BellSouth Telecommunications, Inc.
Suite 2101
333 Commerce Street
Nashville, Tennessee 37201-3300

615 214-6301
Fax 615 214-7406

Guy M. Hicks
General Counsel

October 15, 1999

VIA HAND DELIVERY

David Waddell, Executive Secretary
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, TN 37238

Re: *Petition by ICG Telecom Group, Inc. for Arbitration of an Interconnection Agreement with BellSouth Telecommunications, Inc. pursuant to Section 252(b) of the Telecommunications Act of 1996*
Docket No. 99-00377

Dear Mr. Waddell:

Enclosed are the original and thirteen copies of the Direct Testimony of William Taylor and Alphonso Varner on behalf of BellSouth Telecommunications, Inc. Copies of the enclosed are being provided to counsel of record for all parties.

Very truly yours,

Guy M. Hicks

Guy M. Hicks

GMH:ch
Enclosure

CERTIFICATE OF SERVICE

I hereby certify that on October 15, 1999, a copy of the foregoing document was served on the parties of record, via the method indicated:

[✓] Hand
[ ] Mail
[ ] Facsimile
[ ] Overnight

Gary Hotvedt, Esquire
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, TN 37243-0500

[✓] Hand
[ ] Mail
[ ] Facsimile
[ ] Overnight

Henry Walker, Esquire
Boult, Cummings, et al.
414 Union Ave., #1600
P. O. Box 198062
Nashville, TN 37219-8062

Gary M. Hicks (ch)

FILE

177508

BEFORE THE
TENNESSEE REGULATORY AUTHORITY

IN RE:	)	
PETITION FOR ARBITRATION OF ICG TELECOM	)	
GROUP, INC. WITH BELLSOUTH	)	**DOCKET NO. 99-00377**
TELECOMMUNICATIONS, INC. PURSUANT TO	)	
THE TELECOMMUNICATIONS ACT OF 1996	)	

DIRECT TESTIMONY

OF

WILLIAM E. TAYLOR, Ph.D.

ON BEHALF OF

BELLSOUTH TELECOMMUNICATIONS, INC.

OCTOBER 15, 1999

n/e/r/a
Consulting Economists

DIRECT TESTIMONY OF WILLIAM E. TAYLOR, Ph.D.

TABLE OF CONTENTS

ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF WILLIAM E. TAYLOR, Ph.D.

BEFORE THE TENNESSEE REGULATORY AUTHORITY

DOCKET NO. 99-00377

OCTOBER 15, 1999

I. INTRODUCTION AND SUMMARY

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

A. My name is William E. Taylor. I am Senior Vice President of National Economic Research Associates, Inc. ("NERA"), head of its Communications Practice, and head of its Cambridge office located at One Main Street, Cambridge, Massachusetts 02142.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL, PROFESSIONAL, AND BUSINESS EXPERIENCE.

A. I have been an economist for twenty-five years. I graduated from Oak Ridge High School in 1964, earned a Bachelor of Arts degree from Harvard College in 1968, a Master of Arts degree in Statistics from the University of California at Berkeley in 1970, and a Ph.D. from Berkeley in 1974, specializing in Industrial Organization and Econometrics. For the past twenty-five years, I have taught and published research in the areas of microeconomics, theoretical and applied econometrics, which is the study of statistical methods applied to economic data, and telecommunications policy at academic and research institutions. Specifically, I have taught at the Economics Departments of Cornell University, the Catholic University of Louvain in Belgium, and the Massachusetts Institute of Technology. I have also conducted research at Bell Laboratories and Bell Communications Research, Inc.

I have participated in telecommunications regulatory proceedings before many state public service commissions, including the erstwhile Tennessee Public Service Commission and the Tennessee Regulatory Authority ("Authority"). Before the Tennessee Public

Service Commission, I testified in Docket No. 91-01173 (a theoretical analysis and appraisal of the proposed Tennessee Regulatory Reform Plan) on behalf of South Central Bell Telephone Company, and in Docket No. 95-02499 (on the definition and measurement of the cost of supplying universal service and economic principles for creating a competitively-neutral universal service fund) on behalf of BellSouth Telecommunications, Inc. More recently, before the Authority, I have testified in Docket No. 97-00309 (on the probable economic benefits from BellSouth's entry into interLATA market), on behalf of BellSouth Long Distance, Inc., and in Docket Nos. 96-00067 and 96-01331(on economic costing and pricing principles for resold and unbundled services), 97-01262 (on costing principles for pricing interconnection and unbundled network elements), and 97-00888 (on economic principles for sizing the state universal service fund), on behalf of BellSouth Telecommunications, Inc.

In addition, I have filed testimony before the Federal Communications Commission ("FCC") and the Canadian Radio-television Telecommunications Commission on matters concerning incentive regulation, price cap regulation, productivity, access charges, local competition, interLATA competition, interconnection and pricing for economic efficiency. Recently, I was chosen by the Mexican Federal Telecommunications Commission and Telefonos de Mexico ("Telmex") to arbitrate the renewal of the Telmex price cap plan in Mexico.

I have also testified on market power and antitrust issues in federal court. In recent work years, I have studied—and testified on—the competitive effects of mergers among major telecommunications firms and of vertical integration and interconnection of telecommunications networks.

Finally, I have appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer. My curriculum vita is attached as Exhibit WET-1.

Q. PLEASE DESCRIBE NERA, YOUR PLACE OF EMPLOYMENT.

A. Founded in 1961, National Economic Research Associates, Inc. ("NERA") is an internationally known economic consulting firm. It specializes in devising economic solutions to problems involving competition, regulation, finance, and public policy. Currently, NERA has more than 275 professionals (mostly highly experienced and

credentialed economists) with 10 offices in the U.S. and overseas offices in Europe (London and Madrid) and Sydney, Australia. In addition, NERA has on staff several internationally renowned academic economists as Special Consultants who provide their professional expertise and testimony when called upon.

The Communications Practice, of which I am the head, is a major part of NERA. For over 30 years, it has advised a large number of communications firms both within and outside the U.S. Those include several of the regional Bell companies and their subsidiaries, independent telephone companies, cable companies, and telephone operations abroad (e.g., Canada, Mexico, Europe, Japan and East Asia, Australia, and South America). In addition, this practice has supported a large number of legal firms and the clients they represent, and routinely provided testimony or other input to governmental entities like the Federal Communications Commission ("FCC"), the Department of Justice, the U.S. Congress, several state regulatory commissions, foreign regulatory commissions, and courts of law. Other clients include industry forums like the Unites States Telephone Association.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by BellSouth Telecommunications, Inc. ("BellSouth")—an incumbent local exchange carrier ("ILEC")—to provide an economist's perspective on various issues awaiting resolution in this proceeding. The salient issues I address in my testimony concern reciprocal compensation for traffic sent to Internet service providers ("ISPs").

Q. PLEASE SUMMARIZE YOUR POSITIONS ON THOSE ISSUES.

A. My positions on the issues are summarized as follows:

1. The FCC has ruled that ISP-bound calls are jurisdictionally interstate, not local. Therefore, the proper model of interconnection that applies to ISP-bound calls is not that between an originating ILEC and a terminating CLEC, but that between an originating ILEC and an inter-exchange carrier ("IXC").

2. Regardless of whether ISP-bound calls are jurisdictionally local or interstate, the correct economic perspective on inter-carrier compensation rests on the principle of cost causation. On the basis of that principle alone, reciprocal compensation should not be paid by the originating ILEC for ISP-bound calls. Instead, the ISP should compensate that carrier (and any other carrier that switches the ISP-bound call) for the end-to-end cost caused by the ISP customer, and recover that cost directly from the ISP customer.

3. The ISP is not an end-user (of a serving CLEC) but rather a carrier. Therefore, like the IXC that pays carrier access charges to partially defray the cost of a long distance call, the ISP should pay analogous usage-based charges to defray costs incurred by other carriers on its behalf to switch an ISP-bound call.

4. Persisting with reciprocal compensation (from the ISP customer's originating ILEC to the CLEC that ultimately switches the call to the ISP) would generate an inefficient subsidy for Internet use, distort the local exchange market, and generate unintended arbitrage opportunities for CLECs. These would be opportunities for CLECs to specialize in serving ISPs with the sole aim of accumulating reciprocal compensation revenues.

5. Based on the FCC ruling that ISP-bound calls are primarily interstate, three states (Massachusetts, New Jersey, and South Carolina) have recently declared that the payment of reciprocal compensation by ILECs originating ISP-bound calls be stopped. Massachusetts regulators, in particular, have noted that by encouraging arbitrage opportunities, the reciprocal compensation regime of inter-carrier compensation for ISP-bound calls subverts real local exchange competition.

II. INTER-CARRIER COMPENSATION FOR ISP-BOUND CALLS

Q. SHOULD RECIPROCAL COMPENSATION BE PAID FOR ISP-BOUND CALLS?

A. No, for two reasons. First, as the FCC has already correctly determined, calls made to Internet destinations are much more likely to be jurisdictionally interstate than local.[1] Second, and more importantly, the economic principle of cost causation implies that the

[1] FCC, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996* and *Inter-Carrier Compensation for ISP-Bound Traffic*, CC Docket Nos. 96-98 and 99-68, Declaratory Ruling in CC Docket No. 96-98 and Notice of Proposed Rulemaking in CC Docket No. 99-68 ("Internet Traffic Order"), released February 26, 1999.

relationship between the end-user and the ISP is analogous to that between the end-user and an inter-exchange carrier ("IXC"). In fact, regardless of the exact jurisdictional status of Internet calls, there are sound *economic* reasons to (1) reject reciprocal compensation for such calls and (2) require that the ISP pay usage-based charges to the ILEC and/or CLEC akin to the access charges currently paid by IXCs to the ILEC for all long distance calls carried.

Q. PLEASE EXPLAIN THE FCC'S FINDING THAT ISP-BOUND CALLS ARE JURISDICTIONALLY MORE LIKELY TO BE INTERSTATE.

A. The FCC recently stated that it:

> traditionally has determined the jurisdictional nature of communications by the *end points* of the communication and consistently has rejected attempts to divide communications at any intermediate points of switching or exchanges between carriers.[2]

Based on this premise, the FCC explained that calls made to the Internet:

> do not terminate at the ISP's local server ... but continue to the ultimate destination or destinations, specifically at an Internet website that is often located in another state. The fact that the facilities and apparatus used to deliver traffic to the ISP's local servers may be located within a single state does not affect [the FCC's] jurisdiction. ... Indeed, in the vast majority of cases, the facilities that incumbent LECs use to provide interstate access are located entirely within one state.[3]

The FCC's reasoning is absolutely correct. A call is said to be terminated when it is *delivered to the called party's premises*.[4] In this sense, an ISP-bound call may transit the switch of the carrier serving the ISP, but the call is then delivered to the Internet web site which, as the FCC noted, may be located outside the state in which the call originated. The FCC made it perfectly plain that what matters for determining jurisdiction is the end-to-end transmission itself, not how many different carriers or facilities handle the Internet call on

[2] Internet Traffic Order, ¶10. Emphasis added.

[3] *Id.*, ¶12. Footnotes omitted.

[4] FCC, *In the Matter of Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order ("Local Competition Order"), released August 19, 1996, ¶1040.

its way.

The FCC also noted that while jurisdiction is determined unambiguously when a call originates and terminates entirely within the circuit-switched network, it is a very different matter when the call crosses over from the circuit-switched network into the packet-switched network (that comprises the Internet's backbone network and Internet web sites) along the way to its destination.[5] This is particularly important because the packet-switched network is a "connectionless" network in which termination, in the sense understood within the circuit-switched network, technically does not happen. For example, before it is over, the same Internet call may reach several destination points on the Internet. Also, calls are switched or, more accurately, "routed" over the packet-switched network in a dynamic manner. This means that the Internet call, rearranged in the form of data packets of given length, are sent in a scrambled manner along different available paths within the backbone network, and the "call" is then reconstituted when all of the packets reach the intended Internet destination. This method of transport and routing is nothing like the termination that occurs within the circuit-switched network where, for every call originated and terminated, a dedicated call path is established for the duration of the call. These crucial differences make it all the more likely that an Internet call will cross several state boundaries—and in a random manner—before it reaches its destination. At best, such a call would be "jurisdictionally mixed," as the FCC has already correctly determined.

Q. PLEASE EXPLAIN THE PRINCIPLE OF COST CAUSATION AND ITS RELEVANCE TO COST RECOVERY?

A. Cost causation is the fundamental economic principle on which all pricing and cost recovery efforts should be based. This principle asks two questions: (1) who or what has caused the cost in question (cost source)? and (2) how much is the cost in question (level of cost recovery)? Once the person or activity that gives rise to a cost has been identified, the amount of cost in question is recovered entirely from that source. This linkage between

[5] Internet Traffic Order, ¶18.

cost recovery and the cost source stands on its own, and makes no reference whatsoever to the distribution of benefits. That is, even if an activity provides benefits to others besides the cost-causer, cost should be recovered fully from its source and not from incidental beneficiaries. For example, if my decision to travel to Nashville causes me to employ resources (airline, rental car, lodging, etc.) that cost $2,000 between them, then that entire cost should be recoverable from me, the cost-causer. Whether someone or something else benefits in any material or other way from my travel to Nashville is irrelevant for determining what the cost of that travel is or who should pay the price to recover that cost.[6] In general, the prices that consumers pay should reflect the costs caused by their consumption of specific goods or services.

