate above cost prices for access becomes more immediate. New entrants are making decisions affecting local competition which are distorted whenever prices for access exceed cost. (Even the temporary "surcharge" placed by the FCC on unbundled local switching can be expected to distort decisionmaking.) For this period of arbitrations, while business decisions about whether, how, and which local markets to enter are being made at a rapid pace, it is vitally important that any state that has not already done so initiate intrastate access reform. Otherwise, emerging competition will be damaged, new competitors will gravitate toward more favorable procompetitive environments, and competition will be plagued by inefficient choices that raise

interexchange carriers costs and so limit price reductions in intrastate toll charges.

This arbitration proceeding provides the state commission with the opportunity to price intrastate access charges at economic cost. The Hatfield Model provides the means to identify the appropriate cost and prices. I urge the state commission to iniate intrastate access reform now.

Q. ARE THERE SPECIFIC EVENTS DRIVING THE NEED TO INITIATE ACCESS CHARGE REFORM NOW?

A. Yes. Two events drive the need to initiate access charge reform now: (1) the announcement in the Order that the FCC will be addressing access charge reform concurrent with its adoption of a competitively-neutral universal service mechanism, and (2) the section 271 public interest test that requires elimination of the artificial advantage conferred on BOCs by above-cost access charges. In the first case, alignment of intrastate access rates to cost must occur in tandem with the federal reforms to ensure that ratepayers are not paying twice for universal service support. In the second case, above-cost access confers an ability to discriminate that distorts and disrupts the competitiveness of both the local and long distance markets. In at least MCI's view, until access charges, both interstate and intrastate, are reduced to forward looking, economic cost, regulators may not legally allow BOC entry into in-region long distance under the 1996 Act.

I urge each state to initiate a proceeding now, if it has not already done so, in which the requisite record can be developed to eliminate completely prices for access that exceed forward-looking economic cost. Taking charge of intrastate access reform now not only gives the state control over the date when the temporary "surcharge" on the unbundled local switching element introduced by the FCC is eliminated but also

allows the state to coordinate its access charge reform with its creation of a competitively-neutral universal service support mechanism.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

REBUTTAL TESTIMONY OF SARAH J. GOODFRIEND

ON BEHALF OF MCI

MCI/GTE ARBITRATION DOCKET

September 30, 1996

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Sarah J. Goodfriend and my business address is 701 Brazos, Suite 600, Austin, Texas 78701.

Q. ARE YOU THE SAME SARAH J. GOODFRIEND WHO PRESENTED DIRECT TESTIMONY ON BEHALF OF MCI 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 respond to some criticisms of the Hatfield Model included in the testimony of Gregory M. Duncan and to respond to certain economic propositions developed by David S. Sibley, on behalf of GTE Florida Incorporated (GTE-FL). Because Dr. Duncan provides the substance of his testimony in attachment Exhibit GMD-1, my citations are to numbers in his attachment. I respond to Dr. Sibley's direct testimony and to portions of Exhibit No. DSS-2 *An Economic Framework for Implementing the Pricing Provisions of the Telecommunications Act of 1996 (Framework)*.

Q. TO WHICH OF DR. DUNCAN'S CRITICISMS WILL YOU BE

RESPONDING?

A. I address criticisms based on economic principles. MCI and AT&T Witness Don J. Wood responded to many of Dr. Duncan's criticisms in his rebuttal testimony in this consolidated docket, filed September 24, 1996. Generally I will not address the issues responded to by Mr. Wood.

Q. IT IS "VEXING" TO DR. DUNCAN THAT THE HATFIELD MODEL IS NOT VALIDATED OR CALIBRATED BY COMPARISON TO REAL WORLD PHENOMENA. (AT 4) WHAT IS HIS CONCERN?

A. Dr. Duncan's quarrel is with the fact that the Hatfield Model builds a network using the raw inputs available to the incumbent LECs, such as price lists and engineering specifications, but generally rejects the usefulness of observations of incumbent LEC embedded costs. Engineering principles and judgments are expressed in the model as specific, transparent model algorithms. The openness of the Hatfield Model is the characteristic of the model supporting its validation.

Q. DR. DUNCAN COMPLAINS THAT THE HATFIELD MODEL IS "GROSSLY AT ODDS WITH HOW REAL BUSINESSES INCUR COSTS, ESPECIALLY CAPITAL INTENSIVE FIRMS THAT EXPAND THEIR FACILITIES BY ADDING CAPACITY IN DISCRETE MODULES." (AT 5) WHAT IS HIS CONCERN?

A. Dr. Duncan takes issue with the fact that the FCC did not impose any constraints on how forward-looking network costs were to be developed other than the requirement that existing wire centers be taken as given. Presumably, Dr. Duncan would be

satisfied if the FCC had simply *presumed* that GTE-FL costs are forward-looking economic costs. This could be accomplished for example, by imposing additional constraints of capital fixity, requiring ever more incumbent LEC plant or network design be "kept in place" when estimating forward-looking economic cost. Ultimately, this approach would transform a long-run TELRIC model into a short-run TESRIC model because of the magnitude of fixed investments. The FCC explicitly rejected such an embedded cost approach and rejected its implication, that entrants pay for obsolete or inefficient network design or technology.

Q. DR. DUNCAN CLAIMS THAT THE HATFIELD MODEL CREATES A CONTRADICTORY WORLD IN WHICH FULL COMPETITION AND SCALE ECONOMIES "THAT WOULD ORDINARILY DICTATE A MONOPOLY STRUCTURE" COEXIST. (AT 7) DOES THE HATFIELD MODEL RELY ON A CONTRADICTION?

A. There is no contradiction here. One of the great breakthroughs in modern economic thought has been the recognition that the existence of natural monopoly of the *facility* need not give rise to natural monopoly of the *firm*. This distinction allows a single or monopoly facility to be shared among multiple firms. For example in trucking, electricity and other industries (notably oil pipelines and deep harbor ports), institutional arrangements provide for sharing of access or use rights to natural monopoly facilities, and so facilitate competition in related markets. Shared use of monopoly facilities such as roadways and electric transmission lines facilitate competition in trucking and power generation, respectively. Because the Hatfield Model conforms to the FCC pricing guidelines and incorporates economies

associated with shared plant existing in a wholesale-only network, the Hatfield Model facilitates the introduction of a world where full competition and natural monopoly facilities may coexist.

Q. WHAT OTHER ECONOMIC CLAIMS CAN YOU DISCERN FROM DR. DUNCAN'S DISCUSSION AT 6-7?

A. Dr. Duncan reiterates claims made by incumbent LECs to the FCC. These are mentioned here and reasserted again (at 17-18) as claims that Hatfield cost of capital and depreciation are too low. I understand the claims to be: (1) It is inappropriate for the Hatfield Model to incorporate forward-looking least cost technology because competitive firms don't completely incorporate new technology owing to the risk of technological obsolescence and potential underrecovery of investment. (2) Dr. Hausman says that regulatory depreciation rates and cost of capital measures are too low for the transition to competition. Dr. Duncan does not develop these assertions, so I will not belabor a response. I note, however, that claims regarding adequacy of compensation and its relation to risk-bearing, a central thread of both (1) and (2) above have been raised and addressed in detail in pleadings before the FCC in the Interconnection Proceeding (Docket 96-98). Two documents prepared on behalf of MCI which address these claims are *Depreciation Policy in the Telecommunications Industry: Implications for Cost Recovery by the Local Exchange Carriers,* 12/95 and *Depreciation and Capital Recovery Issues: A Response to Professor Hausman,* July 24, 1996. I will respond to Dr. Duncan in greater detail when he develops his claims more fully.

Q. DR. DUNCAN ASSERTS THAT THE SPARE CAPACITY REPRESENTED BY A FILL FACTOR LESS THAN 1.0 IS A *CURRENT* COST OF PROVIDING SERVICE. (AT 12) DO YOU AGREE?

A. No. I concur in MCI and AT&T Witness Don J. Wood's characterization that such an approach violates principles of cost causation. To accept Dr. Duncan's position is to create a cross-subsidy from current customers who pay for these facilities to future customers who use these facilities. The Hatfield Model sizes the network to provide local, narrowband services. Incumbent LEC investments, such as for broadband services or long distance, intended for future customers should look to future customers and revenues for recovery.