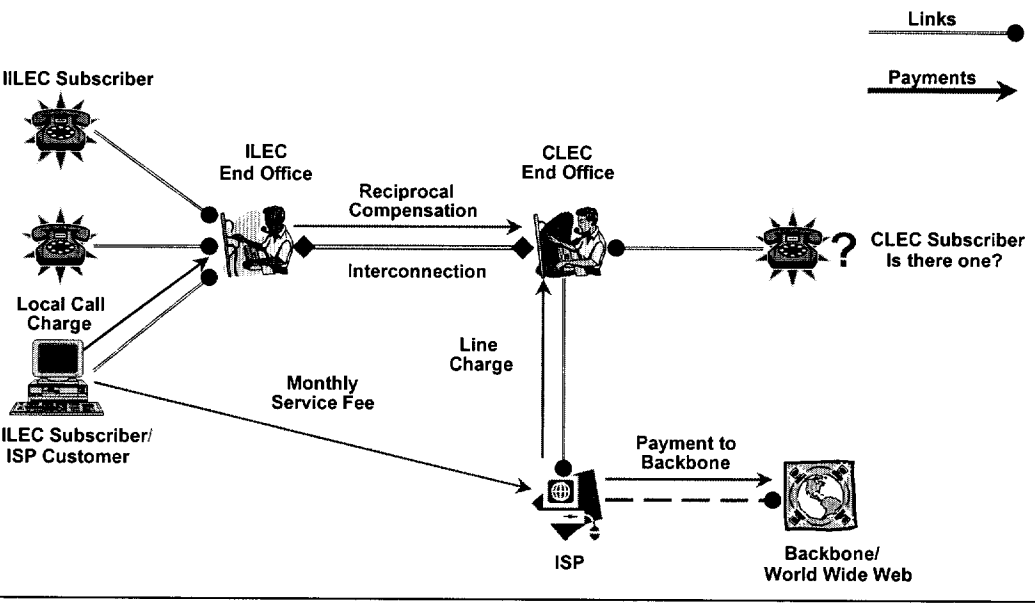
It is well known that consumers decide what to buy and how much to buy on the basis of prices they pay. Their act of buying also causes cost. To ensure that society's scarce resources are put to their best use, and that only the goods and services of highest value to society are produced and consumed, consumers (cost-causers) must be made to pay prices that fully reflect the costs they cause. Application of the cost causation principle thus leads to prices that fully recover costs and, at the same time, ensure that consumption occurs—and resources are used—efficiently.

[6] The airline or the hotel may "benefit" from my using them in the course of my travel to—and within—Nashville. So would every hot dog stand, souvenir shop, or amusement park that I visit while I am there. However, none of these would be sources of the cost of my travel and should, therefore, not be required to share in the recovery of the cost caused by my travel. I alone should be held responsible for all costs linked to my travel.

Q. PLEASE EXPLAIN HOW COST CAUSATION DETERMINES THAT ISPS ARE ANALOGOUS TO IXCS AND SHOULD THUS PAY CHARGES SIMILAR TO ACCESS CHARGES.

A. To understand this point, it is first necessary to recapitulate the *erroneous* view of the network that underlies ICG's belief that an Internet call is jurisdictionally local. This view

Figure 1. Charges and Inter-Carrier Compensation (The ICG View):
Originating ILEC Pays Reciprocal Compensation to Terminating CLEC



of the network, depicted by Figure 1, rests on two crucial assumptions:

1. The ILEC subscriber that calls the Internet is acting as a customer of the originating ILEC,[7] even when the call goes through the ISP to which it pays monthly access fees.[8]
2. The ISP itself is an end-user (not a carrier) of the CLEC and the Internet call terminates

[7] I distinguish here between a "subscriber" and a "customer" in order to show cost causation. I subscribe to my local carrier in order to have *access* to the public switched network, but I act as a customer of that local carrier in order to *use* Call Waiting service or of a long distance carrier in order to *use* interstate long distance service. When I am a customer of the local carrier, I cause usage-based cost for that carrier. Similarly, I cause cost for the long distance carrier when I use *its* long distance service.

[8] An implicit assumption here is that the ISP has a point of presence in the local calling area of the Internet caller.

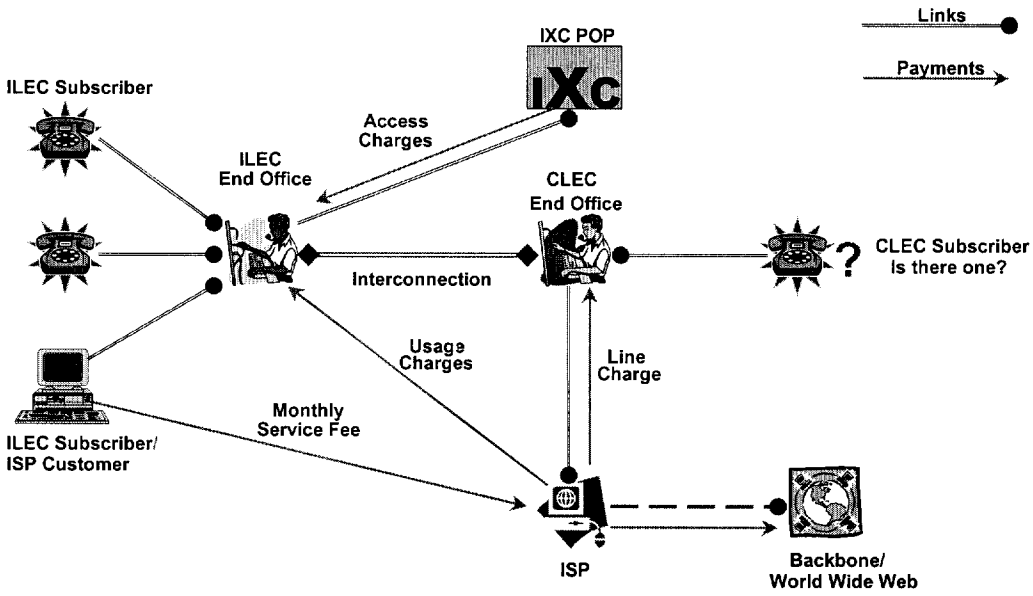
at the ISP.

Under these assumptions, the ILEC subscriber that makes the Internet call is an end-user of the originating ILEC (paying local residential rates for line charges) and the ISP is an end-user of the terminating CLEC (paying local business rates for line charges). The monthly Internet access charges paid by the ILEC subscriber to the ISP and the leased high-speed line charges paid by the ISP to Internet backbone networks are only incidental to this model and have no further role in determining jurisdiction. In this view of the network, therefore, the portion of the Internet call that lies entirely within the circuit-switched network, i.e., up to the ISP, *resembles* a local call under an interconnection arrangement between two local carriers. From this it would appear that the CLEC that terminates the ISP-bound call is entitled to reciprocal compensation under the FCC's rules.

This conclusion is fundamentally incorrect because it ignores cost causation, specifically, that the ILEC subscriber that makes the Internet call does so *while acting as a customer of the ISP* to which it pays monthly fees for Internet access and which, in return, markets directly to the customer and provides a point of presence in the customer's local calling area in order to provide easy access. Thus, the same subscriber that acts in the capacity of a customer of the originating ILEC when making a local voice call can act in the capacity of a customer of the ISP when making an Internet call. This situation is not an unfamiliar one; in fact, it is exactly analogous to the subscriber acting in the capacity of a customer of an IXC when making a long distance call. This analogy—and the proper cost causation view of Internet calling—is explained in Figure 2.

Figure 2. Charges and Inter-Carrier Compensation (The BellSouth View):

ISP Pays Compensation to Originating and Terminating LECs



This view of the network, depicted by Figure 2, rests on two different assumptions:

1. The ILEC subscriber that calls the Internet is acting as a customer of the ISP to which it pays monthly access fees, even though the call is facilitated by the originating ILEC and the CLEC serving the ISP.
2. The ISP is viewed as a *carrier*—akin to an enhanced service provider ("ESP")—that routes the Internet call through the backbone network to its final destination. The ISP performs standard carrier functions such as transport and routing, as well as maintains leased facilities within the backbone network. It is, therefore, *not* an end-user of the CLEC.

These assumptions appropriately depict the Internet-bound (or, ISP-bound) call as being much closer in character to an interstate long distance call than to a local call that is contained entirely within the local calling area. They also dispel the notion that an Internet-bound call is really two calls: the first call ending at the CLEC serving the ISP, and the second call routed by the ISP through the backbone network to its Internet destination.

Validity for this set of assumptions comes from the principle of cost causation. This

principle suggests that, *for the purposes of an Internet call*, the subscriber is properly viewed as a customer of the ISP, not of the originating ILEC (or even of the CLEC serving the ISP). The ILEC and the CLEC simply provide access-like functions to help the Internet call on its way, just as they might provide originating or terminating carrier access to help an IXC carry an interstate long distance call. Therefore, with the proper network model being analogous to ILEC-IXC interconnection (access), rather than to ILEC-CLEC interconnection, the proper form of inter-carrier compensation should be usage-based charges analogous to carrier access charges for long distance calls, rather than reciprocal compensation.

Q. PLEASE EXPLAIN THE CONTRAST BETWEEN THESE TWO "MODELS" OF INTERCONNECTION IN MORE DETAIL.

A. ***ILEC-CLEC Interconnection Model.*** When a BellSouth subscriber places a local call that terminates to a CLEC subscriber, what functions does BellSouth perform? Obviously, it originates the call by providing dialtone, local switching, and transport to the CLEC's point of interconnection. In addition, BellSouth has marketed the service to its subscriber (and customer of local calls), determining the price and price structure and other terms and conditions under which the customer decides to place the call. BellSouth will determine if the call has been completed, bill the customer for the call (if measured service applies) or for flat-rate service, answer questions regarding the bill or the service and collect money from the customer or lose the revenue if it is unable to collect from the customer. The story is precisely symmetric if the originating party is a CLEC customer and BellSouth or another CLEC terminates the call.

Thus, under ILEC-CLEC interconnection (see Figure 1), the originating subscriber is the cost-causing party and is the customer of the originating ILEC. That originating ILEC charges its cost-causing customer for the entire end-to-end call and compensates the CLEC that terminates the call. The originating ILEC's network costs plus the compensation it pays is—in theory—recovered from the local call charge it levies on its (originating) customer. The terminating CLEC's costs are recovered from the compensation payment it receives from the originating ILEC. In this arrangement, both parties recover their costs,

and the cost-causer is (again, in principle) billed for the entire cost he or she causes both carriers to incur. Thus, this arrangement is not an arbitrary regulatory or legal construction: for local interconnection between an ILEC and a CLEC, it makes economic sense. It could arise spontaneously in unregulated competitive markets where the ILEC serving the originating subscriber acts effectively as its agent in making necessary network and financial arrangements with a CLEC to terminate the call, just as General Motors may purchase goods or services from Ford or Bendix to include in an automobile purchased by a General Motors customer.

ILEC-IXC Interconnection Model. In contrast, when a BellSouth subscriber places a long distance call using, e.g., AT&T, BellSouth's function is limited to recognizing the carrier code (or implementing presubscription in its switch) and switching and transporting the call to AT&T's point of presence. While at some level, the functions its network performs are similar to those used to deliver local traffic to a CLEC[9], the economic functions are very different. It is AT&T that has marketed the service to its customer and determined the price, price structure, and other terms and conditions of the call. AT&T will send, explain, and collect the bill from the customer or lose the revenue if it cannot. Thus, under ILEC-IXC interconnection, the originating subscriber is, from an economic perspective, the customer of the IXC, not the originating ILEC.

When an ILEC (or CLEC) subscriber places long distance calls, he acts as a cost-causing customer of the IXC. Figure 2 shows that the ILEC subscriber, acting as an IXC customer, causes costs at various points in the networks involved: for the ILECs/CLECs that originate and terminate the long distance call, as well as for the IXC that transports it between local exchanges. The IXC receives revenue from the customer which it uses, in turn, to pay originating and terminating access charges to the ILECs/CLECs involved and to cover its own network and administration costs. In effect, the IXC acts as its customer's agent in assembling the necessary local exchange components of the call. The

[9] BellSouth supplies the customer's loop and provides dialtone, local switching, and transport to AT&T's point of presence.

ILECs/CLECs involved recover their costs from access charges. If more than one such carrier is involved in delivering the call from the end user to the IXC, they typically divide the access charges paid by the IXC in proportion to the costs incurred to provision the access portion of the call. Thus, in principle, the cost-causing customer faces a price that reflects all of the costs the call engenders, and all parties that incur costs to provision the call have a claim on the cost-causer's payment.

Thus, from an economic perspective, ILEC-IXC interconnection and ILEC-CLEC interconnection have some important similarities as well as some important differences. In both cases, the originating ILEC subscriber is the cost-causer, and that subscriber pays the supplier (the party with whom the subscriber has contracted for service) for the end-to-end service he receives. The major difference is that in the ILEC-CLEC local interconnection regime, the cost-causing ILEC subscriber is also a customer of the originating ILEC for local service, while in the ILEC-IXC regime, that cost-causing subscriber acts as a customer of the IXC for long distance service.

Q. WHY DOES ILEC-CLEC-ISP INTERCONNECTION RESEMBLE THAT BETWEEN THE ILEC AND THE IXC BUT NOT THAT BETWEEN THE ILEC AND THE CLEC?

A. The question at issue is: when multiple ILECs/CLECs combine to deliver traffic to an ISP, are they interconnecting in an ILEC-CLEC local interconnection regime or an ILEC-IXC interstate access regime? The FCC has characterized the link from an end-user to an ISP as an *interstate* access service and, absent other considerations, ISPs would be subject to charges analogous to interstate access charges. As far back as 1983, the FCC concluded that ESPs (which, today, would include ISPs) are "among a variety of users of access service" in that they "obtain local exchange services or facilities which are used, in part or in whole, for the purpose of completing interstate calls."[10]

The service provided by an ISP exists to enable that ISP's customers to access

[10] FCC, *In Re: MTS and WATS Market Structure*, CC Docket No. 78-72, Memorandum Opinion and Order ("MTS/WATS Order"), 1983.

information and information-related services stored on special computers or web servers at various locations around the world. The ISP typically facilitates such access by selling a flat-rated monthly or yearly Internet access service that, in most cases, calls for that ISP customer to make only a local call in order to reach the ISP's modems. Besides price, ISPs compete on the extent of geographic coverage, specifically, the number of local calling areas they can offer to ISP customers as possible points of connection ("POCs"), as well as on various components of service quality including provision of specialized information services.[11] The ISP markets directly to the originating ILEC's subscriber, attempting to maximize its number of customers and the amount of traffic *incoming* to it by publishing and advertising as many local calling numbers (at its POCs) as possible, and doing everything within its power to help the potential customer avoid having to incur per-minute or toll charges to have Internet access. If necessary, ISPs may use foreign exchange ("FX") lines to haul Internet traffic from considerable distances while still offering service to the ISP customer for the price of a local call.[12] Some ISPs offer 800 service for their customers to access their network when flat-rate local calling is unavailable, although there are some which impose a per-minute charge on the subscriber for such access. Some ISPs maintain Internet gateways for their customers and earn revenue from advertisers that depend more or less directly on the number of customers and the number of times its customers access advertised sites. The ISP bills its customers for their access and usage, and it is the ISP that loses money if it cannot collect from them. From an economic perspective, then, the party that causes the cost associated with ISP-bound traffic is the originating ILEC's

[11] The POCs are points at which the carrier serving the ISP (which may be a CLEC) terminates the ISP-directed call and routes it to the ISP.