Q. LASTLY, DR. DUNCAN CLAIMS THAT THE HATFIELD MODEL VIOLATES MATHEMATICAL PROPERTIES REQUIRED OF COST MODELS. (AT 21-22 and 27-28) ARE THESE CRITICISMS VALID?

A. No. Dr. Duncan suggests that the Hatfield Model does not satisfy the property of linear homogeneity in input prices. To demonstrate this he provides a table purporting to show that, for a scalar increase in all prices of 10%, Hatfield Model element costs do not rise by the anticipated 10%. Although as a mathematical construct, scaling up all input prices by 10% is a trivial exercise, imposing this test properly on the Hatfield Model is not so simple. From the information provided, it is impossible to know whether the authors successfully tested for linear homogeneity. I will respond to this concern based on results from a verifiably accurate test. Second, Dr. Duncan suggests that the Hatfield Model violates a derivative property. This criticism simply reflects the fact that in an earlier version of the model, structure

costs depended upon cable costs. As noted in the documentation, structure costs are now computed directly, so this "violation" and the related demonstration of "bias" no longer apply.

Q. WHAT IS THE RELATIONSHIP BETWEEN THE EFFICIENT COMPONENT PRICING RULE (ECPR) RATES REJECTED BY THE FCC AND DR. SIBLEY'S M-ECPR RATES ?

A. The authors of the Framework explain that any distinction between the prices depends upon the presence or absence of market alternatives. Market alternatives are defined as sources for unbundled elements excluding the incumbent LEC available to supply the entrant. If all market alternatives are assumed away, then M-ECPR rates are the same as ECPR rates. (Framework V-4)

Q. WHY DO THE AUTHORS OF THE FRAMEWORK BELIEVE THAT M-ECPR RATES WILL GENERALLY DIFFER FROM ECPR RATES?

A. The authors believe that entrants generally have port/switching, local switching and tandem switching available from market alternatives at competitive prices. They assume that port/switching services, signalling and transport can be purchased at competitive prices from third-party vendors. However, they believe there are relatively few market constraints on the incumbent LEC provision of loops. (Framework V-4)

Q. DO YOU BELIEVE THE M-ECPR APPROACH IS CONSISTENT WITH FCC PRINCIPLES?

A. No. In discussing reasonable allocation methods for forward-looking common costs, after endorsing the use of a fixed factor method, the FCC said:

> We conclude that a second reasonable allocation method would allocate only a relatively small share of common costs to critical network elements, such as the local loop and collocation, that are most difficult for entrants to replicate promptly (i.e., bottleneck facilities). Allocation of common costs on this basis ensures that the prices of network elements that are least likely to be subject to competition are not artificially inflated by a large allocation of common costs. On the other hand, certain other allocation methods would not be reasonable. For example, we conclude that an allocation methodology that relies exclusively on allocating common costs in inverse proportion to the sensitivity of demand for various network elements and services may not be used. We conclude that such an allocation could unreasonably limit the extent of entry into local exchange markets by allocating more costs to, and thus raising the prices of, the most critical bottleneck inputs, the demand for which tends to be relatively inelastic. Such an allocation of these costs would undermine the pro-competitive objectives of the 1996 Act. (Paragraph 696, footnotes omitted)

To the extent the competition envisioned by the authors is limited or virtually non-existent, the M-ECPR allocation approximates the ECPR method and violates the Act. To the extent, as the authors believe, market alternatives will be the least viable for local loops, the common cost allocation will be largest for bottleneck facilities, and

thereby violate the Act.

Q. THE FRAMEWORK, CITING AUTHOR SPULBER, ASSERTS "TECHNOLOGICAL CHANGES AND INDUSTRY DEVELOPMENTS SHOW THAT LOCAL EXCHANGES ARE LACKING IN MONOPOLY POWER." (AT II-7) DO YOU AGREE?

A. No. The authors provide no suggestion whether, for which relevant markets, and to what extent they claim that market alternatives exist. If market alternatives exist, their ability to constrain the pricing of unbundled network elements by incumbent LECs is severely limited. As *The Enduring Local Bottleneck* (1994) concluded: Competition is likely to increase for some significant components of local telecommunication service over the next five to ten years under appropriate regulatory and market conditions. However, the level and scope of competitive entry is unlikely to be sufficient to eliminate or even significantly reduce the power of the BOCs. Additional time is required for effective and sustainable local exchange competition to emerge. (Executive Summary at iii)

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

GTE FLORIDA INCORPORATED

DIRECT TESTIMONY OF DAVID S. SIBLEY

DOCKET NO. 960847-TP

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is David S. Sibley, University of Texas at Austin, 22nd and Speedway, Austin, TX, 78712.

Q. PLEASE STATE YOUR PROFESSIONAL QUALIFICATIONS AND EDUCATIONAL BACKGROUND.

A. I am the John Michael Stuart Professor of Economics at the University of Texas at Austin. Prior to joining the University of Texas at Austin, I was Head of the Economics Research Group at Bell Communications Research. I also served as a member of technical staff at Bell Laboratories. I have taught graduate level courses in regulation at the University of Pennsylvania and Princeton University, in addition to my work at the University of Texas.

During the Carter Administration, I served as Senior Staff Economist on the Council of Economic Advisors and as advisor to the Chairman of the Civil Aeronautics Board. During the last twenty years, I have carried out extensive research in the areas of regulation, industrial organization, and microeconomic theory. I have published articles on regulation and pricing in a number of

academic journals, including the *Journal of Economic Theory*, *Econometrica*, *American Economic Review*, *Rand Journal of Economics*, *Journal of Public Economics*, and the *Journal of Regulatory Economics*. I am a coauthor with Steven J. Brown of the textbook *The Theory of Public Utility Pricing* published by Cambridge University Press in 1986 and now in its fourth printing, and co-editor of *Telecommunications Demand Analysis: An Integrated View*, published by North-Holland in 1989. Currently, I serve as Associate Editor of the *Journal of Regulatory Economics*.

I received a B.A. in Economics from Stanford University and a Ph.D. in Economics from Yale University.

Q. HAVE YOUR PREPARED A VITAE THAT DESCRIBES YOUR EDUCATION, PUBLICATIONS, AND EMPLOYMENT HISTORY?

A. Yes. A copy of my most recent vitae is attached as Exhbit No. DSS-1.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide an economic analysis of the issues to be arbitrated in this proceeding between AT&T and GTE. In this regard, I adopt the report entitled, "An Economic Framework for Implementing the Pricing Provisions of the Telecommunications Act of 1996" (attached hereto as Exhibit

No. DSS-2). The report was prepared by Michael J. Doane, J. Gregory Sidak, Daniel F. Spulber, Michael A. Williams, and myself. The report identifies a pricing rule that would satisfy the requirements of the Telecommunications Act of 1996 while ensuring that local exchange carriers received just compensation. The economic analysis set forth in this report is specific to Florida.

Q. IN CONNECTION WITH THE PREPARATION OF YOUR REPORT, WHAT MATERIALS HAVE YOU REVIEWED?

A. I reviewed the Telecommunications Act of 1996 and the August 1996 order of the Federal Communications Commission (FCC) in its local competition docket, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, First Report and Order*, CC Dkt. Nos. 96-98, 95-185 (released Aug. 8, 1996) [hereinafter *First Report and Order*]. Additionally, I have reviewed the testimony and report prepared by David L. Kaserman entitled "Local Competition Issues and the Telecommunications Act of 1996."

Q. WHAT IS YOUR IMPRESSION OF THE INTENT OF THE TELECOMMUNICATIONS ACT OF 1996?

A. The Act offers the promise of an end to more than a half a century of monopoly regulation of the local exchange and telephone industry. The Act holds out the further promise of a new "pro-competitive, deregulatory" system for fostering competition in all segments of the telecommunications industry.

Q. WHAT ARE THE CENTRAL PRINCIPLES OF THE TELECOMMUNICATIONS ACT?

A. To open all telecommunications markets to competition so as to provide a procompetitive, deregulatory neutral policy framework designed to accelerate the delivery of advanced communications and information technologies to all Americans.