[12] In that respect, the implicit contract is analogous to that which exists between a party with a toll-free "800" telephone number and other parties that are invited to call that number. The holder of the 800 number causes cost by signaling others to call him or her and accepts that cost by being willing to pay for it. Moreover, the holder of the 800 number may control the number of potential callers by choosing the method for disclosing the number (e.g., directory information, word of mouth, special invitation, etc.). Similarly, ISPs that use FX lines to provide local connectivity to distant customers signal a willingness to accept—and pay for—the generally higher cost of providing Internet access to those customers. They too can control the number of potential ISP customers by choosing both how many points of connection to offer for providing local connectivity and pricing options for its Internet access service.

subscriber who acts in the capacity of an ISP customer. In this sense, ISP-bound traffic has the same characteristics as IXC-bound traffic in the ILEC-IXC regime and has characteristics opposite to CLEC-bound traffic in the ILEC-CLEC local interconnection regime.

Q. ARE THERE DIFFERENCES BETWEEN AN IXC-BOUND CALL AND AN ISP-BOUND CALL?

A. A theoretical difference is that an ILEC subscriber that places a long distance call does not incur a local usage charge on the originating end, while an ISP customer, in principle, does. As a practical matter, however, this difference is irrelevant. Flat and measured basic local exchange rates have *not* been set to reflect the added cost of serving ISP-bound traffic, and a longstanding public policy concern with the level of basic exchange rates limits the ability of the regulator to recover these costs from all local exchange customers.[13] In addition, ISPs compete, in part, by providing local exchange numbers so that their customers can reach them without incurring per-minute charges from the serving ILEC or CLEC. Because ISP-bound traffic is caused by the ISP's customer, the ISP would generally bear the cost of the local connection, just as the IXC does for long distance traffic. And, in fact, competitive forces in the ISP market have encouraged ISPs to incur costs and lease facilities so that their customers do not pay additional local exchange costs. For both of these reasons, it would be naïve to think that the originating ILEC's subscriber fully compensates that ILEC for the end-to-end cost of the ISP-bound call.[14]

All of these are reasons why instead of the ILEC paying reciprocal compensation (or, a terminating charge) to CLECs as in the ILEC-CLEC local interconnection regime, for Internet calls by the ILEC subscriber, ISPs should pay the ILEC (and the CLEC that also

[13] Indeed, if the longer holding times of ISP-bound traffic impose costs different from those for ordinary voice traffic, raising prices for all local exchange customers to recover costs imposed by the ISP's customers would constitute a subsidy to ISP access. ILECs that originate ISP-bound traffic would effectively charge ISP customers less than incremental cost and ordinary voice customers more than otherwise for local exchange usage.

[14] This problem is likely to be even more acute when the ILEC's subscriber pays flat-rated local charges rather than per-call rates for local service.

serves it) usage charges analogous to carrier access charges paid by IXCs. Only such a payment will close the gap between the full cost of the call up to the ISP and the local call charge that is assessed to the end-user by the originating ILEC. In this economically correct view of inter-carrier compensation, the CLEC that switches Internet calls for the ISP is compensated not from reciprocal compensation paid by the originating ILEC but from usage-based charges paid to it by the ISP. Moreover, this economically correct perspective does *not* depend on the exact jurisdictional status of the ISP-directed call.

Q. DO ISPs PAY USAGE-BASED CHARGES (ANALOGOUS TO CARRIER ACCESS CHARGES) TODAY?

A. No. Even though the FCC has recently declared that ISP-bound traffic is, at best, jurisdictionally mixed and is, in most instances, interstate, no rulemaking has yet occurred to establish such charges for ISPs. Thus, it remains uncertain as to exactly when rules to this effect will be established. Also, ISPs are currently beneficiaries of an exemption from paying interstate carrier access charges that has been granted to ESPs since 1983.[15] I understand, however, that the exemption itself only applies to payment of access charges to ILECs. Thus, CLECs could, if they so chose, still assess access-like charges on ISPs that use their network.

Q. IN THE ABSENCE OF FCC ACTION TO ESTABLISH INTER-CARRIER COMPENSATION RULES, HOW HAVE THE INDIVIDUAL STATES ACTED?

A. For a period of time until the FCC's Internet Traffic Order was issued in early 1999, a number of states pursued their own rulemaking on the issue. Those states chose to adopt the ILEC-CLEC local interconnection view of the world and required that the originating ILEC pay reciprocal compensation to terminating CLECs for ISP-bound calls just as they

[15] The FCC has traditionally explained that exemption thus:

> to protect certain users of access services, such as ESPs, that had been paying the generally much lower business service rates from the rate shock that would result from immediate imposition of carrier access charges.

Internet Traffic Order, ¶5, and MTS/WATS Order, ¶715.

would for local voice calls. After the FCC's Internet Traffic Order was issued, regulators in Massachusetts, who had previously also adopted the local interconnection view, reversed themselves and declared the unqualified payment of reciprocal compensation for ISP-bound traffic to be antithetical to real competition in telecommunications.[16] Subsequently, regulators in New Jersey, in reversing an arbitrator's recommendation in October 1998, also ordered that reciprocal compensation not be paid for ISP-bound traffic.[17] More recently, in ruling on a BellSouth-ICG interconnection arbitration, regulators in South Carolina directed that reciprocal compensation *not* be paid for ISP-bound traffic sent by BellSouth to ICG.[18]

Q. WHAT REASONS DID MASSACHUSETTS REGULATORS GIVE FOR THIS REVERSAL?

A. The Massachusetts Department of Telecommunications and Energy explained its reasons for the reversal thus:

> The unqualified payment of reciprocal compensation for ISP-bound traffic, implicit in our October Order's construing of the 1996 Act, does not promote real competition in telecommunications. Rather, it enriches competitive local exchange carriers, Internet service providers, and Internet users at the expense of telephone customers or shareholders. This is done under the guise of what purports to be competition, but is really just an unintended arbitrage opportunity derived from regulations that were designed to promote real competition. A loophole, in a word. ... But regulatory policy ... ought not to create such loopholes or, once having recognized their effects, ought not leave them open.

[16] Massachusetts Department of Telecommunications and Energy ("DTE"), *Complaint of MCI WorldCom, Inc., Against New England Telephone and Telegraph Company d/b/a Bell Atlantic-Massachusetts for Breach of Interconnection Terms Entered Into Under Sections 251 and 252 of the Telecommunications Act of 1996*, Docket No. 97-116-C, Order ("Massachusetts ISP Compensation Order"), May 1999. The DTE ordered that all future reciprocal compensation payments by Bell Atlantic be placed in an escrow fund until final disposition on the matter of inter-carrier compensation. The CLECs serving ISPs in Massachusetts currently do not themselves receive any compensation for ISP-bound traffic.

[17] New Jersey Board of Public Utilities, *In the Matter of the Petition of Global Naps, Inc. for Arbitration of Interconnection Rates, Terms, Conditions and Related Arrangements with Bell Atlantic-New Jersey Pursuant to Section 252(b) of the Telecommunications Act of 1996*, Docket No. T098070426, Order, July 7, 1999.

[18] Public Service Commission of South Carolina, *Petition of ICG^DeltaCom Communications, Inc.,for Arbitration with BellSouth Telecommunications, Inc. Pursuant to the Telecommunications Act of 1996*, Docket No. 1999-259-C, Order No. 1999-690, Order on Arbitration, October 4, 1999.

> Real competition is more than just shifting dollars from one person's pocket to another's. And it is even more than the mere act of some customers' choosing between contending carriers. Real competition is not an outcome in itself—it is a means to an end. The "end" in this case is *economic efficiency* ... Failure by an economic regulatory agency to insist on true competition and economic efficiency in the use of society's resources is tantamount to countenancing and, to some degree, encouraging waste of those resources. Clearly, continuing to *require* payment of reciprocal compensation ... is not an opportunity to promote the general welfare. It is an opportunity only to promote the welfare of certain CLECs, ISPs, and their customers, at the expense of Bell Atlantic's telephone customers and shareholders.[19]

Q. WHY WOULD THE ILEC-CLEC LOCAL INTERCONNECTION REGIME WITH PAYMENT OF RECIPROCAL COMPENSATION FOR ISP-BOUND TRAFFIC HARM ECONOMIC EFFICIENCY AND FAIL TO PROMOTE TRUE COMPETITION?

A. The harm to economic efficiency in an ILEC-CLEC local interconnection regime with payment of reciprocal compensation for ISP-bound traffic occurs for three reasons:

1. Inefficient subsidization of Internet users by non-users.
2. Distortion of the local exchange market.
3. Creation of perverse incentives to arbitrage the system at the expense of basic exchange ratepayers.

Q. PLEASE EXPLAIN HOW THE ILEC-CLEC INTERCONNECTION REGIME FOR ISP-BOUND TRAFFIC COULD CAUSE INEFFICIENT SUBSIDIZATION OF INTERNET USERS BY NON-USERS.

A. The principle of cost causation requires that the *ISP customer* pay at least the cost its call imposes on the circuit-switched network.[20] Suppose inter-carrier compensation for ISP-bound traffic is treated as in the ILEC-CLEC interconnection regime (Figure 1). This regime assumes at the outset that the customer initiating the call has paid the originating

[19] *Id.* Emphasis added (in part) and in original (in part).

[20] It is assumed that the cost imposed by that customer for the packet-switched network portion of the Internet call is recovered through monthly access charges by the ISP serving that customer.

ILEC for the end-to-end carriage of the call, typically, the per-call equivalent of the local call charge. Out of what it receives, the ILEC would then pay reciprocal compensation to the CLEC that terminates to the ISP. This compensation is a per-minute call termination charge which, ideally, should reflect the incremental cost that the ILEC *avoids* by not having to terminate the call itself. In this scenario, problems can emerge from two sources.

First, if the local call charge is itself inefficient, e.g., it is below the incremental cost of carrying an end-to-end local voice call, then it cannot be sufficient to allow recovery of both the ILEC's incremental cost to originate the call and the CLEC's incremental cost to terminate the call. In other words, once reciprocal compensation has been paid, the ILEC would fail to recover its cost of carrying the ISP-bound call when the local call charge itself is inefficient. If the ILEC breaks even for *all* of its services in these circumstances, that would mean that Internet use (for which the cost exceeds revenue) is being subsidized by non-Internet and, most likely, non-local exchange services. This scenario is likely to play out whenever, in order to promote universal service, the local residential call charge in a state is set below the incremental cost of that call.

Second, if the cost to terminate an ISP-bound call is *less* than the cost to terminate the average voice call (on which most reciprocal compensation arrangements are based), then the CLEC would recover in excess of its cost. Even if the local per-call charge were compensatory, the ILEC could still end up with a higher cost liability than necessary (the sum of its own originating cost and the CLEC's inflated termination charge) and a net revenue deficit from carrying the ISP-bound call. Again, the Internet user would not be paying the cost he imposes on the originating ILEC (equivalent to receiving a subsidy).

This form of subsidization of Internet use within the circuit-switched network can inefficiently stimulate demand for Internet services and further aggravate the ILEC's tenuous position under the ILEC-CLEC interconnection regime. Additional negative consequences could be (1) greater congestion at local switches engineered for voice traffic generally and, as a result, poorer quality of voice traffic, and (2) opportunistic specialization by CLECs in the termination only of ISP-bound traffic. I discuss the resulting distortion of the local exchange market below.

Q. WHAT IS THE DILEMMA THAT THE ORIGINATING ILEC WOULD THEN FACE WITH RESPECT TO ITS OWN CUSTOMERS?

A. The originating ILEC's dilemma would then be to find a solution to the subsidization problem that is both economically correct and politically feasible. The subsidy to Internet use can be eliminated by charging differently for such use than for voice calls. Specifically, this would mean that Internet use is charged a higher rate than other local calls. While this solution would, in principle, appear economically feasible, it would require that ILECs be able to distinguish calls headed for Internet destinations from those headed for non-Internet destinations within the local calling area, and to charge for *each call* accordingly. Assuming that ILECs are able to make that distinction, such a solution would, nevertheless, mark a significant departure from the current practice of charging all customers within the same calling area the same averaged residential local rate on a flat-rated basis (i.e., not per call). A movement in this direction is far from certain at this time.

Q. HOW WOULD THE ILEC-IXC INTERCONNECTION REGIME WITH THE PAYMENT OF ACCESS-LIKE USAGE-BASED CHARGES SOLVE THIS PROBLEM?

A. In the ILEC-IXC regime (Figure 2), the ISP customer that initiates the call causes all of the costs that are incurred, and, except for the explicit subsidy to ISP access represented by the exemption from charges analogous to interstate access charges, remains responsible for paying costs of originating, transporting, and switching its traffic to the ISP. Because of the access charge exemption, ILECs and CLECs that jointly supply access services to ISPs are not compensated for those services but, in the ILEC-IXC regime, the ILECs and CLECs that jointly provision ISP-bound calls each contribute to the ISP access subsidy no more than their proportion of costs. This arrangement is competitively neutral because all ILECs and CLECs involved contribute to the subsidy rather than just the ILECs that originate ISP-bound traffic. In this regime, an ISP has no particular incentive to become a CLEC itself, nor is the competition among ILECs and CLECs to serve ISPs distorted by incentives to seek compensation for terminating calls.