Q. HOW ARE THESE PRINCIPLES BEING IMPLEMENTED?

A. The Act requires incumbent local exchange carriers to offer their resale services to other carriers at wholesale costs. The Act also contains sweeping interconnection and unbundling provisions. Although Congress has provided guidance on the types of services subject to wholesale and unbundling requirements, "just and reasonable" rates must be negotiated or determined state-by-state, in proceedings like this one.

Q. WHAT DO YOU SEE AS THE CONSEQUENCES OF THESE STATE-BY-STATE ARBITRATIONS?

A. These arbitrations can affect the financial viability of GTE and every state's incumbent local exchange carriers. That issue, in turn, will have profound ramifications for the consumers of the state. For example, if prices are not appropriately set for mandatory network access, that will impair GTE's financial integrity. This will starve the local telecommunications network of future investment. That investment, however, is critical not only to replacing the existing infrastructure as it wears out, but also to maintaining and expanding that infrastructure so that it can serve as the backbone on which new competitors would enter the new competitive marketplace. Finally, many of the benefits that should accrue to all citizens from robust, fair competition will be eroded if GTE and other local exchange carriers are so weakened that they are unable to compete effectively with those companies entering the marketplace.

Q. WHAT DOES ECONOMIC ANALYSIS IMPLY ABOUT THE PROPER OUTCOME OF THIS ARBITRATION PROCESS?

A. Economic analysis indicates that, if GTE is to be required to sell or make available its services and products to AT&T and others, GTE should be reimbursed for all its costs and be allowed the opportunity to earn a reasonable rate of return as expressly authorized by Congress. Anything less would be a taking of GTE's property. Importantly, it would also deny the consumers

of this state the substantial benefits that ought to flow from robust, fair competition.

Q. WHAT DOES THE ACT REQUIRE WITH RESPECT TO THE PRICE TO BE CHARGED BY INCUMBENT LOCAL EXCHANGE COMPANIES FOR UNBUNDLED NETWORK ELEMENTS?

A. In section 252(d)(1), the Act requires three things. First, it requires that the price 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." Second, it requires that the prices be "non-discriminatory." Third, the Act requires that such prices "may include a reasonable profit."

Q. HAS AT&T PROPOSED A PRICING RULE FOR THE STATES TO USE FOR SETTING PRICES FOR UNBUNDLED NETWORK ELEMENTS?

A. Yes. According to the report written by Kaserman, et al. on behalf of AT&T, AT&T is arguing that prices should be set equal to Total Service Long-Run Incremental Costs (TSLRIC) per unit.

Q. WHAT IS TSLRIC?

A. TSLRIC is a measure of the total incremental cost incurred in the long run that is caused by the addition (or deletion) of a service from an existing set of services.

Q. DOES TSLRIC PRICING SATISFY THE ACT'S REQUIREMENTS?

A. Absolutely not.

Q. HOW WOULD YOU CHARACTERIZE AT&T'S PROPOSAL OVERALL?

A. It is very curious. In a new era of deregulation, AT&T has set forth a proposal that will actually increase regulation in the industry. At the same time, the AT&T proposal is structured to require monumental subsidies from GTE to AT&T. As a robust competitor in the marketplace, AT&T is already demonstrating through this proposal its ability to compete aggressively with local exchange carriers. Its very proposal is structured deliberately to give AT&T a most-favored position in the new marketplace while simultaneously saddling its new competitors with a mountain of costs. AT&T knows that it will enjoy a tremendous competitive advantage if it can enter this new arena without having to pay the costs imposed on everyone else. While I understand AT&T's motive for pushing its proposal, it is incomprehensible to me how this proposal can be squared with either the objectives or the literal terms of the Telecommunications Act of 1996.