Q. PLEASE EXPLAIN HOW THE ILEC-CLEC INTERCONNECTION REGIME FOR ISP-BOUND TRAFFIC COULD CAUSE THE LOCAL EXCHANGE MARKET TO BE DISTORTED.

A. Under the ILEC-CLEC interconnection regime, the compensation paid to CLECs evidently exceeds the cost they incur in terminating the traffic and also exceeds whatever costs BellSouth might save when CLECs terminate the traffic. That the prices do not reflect costs should not be surprising. In Tennessee, interconnection prices are based on BellSouth's forward-looking TELRIC costs of terminating traffic averaged over a wide range of end-users.[21] In fact, the cost of terminating traffic to particular end-users varies a great deal, depending upon their location and the characteristics of the traffic. When traffic is balanced[22] between the ILEC and the CLEC, the accuracy of the TELRIC study is less material; an ILEC that overpays to terminate traffic on the CLEC's network is compensated when the CLEC overpays to terminate traffic on the ILEC's network. Thus, when traffic is balanced, no individual ILEC or CLEC is helped or handicapped in competing for retail customers in the local exchange market by the requirement that interconnection prices be based on TELRICs averaged over all customers.

However, when traffic between the ILEC and the CLEC is grossly unbalanced, e.g., when the CLEC originates little or no traffic, the accuracy of the TELRIC study for the traffic served by that CLEC is critical. If the cost to BellSouth to deliver ISP-bound traffic to the ISP is the same as to a specialized CLEC collocated with the ISP, then paying reciprocal compensation at an averaged rate would cause BellSouth's total cost of local service to increase. This cost increase would not be offset by a similar increase in revenue from terminating the CLEC's traffic (because the CLEC does not originate any traffic). Thus, local exchange competition would be distorted by the inapplicability of the averaged TELRIC to ISP traffic; CLECs that primarily serve ISPs (and originate little or no traffic)

[21] Average holding times are significantly longer for ISP-bound traffic: roughly 20 minutes compared with 3 minutes for ordinary voice traffic. Thus, the cost of call setup on a per minute basis is roughly only one-seventh of the per minute cost of call setup for ordinary voice traffic.

[22] Traffic is said to be "balanced" when originating and terminating volumes are similar.

would receive revenues in excess of cost while ILECs (or even other CLECs) that serve all types of customers would experience an increase in costs without a commensurate increase in revenues.

Q. DOES THAT MEAN THAT RECIPROCAL COMPENSATION IS ILL-ADVISED BECAUSE TRAFFIC BETWEEN THE ORIGINATING ILEC AND THE CLEC THAT TERMINATES ISP TRAFFIC IS UNBALANCED?

A. Yes, but the problem here is not simply that traffic is unbalanced. First of all, ISP-bound traffic is *not* local and, therefore, not eligible for reciprocal compensation, a form of inter-carrier compensation reserved for local interconnection only. However, even on the matter of traffic balance, it is worth noting that reciprocal compensation was never envisioned as appropriate inter-carrier compensation when all traffic is essentially one-way. This would be particularly true when the true cost to terminate for the carrier that only *receives* traffic is actually lower than the termination cost (experienced by the carrier that *sends* traffic) on which a symmetrical compensation arrangement is based. But, even with balanced traffic, requiring reciprocal compensation payments for ISP-bound calls would violate the economic principle of recovering cost in accordance with cost causation.

Q. PLEASE EXPLAIN HOW THE ILEC-CLEC INTERCONNECTION REGIME FOR ISP-BOUND TRAFFIC COULD CREATE PERVERSE INCENTIVES TO ARBITRAGE THE SYSTEM AT THE EXPENSE OF BASIC EXCHANGE RATEPAYERS.

A. Arbitrage is frequently a response to a market distortion. As the DTE in Massachusetts clearly recognized, unintended arbitrage opportunities can easily emerge when competition in the local exchange market is distorted by basing inter-carrier compensation for ISP-bound traffic on the ILEC-CLEC local interconnection regime. When the compensation available to the CLEC for terminating ISP-bound traffic exceeds its actual cost of terminating that traffic, the CLEC will have a strong incentive to terminate as much ISP traffic as possible. The desire to maximize profits can bring forth some very inventive schemes that take advantage of this discrepancy but which distort market outcomes and

reduce the efficiency of the telecommunications network. For example, the CLEC's profits would increase whenever a BellSouth subscriber—or its computer—could be induced to call the ISP and remain on the line 24 hours a day.[23] Sensing this pure arbitrage profit opportunity, CLECs would also have a strong incentive—indeed, have as their *raison d'être*—to specialize only in terminating ISP-bound traffic, to the exclusion of offering any other type of local exchange service. These "ISP-specializing" CLECs can—and do—easily form a three-way axis with the sole purpose of generating revenues from reciprocal compensation: the CLECs themselves, ISPs that have their traffic terminated by those ISPs but may also receive a share of the reciprocal compensation revenues—the spoils of this arrangement—to ensure their loyalty and cooperation, and ISP customers on the originating ILEC's network that generate the ISP-bound traffic. Also, the ISPs themselves are better off if their customers obtain their non-Internet local telephone service not from the CLECs that terminate ISP-only traffic but from the ILEC or other CLECs that do not serve ISPs. This is likely to create a further distortion in the local exchange market, contrary to the vision of competition embodied in the Telecommunications Act of 1996 ("1996 Act").

This issue can be put in perspective as follows. Assume, for purposes of illustration, that (1) the ILEC serves 95 percent of end-users and the CLEC serves the other 5 percent and (2) end-users are generally similar in their use of (calls to) the Internet. If the ISP then contracts with the ILEC—rather than the CLEC—for delivery of Internet calls, then 95 percent of such calls would originate *and* terminate within the ILEC's network and, as a result, generate no reciprocal compensation payments. However, if that ISP were to contract with the CLEC for the delivery of Internet traffic, the same 95 percent of Internet calls originating within the ILEC's network would traverse the CLEC's switch(es) on its way to the ISP. This arrangement would, therefore, generate reciprocal compensation payments on 95 percent of Internet calls handled by the two networks. Clearly, a strong

[23] Dedicated (private line) connections that bypass the public switched network are most efficient for customers desiring "always-on" or 24 hour connectivity. Despite this fact, such connectivity is sometimes offered in a manner that involves traffic origination through an ILEC's switch and termination through an ISP-serving CLEC's switch. This arrangement is clearly less interested in efficiency or the best use of valuable network resources than it is in generating the maximum possible revenue from reciprocal compensation.

incentive would then exist for both the CLEC and the ISP to opt for the latter arrangement.

It is not surprising, therefore, that the DTE in Massachusetts felt compelled to opine:

> We note also that *termination* of the obligation for reciprocal compensation payments for ISP-bound traffic (because that traffic is no longer deemed local) removes the incentive for CLECs to use their regulatory status "solely (or predominately)" to funnel traffic to ISPs.[24]

Q. HAVE REGULATORS TAKEN EXPLICIT NOTE OF THE FACT THAT THESE ARBITRAGE OPPORTUNITIES ARISE BECAUSE PRICES (OR, COMPENSATION RATES) ARE OUT OF LINE WITH TERMINATION COSTS?

A. Yes. Where the cost of terminating traffic to a particular type of customer differs greatly from the average, the FCC has recognized the possibility of arbitrage and has declined to use the ILEC's TELRIC termination costs as a proxy for those of the CLEC:

> Using incumbent LEC's costs for termination of traffic as a proxy for paging providers' costs, when the LECs' costs are likely higher than paging providers' costs, might create uneconomic incentives for paging providers to generate traffic simply in order to receive termination compensation.[25]

Instead, the FCC has required separate cost studies to justify a cost-based termination rate which the FCC explicitly expects would be lower than the wireline ILECs' TELRIC-based rate. Note that the paging case also involves one-way calling; like ISPs, paging companies do not originate traffic.

More recently, the FCC has acknowledged that:

> efficient rates for inter-carrier compensation for ISP-bound traffic are not likely to be based entirely on minute-of-use pricing structures. In particular, pure minute-of-use pricing structures are not likely to reflect accurately how costs are incurred for delivering ISP-bound traffic.[26]

This is clear recognition of the fact that TELRIC-based rates are fundamentally unsound for inter-carrier compensation for ISP-bound traffic. Echoing this sentiment, the Massachusetts DTE has stated flatly that

[24] Massachusetts ISP Compensation Order.

[25] Local Competition Order, ¶1093.

[26] Internet Traffic Order, ¶29.

> The revenues generated by reciprocal compensation for ... incoming traffic are most likely in excess of the cost of sending such traffic to ISPs. ... Not surprisingly, ISPs view themselves as beneficiaries of this "competition" and argue fervently in favor of maintaining reciprocal compensation for ISP-bound traffic. However, the benefits gained, through this regulatory distortion, by CLECs, ISPs, and their customers do not make society as a whole better off, because they come artificially at the expense of others.[27]

Q. WHAT DO YOU CONCLUDE IN LIGHT OF THESE ACKNOWLEDGEMENTS?

A. In light of these acknowledgements, it is reasonable to expect that a fairer system of inter-carrier compensation may yet be more widely adopted for all forms of one-way traffic. The ILEC-IXC interconnection regime offers one such alternative. More importantly, under that alternative:

1. perverse incentives and unintended arbitrage opportunities are removed,
2. cost causation guides cost recovery (including the payment of access-like usage-based charges by ISPs to ILECs and CLECs that handle their traffic),
3. more efficient use is made of network resources,
4. inefficient entry for the sake of earning opportunistic arbitrage profits is prevented, and
5. true competition (undistorted by the gain from specializing in terminating one-way traffic) can be realized in the local exchange market.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

[27] Massachusetts ISP Compensation Order. Emphasis added.

Exhibit WET-1

WILLIAM E. TAYLOR

BUSINESS ADDRESS

National Economic Research Associates, Inc.
One Main Street
Cambridge, Massachusetts 02142

(617) 621-2615
(617) 621-0336 (fax)
william.taylor@nera.com

Dr. Taylor received a B.A. magna cum laude in Economics from Harvard College, an M.A. in Statistics and a Ph.D. in Economics from the University of California at Berkeley. He has taught economics, statistics, and econometrics at Cornell and the Massachusetts Institute of Technology and was a post doctoral Research Fellow at the Center for Operations Research and Econometrics at the University of Louvain, Belgium.

At NERA, Dr. Taylor is a Senior Vice President, heads the Cambridge office and is Director of the Telecommunications Practice. He has worked primarily in the field of telecommunications economics on problems of state and federal regulatory reform, competition policy, terms and conditions for competitive parity in local competition, quantitative analysis of state and federal price cap and incentive regulation proposals, and antitrust problems in telecommunications markets. He has testified on telecommunications economics before numerous state regulatory authorities, the Federal Communications Commission, the Canadian Radio-Television and Telecommunications Commission, federal and state congressional committees and courts. Recently, he was chosen by the Mexican Federal Telecommunications Commission and Telmex to arbitrate the renewal of the Telmex price cap plan in Mexico. Other recent work includes studies of the competitive effects of major mergers among telecommunications firms and analyses of vertical integration and interconnection of telecommunications networks. He has appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer.

He has published extensively in the areas of telecommunications policy related to access and in theoretical and applied econometrics. His articles have appeared in numerous telecommunications industry publications as well as *Econometrica*, the *American Economic Review*, the International *Economic Review*, the *Journal of Econometrics*, *Econometric Reviews*, the *Antitrust Law Journal*, *The Review of Industrial Organization*, and *The Encyclopedia of Statistical Sciences*. He has served as a referee for these journals (and others)

and the National Science Foundation and has served as an Associate Editor of the *Journal of Econometrics*.

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY
Ph.D., Economics, 1974

UNIVERSITY OF CALIFORNIA, BERKELEY
M.A., Statistics, 1970

HARVARD COLLEGE
B.A., Economics, 1968
(Magna Cum Laude)

EMPLOYMENT

NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC. (NERA)
1988- Senior Vice President, Office Head, Telecommunications Practice Director. Dr. Taylor has directed many studies applying economic and statistical reasoning to regulatory, antitrust and competitive issues in telecommunications markets. In the area of environmental regulation, he has studied statistical problems associated with measuring the level and rate of change of emissions.

BELL COMMUNICATIONS RESEARCH, INC. (Bellcore)
1983-1988 Division Manager, Economic Analysis, formerly Central Services Organization, formerly American Telephone and Telegraph Company. While at Bellcore, Dr. Taylor performed theoretical and quantitative research focusing on problems raised by the implementation of access charges. His work included design and implementation of demand response forecasting for interstate access demand, quantification of potential bypass liability, design of optimal nonlinear price schedules for access charges and theoretical and quantitative analysis of price cap regulation of access charges.

BELL TELEPHONE LABORATORIES
1975-1983 Member, Technical Staff, Economics Research Center. Performed basic research on theoretical and applied econometrics, focusing on small sample theory, panel data and simultaneous equations systems.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Fall 1977 Visiting Associate Professor, Department of Economics. Taught graduate courses in econometrics.

CENTER FOR OPERATIONS RESEARCH AND ECONOMETRICS
Université Catholique de Louvain, Belgium.
1974-1975 Research Associate. Performed post-doctoral research on finite sample econometric theory and on cost function estimation.

CORNELL UNIVERSITY
1972-1975 Assistant Professor, Department of Economics. (On leave 1974-1975.) Taught graduate and undergraduate courses on econometrics, microeconomic theory and principles.

MISCELLANEOUS

1985-1995	Associate Editor, *Journal of Econometrics*, North-Holland Publishing Company.
1990-	Board of Directors, National Economic Research Associates, Inc.
1995-	Board of Trustees, Treasurer, Episcopal Divinity School, Cambridge, Massachusetts.

PUBLICATIONS

"Smoothness Priors and Stochastic Prior Restrictions in Distributed Lag Estimation," *International Economic Review*, 15 (1974), pp. 803-804.

"Prior Information on the Coefficients When the Disturbance Covariance Matrix is Unknown," *Econometrica*, 44 (1976), pp. 725-739.

"Small Sample Properties of a Class of Two Stage Aitken Estimators," *Econometrica*, 45 (1977), pp. 497-508.

"The Heteroscedastic Linear Model: Exact Finite Sample Results," *Econometrica*, 46 (1978), pp. 663-676.

"Small Sample Considerations in Estimation from Panel Data," *Journal of Econometrics*, 13 (1980) pp. 203-223.

"Comparing Specification Tests and Classical Tests," Bell Laboratories Economics Discussion Paper, 1980 (with J.A. Hausman).

"Panel Data and Unobservable Individual Effects," *Econometrica*, 49 (1981), pp. 1377-1398 (with J.A. Hausman).

"On the Efficiency of the Cochrane-Orcutt Estimator," *Journal of Econometrics*, 17 (1981), pp. 67-82.

"A Generalized Specification Test," *Economics Letters*, 8 (1981), pp. 239-245 (with J.A. Hausman).

"Identification in Linear Simultaneous Equations Models with Covariance Restrictions: An Instrumental Variables Interpretation," *Econometrica*, 51 (1983), pp. 1527-1549 (with J.A. Hausman).

"On the Relevance of Finite Sample Distribution Theory," *Econometric Reviews*, 2 (1983), pp. 1-84.

"Universal Service and the Access Charge Debate: Comment," in P.C. Mann and H.M. Trebing (editors), *Changing Patterns in Regulation, Markets, and Technology: The Effect on Public Utility Pricing*. The Institute of Public Utilities, Michigan State University, 1984.

"Recovery of Local Telephone Plant Costs under the St. Louis Plan," in P.C. Mann and H.M. Trebing (editors), *Impact of Deregulation and Market Forces on Public Utilities*. The Institute of Public Utilities, Michigan State University, 1985.

"Access Charges and Bypass: Some Approximate Magnitudes," in W.R. Cooke (editor), *Proceedings of the Twelfth Annual Telecommunications Policy Research Conference*, 1985.

"Federal and State Issues in Non-Traffic Sensitive Cost Recovery," in *Proceedings from the Telecommunications Deregulation Forum*. Karl Eller Center, College of Business and Public Administration, University of Arizona, Tucson, Arizona, 1986.

"Panel Data" in N.L. Johnson and S. Kotz (editors), *Encyclopedia of Statistical Sciences*. John Wiley & Sons, New York, 1986.

"An Analysis of Tapered Access Charges for End Users," in P.C. Mann and H.M. Trebing (editors), *New Regulatory and Management Strategies in a Changing Market Environment*. The Institute of Public Utilities, Michigan State University, 1987 (with D.P. Heyman, J.M. Lazorchak, and D.S. Sibley).

"Efficient Estimation and Identification of Simultaneous Equation Models with Covariance Restrictions," *Econometrica*, 55 (1987), pp. 849-874 (with J.A. Hausman and W.K. Newey).

"Alternative NTS Recovery Mechanisms and Geographic Averaging of Toll Rates," in *Proceedings of the Thirteenth Annual Rate Symposium: Pricing Electric, Gas, and Telecommunications Services*. The Institute for the Study of Regulation, University of Missouri, Columbia, 1987.

"Price Cap Regulation: Contrasting Approaches Taken at the Federal and State Level," in W. Bolter (editor), *Federal/State Price-of-Service Regulation: Why, What and How?*, Proceedings of the George Washington University Policy Symposium, December, 1987.

"Local Exchange Pricing: Is There Any Hope?", in J. Alleman (editor), *Perspectives on the Telephone Industry: The Challenge of the Future*. Ballinger Publishing Company, Cambridge, Massachusetts, 1989.

"Generic Costing and Pricing Problems in the New Network: How Should Costs be Defined and Assessed," in P.C. Mann and H.M. Trebing (editors) *New Regulatory Concepts, Issues, and Controversies*. The Institute of Public Utilities, Michigan State University, 1989.

"Telephone Penetration and Universal Service in the 1980s," in B. Cole (editor), *Divestiture Five Years Later*. Columbia University Press, New York, New York, 1989 (with L.J. Perl).

"Regulating Competition for IntraLATA Services," in *Telecommunications in a Competitive Environment*, Proceedings of the Third Biennial NERA Telecommunications Conference, 1989, pp. 35-50.

"Costing Principles for Competitive Assessment," in *Telecommunications Costing in a Dynamic Environment*, Bellcore-Bell Canada Conference Proceedings, 1989 (with T.J. Tardiff).

"Optional Tariffs for Access in the FCC's Price Cap Proposal," in M. Einhorn (ed.), *Price Caps and Incentive Regulation in the Telecommunications Industry*. Kluwer, 1991 (with D.P. Heyman and D.S. Sibley).

"Alternative Measures of Cross-Subsidization," prepared for the Florida Workshop on Appropriate Methodologies for the Detection of Cross--Subsidies, June 8, 1991.

"Predation and Multiproduct Firms: An Economic Appraisal of the Sievers-Albery Results," *Antitrust Law Journal*, 30 (1992), pp. 785-795.

"Lessons for the Energy Industries from Deregulation in Telecommunications," *Proceedings of the 46th Annual Meeting of the Federal Energy Bar Association*, May 1992.

"Efficient Price of Telecommunications Services: The State of the Debate," *Review of Industrial Organization*, Vol. 8, pp. 21-37, 1993.

"Status and Results of Regulatory Reform in the U.S. Telecommunications Industry," in C.G. Stalon, *Regulatory Responses to Continuously Changing Industry Structures*. The Institute of Public Utilities, Michigan State University, 1992.

"Post-Divestiture Long-Distance Competition in the United States," *American Economic Review*, Vol. 83, No. 2, May 1993 (with Lester D. Taylor). Reprinted in E. Bailey, J. Hower, and J. Pack, *The Political Economy of Privatization and Deregulation*. London: Edward Elgar, 1994.

"Comment on 'Pricing of Inputs Sold to Competitors,' by W.J. Baumol and J.G. Sidak," *Yale Journal on Regulation*, Vol. 11, Issue 1, 1994, pp. 225-240 (with Alfred E. Kahn).

"Comments on Economic Efficiency and Incentive Regulation," Chapter 7 in S. Globerman, W. Stanbury and T. Wilson, *The Future of Telecommunications Policy in Canada*. Toronto: Institute for Policy Analysis, University of Toronto, April 1995.

"Revising Price Caps: The Next Generation of Incentive Regulation Plans," Chapter 2 in M.A. Crew (ed.) *Pricing and Regulatory Innovations under Increasing Competition*. Boston: Kluwer Academic Publishers, May 1996 (with T. Tardiff).

"An Analysis of the State of Competition in Long-Distance Telephone Markets," *Journal of Regulatory Economics*, May 1997, pp. 227-256 (with J.D. Zona).

"An Analysis of the Welfare Effects of Long Distance Market Entry by an Integrated Access and Long Distance Provider," *Journal of Regulatory Economics*, March 1998, pp. 183-196 (with Richard Schmalensee, J.D. Zona and Paul Hinton).

"Market Power and Mergers in Telecommunications," *Proceedings of the Institute of Public Utilities; 30th Annual Conference: Competition in Crisis: Where are Network Industries Heading?* The Institute of Public Utilities, Michigan State University, 1999.

TESTIMONIES

Access Charges

Florida Public Service Commission (Docket No. 820537-TP), July 22, 1983.
Arkansas Public Service Commission (Docket No. 83-042-U), October 7, 1985.
Public Utility Commission of Texas (Docket No. 8585), December 18, 1989.

Mexican Secretariat of Communications and Transport, affidavit re interconnection regulation with T.J. Tardiff, October 18, 1995.
Federal Communications Commission (CC Docket No. 96-98), affidavit July 8, 1996; *ex parte* letters filed July 22, 1996 and July 23, 1996.
Federal Communications Commission (CC Docket No. 96-262 et. al.) with Richard Schmalensee, January 29, 1997). Rebuttal February 14, 1997.
New York Public Service Commission (Case 94-C-0095 and 28425), Panel Testimony, May 8, 1997. Rebuttal Panel Testimony July 8, 1997.
Pennsylvania Public Utility Commission (Docket No. I-00960066), June 30, 1997. Rebuttal July 29, 1997. Surrebuttal August 27, 1997.
Connecticut Department of Public Utility Control (Docket No. 96-04-07), October 16, 1997.
Federal Communications Commission (*ex parte* CC Docket No. 96-262 *et. al.*), with Richard Schmalensee, January 21, 1998.
Federal Communications Commission (CCB/CPD 98-12), March 18, 1998.
Federal Communications Commission (CC Docket Nos. 96-262, 94-1, 97-250 and RM 9210), October 26, 1998. Reply November 9, 1998.
Federal Communications Commission (Docket No. 99-24), with Karl McDermott, January 20, 1999. Reply April 8, 1999.
Vermont Public Service Board (Docket No. 6167), May 20, 1999. Supplemental May 27, 1999.

Incentive and Price Cap Regulation

Federal Communications Commission (Docket No. 87-313), March 17, 1988.
Florida Public Service Commission (Docket No. 880069-TL), June 10, 1988.
Federal Communications Commission (Docket No. 87-313), August 18, 1988. Rebuttal November 18, 1988.
New Hampshire Public Service Commission (Docket 89-010), March 3, 1989.
Federal Communications Commission (Docket No. 87-313), June 9, 1989.
Federal Communications Commission (Docket No. 87-313), August 3, 1989. (2 filings)
New York State Public Service Commission (Case 28961 - Fifth Stage), September 15, 1989.
Georgia Public Service Commission (Docket No. 3882-U), September 29, 1989.
Federal Communications Commission (Docket 87-313), May 3, 1990.
Federal Communications Commission (Docket 87-313), June 8, 1990 (2 filings).
State of Maine Public Utilities Commission (Docket No. 89-397), June 15, 1990.
Montana Public Service Commission (Docket No. 90.8.46), October 4, 1990.
Federal Communications Commission (Docket 87-313), December 21, 1990.
Tennessee Public Service Commission, February 20, 1991.
Federal Communications Commission (Docket 87-313) with Alfred E. Kahn), June 12, 1991.
California Public Utilities Commission (Phase II of Case 90-07-037) with Timothy J. Tardiff, August 30, 1991. Supplemental testimony January 21, 1992.
Rhode Island Public Utilities Commission (Docket No. 1997), September 30, 1991.
Montana Public Service Commission (Docket No. 90.12.86), November 4, 1991. Additional testimony January 15, 1992.

Federal Communications Commission (Pacific Bell Tariff F.C.C. No. 128, Transmittal No. 1579) with T.J. Tardiff, April 15, 1992. Reply comments July 31, 1992.

California Public Utilities Commission (Docket No. I.87-11-033), with T.J. Tardiff, May 1, 1992.

Delaware Public Utilities Commission (Docket No. 33), June 22, 1992.

Florida Public Service Commission (Docket No. 920260-TL), December 18, 1992.

California Public Utilities Commission (Docket No. I.87-11-033), with T.J. Tardiff, April 8, 1993, reply testimony May 7, 1993.

Canadian Radio-Television and Telecommunications Commission (Docket No. 92-78), with T.J. Tardiff, April 13, 1993 (2 filings).

Federal Communications Commission (Petition for Declaratory Ruling and Related Waivers to Establish a New Regulatory Model for the Ameritech Region), April 16, 1993. Reply Comments, July 12, 1993.

Delaware Public Utilities Commission (Docket No. 33), June 1, 1993. Supplementary statement, June 7, 1993. Second supplementary statement," June 14, 1993.

Vermont Public Service Board (Dockets 5700/5702), September 30, 1993. Rebuttal testimony July 5, 1994.

Pennsylvania Public Utility Commission (Docket No. P-009350715), October 1, 1993. Rebuttal January 18, 1994.

Massachusetts Department of Public Utilities (Docket No. D.P.U. 94-50), April 14, 1994. Rebuttal October 26, 1994.

Federal Communications Commission (CC Docket 94-1), May 9, 1994. Reply June 29, 1994.

Federal Communications Commission (CC Docket 94-1) with R. Schmalensee, May 9, 1994. Reply June 29, 1994.

New York State Public Service Commission (Case 92-C-0665), panel testimony, October 3, 1994.

State of Maine Public Utilities Commission (Docket Nos. 94-123/94-254), December 13, 1994. Rebuttal January 13, 1995.

Canadian Radio-Television and Telecommunications Commission (Application of Teleglobe Canada for Review of the Regulatory Framework of Teleglobe Canada Inc.), December 21, 1994.

Kentucky Public Service Commission, testimony re concerning telecommunications productivity growth and price cap plans, April 18, 1995.

California Public Utilities Commission (U 1015 C), May 15, 1995. Rebuttal January 12, 1996.

State of Connecticut, Department of Public Utility Control (DPUC Docket No. 95-03-01), June 19, 1995.

Louisiana Public Service Commission (Docket No. U-17949, Subdocket E), July 24, 1995.

California Public Utilities Commission (Investigation No. I.95-05-047), with R.L. Schmalensee and T.J. Tardiff, September 8, 1995. Reply September 18, 1995.

Mississippi Public Service Commission (Docket No. 95-UA-313), October 13, 1995.

Louisiana Public Service Commission (Docket No. U-20883), November 21, 1995.

Federal Communications Commission (CC Docket No. 94-1), with T. Tardiff and C. Zarkadas, December 18, 1995. Reply March 1, 1996.