Q. WHY DO YOU THINK TSLRIC IS NOT A REASONABLE PRICING RULE FOR STATE COMMISSIONS TO USE?

A. There are at least ten specific problems with using TSLRIC pricing of unbundled network services:

(1) TSLRIC pricing does not reflect the firm's total direct costs;

(2) TSLRIC pricing does not reflect the firm's economic costs;

(3) TSLRIC pricing is not competitive pricing;

(4) TSLRIC pricing promotes free riding by competitors;

(5) TSLRIC pricing subsidizes entrants;

(6) TSLRIC pricing does not take into account the shifts in costs from attributable costs to joint and common costs due to unbundling, thus creating incentives for excessive and economically inefficient unbundling;

(7) TSLRIC pricing fails to include joint and common cost increases that are due to unbundling;

(8) TSLRIC pricing creates incentives for the incumbent to reduce its joint and common or shared costs;

(9) TSLRIC pricing lacks dynamic pricing flexibility and creates incumbent burdens; and

(10) TSLRIC pricing is discriminatory.

Q. HAVE YOU PROPOSED A PRICING RULE THAT DOES MEET THE REQUIREMENTS OF THE ACT?

A. Yes, I have.

Q. WHAT WERE THE UNDERLYING REQUIREMENTS THAT YOU THOUGHT YOU HAD TO SATISFY IN CREATING THIS APPROACH?

A. I wanted an approach that would satisfy all the requirements that Congress established for setting prices for resale and unbundled networks. Specifically, the approach had to generate prices that would be based on cost, would be non-discriminatory, and would allow the Incumbent Local Exchange Carrier (ILEC) the opportunity to earn a reasonable profit. Furthermore, without endorsing all aspects of the pricing proposals contained in the FCC's *First Report And Order*, I wanted the pricing rule to satisfy the FCC's condition "that, under [a total element long-run incremental cost] methodology, incumbent LECs' prices for . . . unbundled network elements shall recover the forward-looking costs directly attributable to the specified element as well as a reasonable allocation of forward-looking common costs." That condition can be found at paragraph 62 of the *First Report And Order*.

Q. WHAT DO YOU CALL YOUR PRICING RULE?

A. The Market-Determined Efficient Component-Pricing Rule, or the M-ECPR.

Q. HOW DOES THE M-ECPR RELATE TO THE ECPR DESCRIBED AND REJECTED BY THE FCC IN ITS *FIRST REPORT AND ORDER*?

A. There are some very important differences. First, to avoid confusion, I will call the rule discussed by the FCC the "FCC-ECPR." The FCC-ECPR was properly rejected by the FCC. It was a very simplistic rule. It failed to take into account that there would be competitive entry in setting prices for unbundled network elements. This is a very significant omission when you consider that the entire purpose of the Telecommunications Act of 1996 is to foster competitive entry. That is why I have labeled my pricing rule the Market-Determined Efficient Component-Pricing Rule, or the M-ECPR. In other words, the M-ECPR takes full account of the competitive entry when setting prices for unbundled networks elements. In that respect, the M-ECPR benefits consumers and avoids all of the shortcomings that the FCC quite properly attributed to the FCC-ECPR.

Q. WHAT IS THE M-ECPR?

A. The M-ECPR is a market-based method for determining, as the FCC directed, the reasonable share of forward-looking common costs that should be allocated to the prices for the incumbent LEC's various unbundled network elements. The M-ECPR price for an unbundled network element is equal to the sum of its TELRIC plus its opportunity cost, as constrained by market

forces. Opportunity costs refers to the net return that an unbundled network element will bring GTE if it is not sold at wholesale to a competitor. Like the market, the M-ECPR does not permit GTE to charge a price for an unbundled element that exceeds that element's stand-alone cost. That market-determined outcome coincides precisely with the regulatory prescription in section 51.505(a)(1) of the rules announced in the FCC's *First Report and Order* -- namely, that "[t]he sum of a reasonable allocation of forward-looking common costs and the total element long-run incremental cost of an element shall not exceed stand-alone costs associated with the element."

Q. DOES THE M-ECPR ALSO CALCULATE THE PRICE FOR GTE'S WHOLESALE SERVICES RESOLD TO COMPETITORS?

A. Yes. Again, the M-ECPR is consistent with the resale provisions contained in the Telecommunications Act and the *First Report And Order*. In contrast, AT&T has proposed the "Avoided Cost Pricing Rule," which is an overt attempt to secure a substantial entry subsidy to be paid by GTE.