North Carolina Utilities Commission (Docket No. P-7, Sub 825; P-10, Sub 479), February 9, 1996.
Rhode Island Public Utilities Commission (Docket No. 2370), February 23, 1996. Rebuttal June 25, 1996.
Pennsylvania Public Utility Commission (Docket No. P-00961024), April 15, 1996. Rebuttal July 19, 1996.
Canadian Radio-Television and Telecommunications Commission, in response to CRTC Telecom Public Notice CRTC 96-8 (2 filings), June 10, 1996.
Federal Communications Commission (CC Docket 96-262 et al.), *ex parte* March 1997.
Federal Communications Commission (CC Docket Nos. 93-193, Phase 1, Part 2, 94-65), May 19, 1997.
Vermont Public Service Board (Docket no. 6000), January 19, 1998.
Colorado Public Utilities Commission (Docket No. 97A-540T, January 30, 1998. Rebuttal May 14, 1998.
California Public Utilities Commission, affidavit on economic principles for updating Pacific Bell's price cap plan. Filed February 2, 1998.
California Public Utilities Commission, reply comments on Pacific proposal to eliminate vestiges of ROR regulation and inflation minus productivity factor formula/index, filed June 19, 1998.
Pennsylvania Public Utility Commission (Docket No. P-00981410), October 16, 1998. Rebuttal February 4, 1999.
Comisión Federal de Telecomunicaciones de México ("Cofetel"), "Economic Parameter Values in the Telmex Price Cap Plan," arbitrator's report regarding the renewal of the price cap plan for Telmex, February 15, 1999.
Kentucky Public Service Commission (Docket No. 98-292), April 5, 1999.

Payphone

California Public Utilities Commission (Case 88-04-029), July 11, 1988.
Illinois Commerce Commission (Docket No. 88-0412), August 3, 1990. Surrebuttal December 9, 1991.
Michigan Public Service Commission (Case No. U-11756), October 9, 1998.
South Carolina Public Service Commission (Docket No. 97-124-C), December 7, 1998.
New Jersey Board of Public Utilities (OAL DOCKET Nos. PUCOT 11269-97N, PUCOT 11357-97N, PUCOT 01186-94N AND PUCOT 09917-98N), March 8, 1999. Surrebuttal June 21, 1999.

Economic Costing and Pricing Principles

Florida Public Service Commission (Docket No. 820400-TP), June 25, 1986.
Delaware Public Service Commission (Docket No. 86-20, Phase II), March 31, 1989. Rebuttal November 17, 1989.
Delaware Public Service Commission (Docket No. 89-24T), August 17, 1990.
Florida Public Service Commission (Docket No. 900633-TL), May 9, 1991.

Maryland Public Service Commission (Case No. 8584, Phase II), December 15, 1994. Additional direct testimony May 5, 1995. Rebuttal testimony filed June 30, 1995.

Canadian Radio-Television and Telecommunications Commission, Response to Interrogatory SRCI(CRTC) 1Nov94-906, "Economies of Scope in Telecommunications," January 31, 1995.

Pennsylvania Public Utility Commission (Docket Nos. A-310203F0002, A-310213F0002, A-310236F0002 and A-310258F0002), March 21, 1996.

State of Connecticut, Department of Public Utility Control (DPUC Docket No. 95-06-17), July 23, 1996.

New Jersey Board of Public Utilities (Docket No. TX95120631), August 15, 1996. Rebuttal filed August 30, 1996.

Florida Public Service Commission (Docket No. 980000-SP), September 24, 1998.

Nebraska Public Service Commission, on behalf of U S WEST (Application No. C-1628), October 20, 1998. Reply November 20, 1998.

Florida Public Service Commission (Docket No. 980000-SP), November 13, 1998.

Wyoming Public Service Commission (Docket No. 70000-TR-99), April 26, 1999.

Statistics

Arizona State Air Pollution Control Hearing Board (Docket No. A-90-02), affidavit December 7, 1990.

Expert testimony: Michigan Circuit Court (Case No. 87-709234-CE and 87-709232-CE), *Her Majesty the Queen, et al., v. Greater Detroit Resource Recovery Authority, et al.*, February, 1992.

Expert testimony: United States District Court, Eastern District of New York, *Jancyn Manufacturing Corp. v. The County of Suffolk*, January 11, 1994.

New York Public Service Commission (Case Nos. 93-C-0451 and 91-C-1249), July 23, 1996.

New York Public Service Commission (Cases 95-C-0657, 94-C-0095, 91-C-1174 and 96-C-0036): panel testimony, March 18, 1998. Rebuttal June 3, 1998.

InterLATA Toll Competition

Canadian Radio-Television and Telecommunications Commission (Docket No. 1990-73), November 30, 1990.

Federal Communications Commission (Docket 91-141), August 6, 1991.

Federal Communications Commission (CC Docket 92-141), July 10, 1992.

Federal Communications Commission (In the Matter of Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorization Therefor) with A.E. Kahn, November 12, 1993.

U.S. District Court for the District of Columbia *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, Affidavit with A.E. Kahn, May 13, 1994.

U.S. Department of Justice, *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, August 25, 1994.

Federal Communications *ex parte* filing in CC Docket No. 94-1, March 16, 1995.
Federal Communications Commission (CC Docket No. 79-252) *ex parte* comments with J. Douglas Zona, April 1995.
U.S. Department of Justice in *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, regarding Telefonos de Mexico's provision of interexchange telecommunications services within the United States, affidavit May 22, 1995.
U.S. Department of Justice in *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, regarding provision of interexchange telecommunications services to customers with independent access to interexchange carriers, May 30, 1995.
Expert testimony: *US WATS v. AT&T*, Confidential Report, August 22, 1995. Testimony October 18-20, 25-27, 30, 1995. Rebuttal testimony December 4, December 11, 1995.
Expert testimony: United States District Court for the Northern District of Texas, Dallas Division, Civil Action 394CV-1088D, *Darren B. Swain, Inc. d/b/a U.S. Communications v. AT&T Corp.* Confidential Report, November 17, 1995.
U.S. District Court, Southern District of New York, *Multi Communications Media Inc., v. AT&T and Trevor Fischbach* (96 Civ. 2679 (MBM)), December 27, 1996.
Federal Communications Commission (CC Docket Nos. 96-262 and 96-45), March 18, 1998.
Subcommittee on Communications of the Senate Committee on Commerce, Science and Transportation, *Statement* and oral testimony regarding long distance competition and Section 271 of the Telecommunications Act of 1996, March 25, 1998.
Federal Communications Commission (CC Docket No. 96-262), with P.S. Brandon, October 16, 1998.
Federal Communications Commission (CC Docket No. 96-262) with P.S. Brandon, October 22, 1998.

IntraLATA Toll Competition

New Jersey Board of Public Utilities (Docket No. TX90050349), December 6, 1990.
New York Public Service Commission (Case No. 28425) with T.J. Tardiff, May 1, 1992.
New Jersey Board of Regulatory Commissioners (Docket No. TX93060259), Affidavit October 1, 1993.
New Jersey Board of Public Utilities (Docket Nos. TX90050349, TE92111047, TE93060211), April 7, 1994. Rebuttal April 25, 1994. Summary Affidavit and Technical Affidavit April 19, 1994.
Delaware Public Utilities Commission (Docket No. 42), October 21, 1994.
Pennsylvania Public Utility Commission (Docket No. I-940034), panel testimony, December 8, 1994. Reply February 23, 1995. Surrebuttal March 16, 1995.
Public Service Commission of West Virginia (Case No. 94-1103-T-GI), March 24, 1995.
New Jersey Board of Public Utilities (Docket No. TX94090388), April 17, 1995. Rebuttal May 31, 1995.
New York Public Service Commission (Case 94-C-0017), August 1, 1995.
Rhode Island Public Service Commission (Docket No. 2252), November 17, 1995.

Massachusetts Department of Telecommunications and Energy (Docket No. 98-85), October 20, 1998.

Local Competition

Massachusetts Department of Public Utilities (Docket No. D.P.U. 94-185), May 19, 1995. Rebuttal August 23, 1995.
The Public Utilities Commission of Ohio (Case No. 94-1695-TP-ACE), May 24, 1995.
Vermont Public Service Board (Open Network Architecture Docket No. 5713), June 7, 1995. Rebuttal July 12, 1995.
New Jersey Board of Public Utilities (with Kenneth Gordon and Alfred E. Kahn), paper filed in connection with arbitration proceedings, August 9, 1996.
Florida Public Service Commission, "Local Telecommunications Competition: An Evaluation of a Proposal by the Communications Staff of the Florida Public Service Commission," with A. Banerjee, filed November 21, 1997.
Rhode Island Public Utilities Commission (Docket No. 2681), January 15, 1999.
Connecticut Department of Public Utility Control (Docket No. 95-06-17RE02), June 8, 1999.

Interconnection

Federal Communications Commission (Docket 91-141), September 20, 1991.
Maryland Public Service Commission (Case No. 8584) with A.E. Kahn, November 19, 1993. Rebuttal January 10, 1994. Surrebuttal January 24, 1994.
Maryland Public Service Commission (Case No. 8659), November 9, 1994.
Federal Communications Commission (CC Docket No. 95-185), affidavit March 4, 1996.
Federal Communications Commission (CC Docket No. 96-98), videotaped presentation on economic costs for interconnection, FCC Economic Open Forum, May 20, 1996.

Imputation

New Hampshire Public Service Commission (Docket DE 90-002), May 1, 1992. Reply testimony July 10, 1992. Rebuttal testimony August 21, 1992.
Canadian Radio-Television and Telecommunications Commission (Telecom Public Notice CRTC 95-36), August 18, 1995.
Massachusetts Department of Public Utilities (Docket No. D.P.U./D.T.E. 94-185-C), Affidavit February 6, 1998. Reply Affidavit February 19, 1998.
New Jersey Board of Public Utilities (BPU Docket No. TO97100808, OAL Docket No. PUCOT 11326-97N), July 8, 1998. Rebuttal September 18, 1998.
Vermont Public Service Board (Docket No. 6077), November 4, 1998.

Economic Depreciation

Florida Public Service Commission (Docket No. 920385-TL), September 3, 1992.

Louisiana Public Service Commission (Docket No. U-17949, Subdocket E), November 17, 1995. Surrebuttal, December 13, 1995, Further Surrebuttal, January 12, 1996.
Federal Communications Commission (CC Docket No. 98-137), with A. Banerjee, November 23, 1998.

Spectrum

Federal Communications Commission (ET Docket 92-100) with Richard Schmalensee, November 9, 1992.
Federal Communications Commission (Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, PR Docket No. 93-61), with R. Schmalensee, June 29, 1993.

Mergers

U.S. District Court for the District of Columbia, *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, with A.E. Kahn, January 14, 1994.
Vermont Public Service Board (Docket No. 5900), September 6, 1996.
Maine Public Utilities Commission (Docket No. 96-388), September 6, 1996. Rebuttal October 30, 1996.
New Hampshire Public Service Commission (Docket DE 96-220), October 10, 1996.
Federal Communications Commission (Tracking No. 96-0221), with Richard Schmalensee, October 23, 1996.
New York Public Service Commission (Case 96-C-0603), panel testimony, November 25, 1996. Reply December 12, 1996.
Federal Communications Commission (CC Docket No. 97-211), with R. Schmalensee, affidavit March 13, 1998. Reply affidavit May 26, 1998.
Connecticut Department of Public Utility Control, testimony regarding economic aspects of the SBC-SNET proposed change in control, filed June 1, 1998.
Federal Communications Commission (CC Docket No. 98-141), with R. Schmalensee, July 21, 1998. Reply November 11, 1998.
Alaskan Public Utilities Commission (Docket Nos. U-98-140/141/142 and U-98-173/174), February 2, 1999. Rebuttal March 24, 1999.
Pennsylvania Public Utility Commission (Docket Nos. A-310200F0002, A-311350F0002, A-310222F0002, A-310291F0003), April 22, 1999.
State Corporation Commission of Virginia, *In re: Joint Petition of Bell Atlantic Corporation and GTE Corporation for approval of agreement and plan of merger*, May 28, 1999.
Ohio Public Utility Commission (Docket No. 98-1398-TP-AMT), June 16, 1999.
Kentucky Public Service Commission (Docket No. 99-), July 9, 1999.

Broadband Services

Federal Communications Commission (File Nos. W-P-C 6912 and 6966), August 5, 1994.

Federal Communications Commission (File Nos. W-P-C 6982 and 6983), September 21, 1994.
Federal Communications Commission, affidavit examining cost support for Asymmetric Digital Subscriber Loop (ADSL) video dialtone market trial, February 21, 1995.
Federal Communications Commission, affidavit examining cost support for Bell Atlantic's video dialtone tariff, March 6, 1995.
Federal Communications Commission (File Nos. W-P-C 7074), July 6, 1995.
U.S. District Court for the Eastern District of Virginia (Alexandria Division), *United States Telephone Association, et al., v. Federal Communications Commission, et al.* (Civil Action No. 95-533-A), with A.E. Kahn , affidavit October 30, 1995.
Federal Communications Commission (CC Docket No. 95-145), October 26, 1995. Supplemental Affidavit December 21, 1995.
Expert testimony: *FreBon International Corp. vs. BA Corp. Civil Action*, No. 94-324 (GK), regarding Defendants' Amended Expert Disclosure Statement, filed under seal February 15, 1996.
Federal Communications Commission (CC Docket No. 96-46), *ex parte* affidavit, April 26, 1996.
Federal Communications Commission (CC Docket No. 96-112), affidavit filed May 31, 1996.
Federal Communications Commission (CC Docket No. 96-112), affidavit June 12, 1996.
Federal Communications Commission (CC Docket No. 96-46), July 5, 1996.
Pennsylvania Public Utility Commission, "Promises Fulfilled; Bell Atlantic-Pennsylvania's Infrastructure Development," filed January 15, 1999 (with Charles J. Zarkadas, Agustin J. Ros, and Jaime C. d'Almeida).

Rate Rebalancing

Canadian Radio-Television and Telecommunications Commission, Implementation of Regulatory Framework and Related Issues, Telecom Public Notices CRTC 94-52, 94-56 and 94-58, February 20, 1995.
Pennsylvania Public Utility Commission (Docket No. R-00963550), April 26, 1996. Rebuttal July 5, 1996.
Pennsylvania Public Utility Commission (Docket No. R-963550 C0006), August 30, 1996.
Public Utilities Commission of Ohio (Case No. 96-899-TP-ALT), February 19, 1997.

Universal Service

Louisiana Public Service Commission (Docket No. U-20883, Subdocket A), August 16, 1995.
Tennessee Public Service Commission (Docket No. 95-02499), October 20, 1995. Rebuttal October 25, 1995. Supplementary direct October 30, 1995. Supplementary rebuttal November 3, 1995.
Mississippi Public Service Commission (Docket No. 95-UA-358), January 17, 1996. Rebuttal February 28, 1996.
Federal Communications Commission (CC Docket No. 96-45) with Kenneth Gordon, April 12, 1996.

Federal Communications Commission (CC Docket No. 96-45) with Aniruddha Banerjee, August 9, 1996.
Federal-State Joint Board (CC Docket No. 96-45), *Remarks on Proxy Cost Models*, videotape filed January 14, 1997.
New Jersey Board of Public Utilities (Docket No. TX95120631), September 24, 1997. Rebuttal October 18, 1997.
Pennsylvania Public Utility Commission (Docket No. I-00940035), October 22, 1997.
Alabama Public Service Commission (Docket No. 25980), February 13, 1998.
North Carolina Utilities Commission (Docket No. P-100, SUB 133g), February 16, 1998. Rebuttal April 13, 1998.
Mississippi Public Service Commission (Docket No. 98-AD-035), February 23, 1998. Rebuttal March 6, 1998.
Tennessee Regulatory Authority (Docket No. 97-00888), April 3, 1998. Rebuttal April 9, 1998.
Florida Public Service Commission (Docket No. 980696-TP, September 2, 1998.

Classification of Services as Competitive

Maryland Public Service Commission (Case No. 8462), October 2, 1992.
State Corporation Commission of Virginia (Case No. PUC 950067), January 11, 1996.
Maryland Public Service Commission (Case No. 8715), March 14, 1996. Surrebuttal filed April 1, 1996.
Federal Communications Commission (File No. SCL-97-003), December 8, 1997.
Pennsylvania Public Utility Commission (Docket No. P-00971307, February 11, 1998. Rebuttal February 18, 1998.
State of Connecticut, Department of Public Utility Control (Docket No. 98-02-33), February 27, 1998.

Costing and Pricing Resold Services and Network Elements

Science, Technology and Energy Committee of the New Hampshire House of Representatives, "An Economic Perspective on New Hampshire Senate Bill 77," April 6, 1993.
Tennessee Public Service Commission (Docket No. 96-00067), May 24, 1996. Refiled with the Tennessee Regulatory Authority (Docket No. 96-00067), August 23, 1996.
New York Public Service Commission (Case Nos. 95-C-0657, 94-C-0095, 91-C-1174), May 31, 1996. Additional testimony June 4, 1996. Rebuttal July 15, 1996.
Louisiana Public Service Commission (Docket No. U-U-22020), August 30 1996. Rebuttal September 13, 1996.
Tennessee Regulatory Authority (Docket No. 96-01331), September 10, 1996. Rebuttal September 20, 1996.
New Jersey Board of Public Utilities (Docket No. TO96070519), September 18, 1996.
Pennsylvania Public Utility Commission (Docket No. A-310258F0002), September 23, 1996.
Massachusetts Department of Public Utilities (Docket Nos. D.P.U. 96-73/74, 96-75, 96-80/81, 96-83, 96-94), September 27, 1996. Rebuttal October 16, 1996.

New Jersey Board of Public Utilities (Docket No. TX95120631), September 27, 1996.
New Hampshire Public Service Commission (Docket DE 96-252), October 1, 1996.
Massachusetts Department of Public Utilities (Docket Nos. D.P.U. 96-73/74, 96-75, 96-80/81, 96-83, 96-94), October 11, 1996. Rebuttal October 30, 1996.
Federal Communications Commission (CC Docket No. 96-45), October 15, 1996.
New Hampshire Public Service Commission (Docket DE 96-252), October 23, 1996.
New Jersey Board of Public Utilities (Docket No. T096080621), November 7, 1996.
Alabama Public Service Commission (Docket No. 25677), November 26, 1996.
Delaware Public Utilities Commission, testimony re costs and pricing of interconnection and network elements, December 16,1996. Rebuttal February 11, 1997.
State Corporation Commission of Virginia, on behalf of Bell Atlantic-Virginia (Case No. PUC960), December 20,1996. Rebuttal June 10, 1997 (Case No. PUC970005).
Public Service Commission of Maryland (Case No. 8731-II), January 10, 1997. Rebuttal April 4, 1997.
Public Service Commission of the District of Columbia (Case No. 962), January 17, 1997. Rebuttal May 2, 1997.
Connecticut Department of Public Utilities (DPUC Docket No. 96-09-22), January 24, 1997.
Connecticut Department of Public Utilities (DPUC Docket No. 96-11-03), February 11, 1997.
Federal Communications Commission, response to FCC Staff Report on issues regarding Proxy Cost Models. Filed February 13, 1997.
Public Service Commission of West Virginia (Case Nos. 96-1516-T-PC, 96-1561-T-PC, 96-1009-T-PC, and 96-1533-T-T), February 13, 1997. Rebuttal February 20, 1997.
Public Utilities Commission of Ohio (Case No. 97-152-TP-ARB), April 2, 1997.
Maine Public Utilities Commission (Docket No. 97-505), April 21, 1997. Rebuttal October 21, 1997.
Vermont Public Service Board (Docket No. 5713), July 31, 1997. Rebuttal January 9, 1998. Surrebuttal February 26, 1998. Supplemental rebuttal March 4, 1998.
State of Connecticut, Department of Public Utility Control (Docket Nos. 95-03-01,95-06-17 and 96-09-22), August 29, 1997. Rebuttal December 17, 1998.
Alabama Public Service Commission (Docket No. 26029), September 12, 1997.
Tennessee Regulatory Authority (Docket No. 97-01262), October 17, 1997.
South Carolina Public Service Commission (Docket No. 97-374-C), November 25, 1997.
Rhode Island Public Utilities Commission, direct testimony re costing and pricing principles for interconnection and unbundled network elements filed November 25, 1997.
North Carolina Utilities Commission (Docket No. P-100, SUB 133d), December 15, 1997. Rebuttal March 9, 1998.
Massachusetts Department of Public Utilities (Docket No. DTE 98-15), January 16, 1998.
Mississippi Public Service Commission (Docket No. 97-AD-544, March 13, 1998.
New Hampshire Public Service Commission (Docket No. 97-171, Phase II), March 13, 1998. Rebuttal April 17, 1998.
Massachusetts Department of Telecommunications and Energy (D.P.U. 96-3/74, 96-75, 96-80/81, 96-83, & 96-94), April 29, 1998.

Massachusetts Department of Telecommunications and Energy (Docket No. 85-15, Phase III, Part 1), August 31, 1998.
Massachusetts Department of Telecommunications and Energy (Docket No. 98-15, Phase II), September 8, 1998.
Rhode Island Public Utilities Commission (Docket No. 2681), September 18, 1998.
Maryland Public Service Commission (Case No. 8786), November 16, 1998.
New Hampshire Public Utilities Commission (Docket No. 99-018), April 7, 1999. Rebuttal April 23, 1999.

Massachusetts Department of Telecommunications & Energy (Docket No. 94-185-E), July 26, 1999.

Bell Entry into InterLATA Markets

Federal Communications Commission (CC Docket No. 96-149), affidavit, August 15, 1996.
Federal Communications Commission (Docket No. 96-149) with Paul B. Vasington, November 14, 1996.
Georgia Public Service Commission (Docket No. 6863-U), January 3, 1997. Rebuttal February 24, 1997.
Pennsylvania Public Utility Commission, statement regarding costs and benefits from Bell Atlantic entry into interLATA telecommunications markets, February 10, 1997. Rebuttal March 21, 1997.
New York Public Service Commission, "Competitive Effects of Allowing NYNEX To Provide InterLATA Services Originating in New York State," with Harold Ware and Richard Schmalensee, February 18, 1997.
Delaware Public Utilities Commission, statement regarding costs and benefits from Bell Atlantic entry into interLATA telecommunications markets, filed February 26, 1997. Rebuttal April 28, 1997.
New Jersey Board of Public Utilities (Docket No. T097030166), March 3, 1997. Reply May 15, 1997.
Federal Communications Commission (CC Docket 96-262 *et al.*), with Richard Schmalensee, Doug Zona and Paul Hinton, *ex parte* March 7, 1997.
Public Service Commission of Maryland, statement regarding consumer benefits from Bell Atlantic's provision of interLATA service, filed March 14, 1997.
Louisiana Public Service Commission, on behalf of BellSouth Long Distance, Inc. (Docket No. U-22252), March 14, 1997. Rebuttal May 2, 1997. Supplemental testimony May 27, 1997.
Public Service Commission of West Virginia, economic analysis of issues regarding Bell Atlantic's entry into the interLATA long distance market. Filed March 31, 1997.
South Carolina Public Service Commission (Docket No. 97-101-C), April 1, 1997. Rebuttal June 30, 1997.
Kentucky Public Service Commission (Administrative Case No. 96-608), April 14, 1997. Rebuttal April 28, 1997. Supplemental rebuttal August 15, 1997.
Federal Communications Commission (CC Docket No. 96-149), April 17, 1997.

Maine Public Utilities Commission, affidavit regarding competitive effects of NYNEX entry into interLATA markets, with Kenneth Gordon, Richard Schmalensee and Harold Ware, filed May 27,1997.
Alabama Public Service Commission (Docket No. 25835), June 18, 1997. Rebuttal August 8, 1997.
North Carolina Utilities Commission (Docket No. P-55, Sub1022), August 5, 1997. Rebuttal September 15, 1997.
Mississippi Public Service Commission (Docket No. 97-AD-0321), July 1, 1997. Rebuttal September 29, 1997.

Regulatory Reform

Federal Communications Commission (CC Docket No. 80-286), December 10, 1997.
Federal Communications Commission, *In the Matter of United States Telephone Association Petition for Rulemaking—1998 Biennial Regulatory Review*, with Robert W. Hahn, filed September 30, 1998.

Reciprocal Compensation

Massachusetts Department of Telecommunications and Energy (Docket No. 98-67), September 25, 1998.
Washington Public Utilities Commission (Docket No. UT-990300, February 24, 1999. Rebuttal March 8, 1999.
Colorado Public Utilities Commission (Docket No. 99A-001T), March 15, 1999.
Massachusetts Department of Telecommunications and Energy (Docket No. D.T.E. 97-116-B), March 29, 1999.
North Carolina Utilities Commission (Docket No. P-500, Sub 10), July 9, 1999.
North Carolina Utilities Commission (Docket No. P-561, Sub 10), July 30, 1999.
Public Service Commission of South Carolina (Docket No. 1999-259-C), August 25, 1999.
Louisiana Public Service Commission (Docket No. U-24206), September 3, 1999.
Florida Public Service Commission (Docket No. 990750-TP), September 13, 1999.
New Mexico Public Regulation Commission (Case No. 3131), October 13, 1999.

Contract Services

Superior Court Department of the Trial Court (Civil Action No. 95-6363F), affidavit, July 1996.
Connecticut Department of Public Utilities (Docket No. 99-03-17), June 18, 1999.

October, 1999

AFFIDAVIT

STATE OF: Georgia
COUNTY OF: Fulton

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared William E. Taylor, Ph.D.-Senior Vice President-National Economic Research Associates, Inc., who, being by me first duly sworn deposed and said that:

He is appearing as a witness before the Tennessee Regulatory Authority in Docket No. 99-00430 on behalf of BellSouth Telecommunications, Inc., and if present before the Authority and duly sworn, his testimony would be set forth in the annexed testimony consisting of 25 pages and 1 exhibit(s).

William E. Taylor

Sworn to and subscribed
before me this 15th
day of October, 1999

NOTARY PUBLIC

MICHEALE F. HOLCOMB
Notary Public, Douglas County, Georgia
My Commission Expires November 3, 2001

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF ALPHONSO J. VARNER

BEFORE THE TENNESSEE REGULATORY AUTHORITY

DOCKET NO. 99-00377

OCTOBER 15, 1999

Q. PLEASE STATE YOUR NAME, YOUR POSITION WITH BELLSOUTH TELECOMMUNICATIONS, INC. ("BELLSOUTH") AND YOUR BUSINESS ADDRESS.

A. My name is Alphonso J. Varner. I am employed by BellSouth as Senior Director for State Regulatory for the nine-state BellSouth region. My business address is 675 West Peachtree Street, Atlanta, Georgia 30375.

Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR BACKGROUND AND EXPERIENCE.

A. I graduated from Florida State University in 1972 with a Bachelor of Engineering Science degree in systems design engineering. I immediately joined Southern Bell in the division of revenues organization with the responsibility for preparation of all Florida investment separations studies for division of revenues and for reviewing interstate settlements.

Subsequently, I accepted an assignment in the rates and tariffs organization with responsibilities for administering selected rates and tariffs including preparation of tariff filings. In January 1994, I was

appointed Senior Director of Pricing for the nine-state region. I was named Senior Director for Regulatory Policy and Planning in August 1994, and I accepted my current position as Senior Director of Regulatory in April 1997.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS DOCKET?

A. No.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony addresses reciprocal compensation for Internet Service providers ("ISPs").

Issue 1: For the purposes of this agreement should dial-up calls to Internet Service providers ("ISPs") be treated as if they were local calls for the purposes of reciprocal compensation?

Q. WHAT IS BELLSOUTH'S POSITION REGARDING APPLICABILITY OF RECIPROCAL COMPENSATION TO "ALL CALLS THAT ARE PROPERLY ROUTED OVER LOCAL TRUNKS"?