Q. IS THE M-ECPR A COMPLETE SOLUTION TO ALL PRICING PROBLEMS?

A. No. The M-ECPR does not alter the traditional problems faced by a regulated local exchange carrier operating with a retail rate structure that contains cross subsidies mandated by regulation.

Q. WHAT IS THE PRACTICAL EFFECT OF THAT LIMITATION?

A. The M-ECPR does not afford GTE the opportunity to recover fully its forward-looking common costs, as would regulated rates absent competitive entry. Facilities-based entry and M-ECPR pricing of unbundled network elements will, therefore, permit stranded costs to arise. I define stranded costs to be the present value of the firm's net revenues under regulation minus the present value of the firm's net revenues under competition. To ensure that GTE receives a reasonable opportunity to recover all of its forward-looking common costs, it is necessary for this arbitration to establish a competitively neutral, non-bypassable end-user charge.

Q. WHAT KINDS OF FORWARD-LOOKING COSTS WOULD THE END-USER CHARGE RECOVER?

A. There are six categories of costs that GTE cannot fully recover through competitive M-ECPR prices but nonetheless will incur on a forward-looking basis to discharge its obligation to serve.

Q. WHAT ARE THEY?

A. They are:

(1) shared costs of network operation, incurred among two or more (but not all) of GTE's services, but not wholly attributable to any single service;

(2) common costs of network operation, incurred among all of GTE's services;

(3) losses incurred in GTE's provision of services to preferred classes of customers at regulated prices that are below GTE's incremental cost of providing such services;

(4) costs incurred as a result of incumbent burdens that GTE continues to bear after the advent of competition, but which GTE's competitors are not required to bear, such as carrier-of-last-resort obligations;

(5) costs incurred by GTE to accomplish government-mandated unbundling of network elements or resale of network services; and

(6) losses incurred when GTE's avoided costs are incorrectly overstated and are used to establish the discount that competitors receive when purchasing wholesale services from GTE.

Q. WOULD THE END-USER CHARGE ALLOW GTE TO RECOVER MONOPOLY PROFITS OR COSTS INEFFICIENCIES?

A. No. Its sole purpose is to allow GTE a reasonable opportunity to recover the costs that I have just described. It is interesting to note, also, that AT&T has not offered evidence that GTE has any monopoly profits or cost inefficiencies. Without an end-user charge, GTE would be assured of incurring *losses* on its sale of unbundled network elements.

Q. DO YOU EXPECT THAT THE END-USER CHARGE WILL NECESSARILY BE A PERMANENT RECOVERY MECHANISM?

A. No. The need for an end-user charge will diminish over time as the incumbent LEC recovers the cost of its past investment. Other Commission actions, such as rate rebalancing, can reduce the need for such a charge.

Q. WHAT IS YOUR ASSESSMENT OF THE *FIRST REPORT AND ORDER* RELEASED BY THE FCC ON AUGUST 8, 1996?

A. The language of the *First Report and Order* could be read to preclude GTE from recovering all of its forward-looking costs. It also makes no effort to allow GTE to recover its historic costs. Prohibiting GTE from recovering these costs would violate the plain terms of the 1996 Act that requires incumbent local exchange carriers to be compensated for their costs. Even more, it would lead to a taking of GTE's property.

Q. DOES YOUR REPORT PRESENT PRICES COMPUTED ACCORDING TO ONE OF THE RECOMMENDED METHODS OF ALLOCATING FORWARD-LOOKING COMMON COSTS THAT IS CONTAINED IN THE FCC'S *FIRST REPORT AND ORDER*?

A. Yes. Although I do not endorse any version of fully distributed cost (FDC) pricing, the report calculates prices for GTE's unbundled network elements using a procedure that is equivalent to the FCC's recommended method of allocating forward-looking

common costs according to a fixed percentage markup over total element long run incremental cost.

Q. CAN YOU GENERALIZE CONCEPTUALLY THE DIFFERENCES BETWEEN AT&T'S PRICING RULE AND THE M-ECPR THAT YOU ENDORSE?

A. Yes. First, AT&T's proposal would protect competitors and promote new forms of regulation that would attempt to "manage" competition. GTE's proposal will promote competition and efficient entry, and it will allow regulation to recede as competition develops.

Second, although both parties agree that the pricing of unbundled network elements should be based on economic costs, there is disagreement on what is the proper definition of economic costs. AT&T argues that economic costs should be limited to GTE's Total Service Long Run Incremental Costs (TSLRIC). GTE maintains that economic costs should also include opportunity costs, as constrained by the market. The attached report demonstrates that economic costs include market-determined opportunity costs.

Third, although both parties agree that the pricing of resale services should equal the retail rate minus avoided retail costs in

accordance with the 1996 Act, AT&T further proposes (1) to subtract unsubstantiated "product inefficiencies" and "excess profit" and (2) to exclude GTE's wholesaling costs. Moreover, AT&T asserts that per-unit avoided costs should be calculated assuming GTE ceases to provide retail services. GTE maintains that net avoided retail costs (that is, avoided retail costs net of any additional wholesale costs) should be the discount; moreover, the size of the discount should be determined on the basis of a reasonable projection of the amount of retail services that GTE will no longer provide as a result of reseller entry. The accompanying report will show that a discount equal to the net avoided retail costs is the economically correct discount.

Q. HOW WOULD YOU SUMMARIZE THE CHOICE THAT THE COMMISSION MUST MAKE BETWEEN AT&T'S PRICING RULE AND YOUR PRICING RULE?

A. AT&T's pricing formulas would deny GTE recovery of its total costs, require GTE's shareholders to subsidize AT&T's entry into local exchange telephony, and confiscate the private property of GTE's shareholders. GTE's pricing formulas would meet the deregulatory objectives set forth in the Telecommunications Act of 1996, satisfy the FCC's recommendation that prices for wholesale services and unbundled network elements be priced on the basis of forward-looking costs, and allow competition and economically efficient entry into the marketplace.

Q. DO YOU HAVE ANY ATTACHMENTS TO YOUR TESTIMONY?

A. Yes. I attach as Exhibit No. DSS-2, and incorporate into my testimony, "An Economic Framework for Implementing the Pricing Provisions of the Telecommunications Act of 1996," which I have prepared with Michael J. Doane, J. Gregory Sidak, Daniel F. Spulber, and Michael A. Williams.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

GTE FLORIDA INCORPORATED

DIRECT TESTIMONY DAVID S. SIBLEY

DOCKET NO. 960980-TP

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is David S. Sibley, University of Texas at Austin, 22nd and Speedway, Austin, TX, 78712.

Q. ARE YOU THE SAME DAVID S. SIBLEY WHO FILED DIRECT TESTIMONY IN DOCKET 960847-TP, THE ARBITRATION BETWEEN GTE FLORIDA INCORPORATED (GTE) AND AT&T OF THE SOUTHERN STATES (AT&T)?

A. Yes, I am. That Testimony was filed on September 10, 1996.

Q. WHAT WAS THE PURPOSE OF THAT EARLIER-FILED DIRECT TESTIMONY?

A. That Testimony provided an economic analysis of the issues to be arbitrated between AT&T and GTE.

Q. ARE THOSE ISSUES SIMILAR TO THOSE TO BE ARBITRATED BETWEEN MCI AND AT&T IN THIS PROCEEDING?

A. Yes, it is my understanding that most of the issues involved in the arbitration are the same. For this reason, the Commission has consolidated the MCI and AT&T arbitrations.

Q. DO THE PRINCIPLES SET FORTH IN YOUR DIRECT TESTIMONY IN GTE'S RESPONSE TO AT&T'S PETITION APPLY WITH EQUAL FORCE TO THIS ARBITRATION WITH MCI?

A. Yes. My conclusions there regarding the proper way to set prices for wholesale services and unbundled network elements under the Telecommunications Act of 1996 do not change with the identity of the company requesting resale or unbundling. As such, to avoid undue repetition--particularly in view of the consolidation of the MCI and AT&T cases--I am adopting my Direct Testimony in the AT&T case as my Direct Testimony in this proceeding with MCI. Any MCI-specific issues and positions will be addressed in my Rebuttal Testimony.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

(Transcript continues in sequence in Volume 7.)