A. Reciprocal compensation is applicable to local traffic, not necessarily to all traffic routed over "local" trunks. Specifically, FCC Rule 51.701 defines local traffic to which reciprocal compensation is applicable as "telecommunications traffic between a LEC and a telecommunications

carrier other than a CMRS provider that originates and terminates within a local service area established by the state commission". "Local" trunks may actually carry access, or toll traffic, in addition to local traffic.

Q. WHAT IS BELLSOUTH'S POSITION ON THE APPLICABILITY OF RECIPROCAL COMPENSATION TO ISP-BOUND TRAFFIC?

A. Reciprocal compensation is not applicable to ISP-bound traffic. BellSouth's position is that payment of reciprocal compensation for ISP-bound traffic is inconsistent with the law and is not sound public policy.

Q. IS THERE ANY REASON FOR THE AUTHORITY TO ADDRESS THIS ISSUE?

A. No. The FCC's recent Declaratory Ruling, FCC 99-38 in CC Docket Nos. 96-98 and 99-68, released February 26, 1999 ("Declaratory Ruling"), clearly established that the FCC has, will retain, and will exercise jurisdiction over this traffic. As a practical matter, it appears fruitless for state commissions to deal with this issue at this time. Although the FCC appears to temporarily give states the authority to create an interim compensation arrangement until the FCC establishes rules, the FCC's authority to confer this ability on the states is being challenged in court. Consequently, states could find that they do not have the authority to create even an interim compensation arrangement. Even if the states do have the authority, such authority is valid only until the FCC completes its rulemaking on the subject. Therefore, any effort devoted by the Authority

to establishing an interim compensation arrangement for ISP-bound traffic may not be the best use of resources.

Q. SHOULD THE AUTHORITY ARBITRATE THIS ISSUE?

A. No. BellSouth recommends the Authority not address this issue. Compensation for ISP traffic is not subject to a Section 252 arbitration. Reciprocal compensation in the Act is limited to "local traffic". As the FCC's Declaratory Ruling makes clear, traffic to ISPs is not local interstate in nature (Footnote 87):

> *As noted, section 251(b)(5) of the Act and our rules promulgated pursuant to that provision concern inter-carrier compensation for interconnected local telecommunications traffic. We conclude in this Declaratory Ruling, however, that ISP-bound traffic is non-local interstate traffic. Thus, the reciprocal compensation requirements o section 251(b)(5) of the Act and Section 51, Subpart H (Reciprocal Compensation for Transport and Termination of Local Telecommunications Traffic) of the Commission's rules do not govern inter-carrier compensation for this traffic. As discussed, supra, in the absence a federal rule, state commissions have the authority under section 252 of the Act to determine inter-carrier compensation for ISP-bound traffic.*

Thus, it is not subsumed in the Act's reciprocal compensation obligations and should not be arbitrated. Although the FCC's Declaratory Ruling attempts to authorize states to arbitrate the issue of inter-carrier

compensation for ISP-bound traffic, the FCC cannot simply expand the scope of Section 252 to cover such arbitrations. Consequently, compensation for such traffic is not subject to arbitration under Section 252.

Q. HOW DOES THE ISSUE THAT ICG HAS RAISED COMPARE TO THE ISP ISSUES ALREADY ADDRESSED BY THE AUTHORITY IN PREVIOUS PROCEEDINGS?

A. The issues in this case must be addressed in a different context from the Authority's previous decisions. The Authority has previously addressed this issue in two contexts. First, the Authority has addressed the ISP traffic in the context of a complaint regarding the proper interpretation of language in an existing agreement. The issue in this case deals with the appropriate language to include in a new agreement. There is no existing language to interpret in this case. Thus, any previous rulings regarding language interpretation are irrelevant. BellSouth notes, however, that its position, which was confirmed by the FCC, has always been that calls to ISPs were not local calls; thus, BellSouth never anticipated paying reciprocal compensation on calls to ISPs.

The second context where the Authority addressed this issue was in the NEXTLINK arbitration. However, that arbitration was conducted before the FCC issued its Declaratory Ruling. Consequently, the Authority did not have benefit of the FCC's findings that compensation for ISP traffic is not covered by Section 251, is not local and is access traffic under the

interstate jurisdiction. These findings must be incorporated into the Authority's deliberations and findings in this case. BellSouth notes that its position in the NEXTLINK arbitration was consistent with the FCC's findings in the Declaratory Ruling.

Q. HAVE OTHER STATES IN BELLSOUTH'S REGION RULED ON THE ISSUE OF RECIPROCAL COMPENSATION IN AN ARBITRATION SINCE THE FCC'S DECLARATORY ORDER WAS ISSUED?

A. Yes. The Public Service Commission of South Carolina's October 4, 1999 Order in the ITC^DeltaCom arbitration case, Docket No. 1999-259-C states: "The Commission finds that ISP-bound traffic is non-local interstate traffic. As such, the Commission finds on a going-forward basis and for the purposes of this interconnection agreement that ISP-bound traffic is not subject to the reciprocal compensation obligations of the 1996 Act."

Q. YOU HAVE STATED THAT IT IS NOT APPROPRIATE FOR THE AUTHORITY TO ADDRESS ISP-BOUND TRAFFIC IN THE CONTEXT OF SECTION 251 OF THE ACT. WHAT DOES BELLSOUTH RECOMMEND THE AUTHORITY DO WITH RESPECT TO THE ISSUE OF RECIPROCAL COMPENSATION FOR ISP-BOUND TRAFFIC?

A. It is not necessary for the Authority to take any action during the interim period since compensation for ISP traffic is not an obligation under Section 251 and any state commission's decision on this issue is, at best,

temporary until the FCC's plan becomes effective. Although action by the Authority pending the FCC's ruling is not necessary, if the Authority wishes to address the issue of interim carrier compensation for ISP traffic, BellSouth suggests three possible options, any of which would be interim until such time as the FCC completes its rulemaking proceeding on inter-carrier compensation:

(1) The Authority could direct the parties to create a mechanism to track ISP-bound calls originating on each parties' respective networks on a going-forward basis. The parties would apply the inter-carrier compensation mechanism established by a final, nonappealable order of the FCC retroactively from the date of the Interconnection Agreement approved by the Authority, and the parties would "true-up" any compensation that may be due for ISP-bound calls.

(2) A second option proposed by BellSouth is an inter-carrier revenue sharing compensation arrangement for ISP-bound access traffic that is consistent with the proposal BellSouth filed with the FCC. This proposal is also consistent with the inter-carrier compensation mechanisms that apply for other access traffic. This option is based on apportionment of revenues collected for the access service among the carriers incurring costs to provide the service. The revenue to be apportioned among carriers is the charge for the business exchange service that the ISP pays.

(3) The Authority could direct the parties to implement a bill-and-keep

arrangement for ISP-bound traffic until such time as the FCC's rulemaking on inter-carrier compensation is completed. By definition, a bill-and-keep arrangement is a mechanism in which neither of the two interconnecting carriers would charge the other for ISP-bound traffic that originates on the other carrier's network. Under all three options, the CLEC is being compensated by the ISP. Under Option (2), in the interim, BellSouth would be the net recipient of revenue from the CLEC. While option (2) is theoretically correct, BellSouth is willing to forego that compensation for the interim period in exchange for the administrative simplicity of bill-and-keep. Furthermore, a bill-and-keep arrangement removes any uncertainty surrounding application of the FCC's mechanism inherent in Option (1).

Q. PLEASE FURTHER DESCRIBE OPTION (2): BELLSOUTH'S PROPOSED INTER-CARRIER REVENUE SHARING COMPENSATION PLAN.

A. In its Comments and Reply Comments to the FCC's Notice of Proposed Rulemaking in CC Docket No. 99-68, In the Matter of Inter-Carrier Compensation for ISP-Bound Traffic ("Inter-Carrier Compensation NPRM"), BellSouth puts forth its proposal for the appropriate inter-carrier compensation mechanism. (See Exhibit AJV-6) BellSouth's proposal is guided by and is consistent with FCC precedent regarding inter-carrier compensation for jointly provided interstate services. BellSouth's proposal recognizes, as does the FCC, that the revenue source for ISP-bound traffic is derived from the service provided to the ISP. (See In the Matter of

Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing and End User Common Line Charges, CC Docket Nos. 96-262,94-1, 91-213 and 95-72, First Report and Order,12 FCC Rcd 15982, 16133-16134 (1997)) Equally important, BellSouth's proposal ties the level of inter-carrier compensation directly to the level of compensation that each carrier derives from the jointly provided service.

In this proceeding, BellSouth proposes an interim flat-rated sharing mechanism that is based on apportionment of revenues collected for the access service among the carriers incurring costs to provide the service. The revenue to be apportioned among carriers is the charge for the business exchange service that the ISP pays. Typically, the ISP purchases Primary Rate ISDN ("PRI") service as the business exchange product used to provide the access service. BellSouth believes that, in the interim, a flat-rated compensation process is appropriate since the revenues collected are based on flat-rated charges. Exhibit AJV-7 attached to this testimony is BellSouth's Proposed Interim ISP Inter-Carrier Access Service Compensation Plan ("Interim Plan").

In describing BellSouth's Interim Plan, I use the term "Serving LEC" to refer to a LEC that has an ISP as its customer and the term "Originating LEC" to refer to a LEC whose end user customers originate traffic that is delivered to the Serving LEC's network and is bound for an ISP. BellSouth's Interim Plan takes into account the following facts:

1) Only the Serving LEC bills the ISP for access service. The ISP is

billed at rates established by the Serving LEC;

2) The FCC has limited the price for an ISP dial-up connection to the equivalent business exchange service rate;

3) the Originating LEC incurs costs to carry ISP-bound traffic to the Serving LEC;

4) the Originating LEC has no means to recover its costs directly from the ISP (unless, of course, the Originating LEC and the Serving LEC are one in the same); and

5) The Originating LEC must recover its costs, to the extent possible, from the Serving LEC.

BellSouth's Interim Plan presumes that all LECs who serve ISPs will participate in the plan. Otherwise, only those parties that will benefit will participate – i.e., a LEC that originates more ISP-bound traffic than it transports to an ISP will be a net receiver.

Q. PLEASE EXPLAIN FURTHER WHY A SEPARATE SHARING PLAN IS NEEDED FOR ACCESS SERVICE PROVIDED TO ISPs?

A. The need for a separate sharing plan is created by the FCC's decree that the price charged for access service provided to ISPs is the business exchange rate. Unlike other switched access services, which are billed on a usage-sensitive basis, ISPs typically purchase from the flat rate business exchange tariff.

Because non-ISP switched access service is billed on a usage-sensitive

basis, it is relatively easy for each carrier to be compensated for the portion of the access service that it provides. The most commonly used method of compensation is for each carrier to bill the IXC directly for the portion of access service it provides. For example, for originating access, the originating LEC bills the IXC for the switching and for the portion of transport that the originating LEC provides, and the terminating LEC bills the IXC for the portion of transport that it provides.

With ISP traffic, the above method is unworkable. Since the ISP is billed business exchange service rates, only one LEC can bill the ISP. Also, since the rate paid by the ISP is a flat rate charge designed for another service, i.e., business exchange service, there is no structural correlation between the cost incurred by the LEC and the price paid by the ISP. However, the business exchange rate paid by the ISP is the only source of revenue to cover any of the costs incurred in provisioning access service to the ISP. Therefore, a plan to share the access revenue paid by the ISP among all the carriers involved in sending traffic to the ISP is needed.

Q. DOESN'T BELLSOUTH COVER THE COST OF ORIGINATING TRAFFIC TO ISPs FROM ITS OWN END USERS?

A. No, nor would it be appropriate to do so. Again, ISPs purchase access services, albeit at local business exchange rates. The local exchange rates paid by end user customers were never intended to recover costs associated with providing access service and were established long before the Internet became popular.

Q. PLEASE DESCRIBE THE SPECIFICS OF BELLSOUTH'S INTERIM REVENUE SHARING PLAN.

A. BellSouth's Interim Revenue Sharing Plan contains the following steps that are further described in Exhibit AJV-7:

(1) Each Serving LEC will be responsible for identifying all minutes of use ("MOUs") which are ISP-bound that each Originating LEC delivers to the Serving LEC's network;

(2) each trunk (DS0-equivalent) will be assumed to carry 9,000 MOUs on average per month (equates to 150 hours per trunk per month);

(3) based on ISP-bound MOUs identified by the Serving LEC and provided to the Originating LEC, the Originating LEC will calculate the quantity of DS1 facilities required to transport the Originating LEC's ISP-bound traffic to the Serving LEC as follows: (ISP-bound MOUs / 9,000 MOUs per trunk / 24 trunks per DS1);

(4) Serving LEC will advise Originating LECs of the average PRI rate charged to ISPs. The Serving LEC can use either its tariffed rate or the average rate actually charged to ISPs;

(5) Originating LEC calculates compensation due to it by the Serving LEC as follows: (Quantity of DS1s x Serving LEC's PRI rate x sharing percentage);

(6) Originating LEC bills the Serving LEC on a quarterly basis; and

(7) The ISP-bound MOUs and the PRI rates as reported by the Serving LEC are subject to audit by the Originating LEC(s). The amount of compensation could be affected by results of an audit.

To the extent two parties have additional issues, contract negotiations between the parties can determine other terms and conditions. For example, due to technical capabilities, the two LECs may agree that the Originating LEC will identify the ISP-bound minutes of use.

Q. WHAT IS THE BASIS FOR USING 9,000 MOUs AS THE AVERAGE MONTHLY USAGE PER TRUNK?

A. Nine thousand (9,000) MOUs is a proxy that was used by the FCC for FGA access before actual usage could be measured. Further, this average level of usage has been used in other situations as a proxy for IXC usage.

Q. WHAT SHARING PERCENTAGE DOES BELLSOUTH PROPOSE BE APPLIED TO THE SERVING LEC'S REVENUES TO COMPENSATE BELLSOUTH FOR ITS NETWORK USED TO CARRY ISP-BOUND TRAFFIC?

A. BellSouth proposes a sharing percentage of 9.4% that will be applied to the Serving LEC's ISP revenues to calculate the compensation due BellSouth when BellSouth is an Originating LEC. Likewise, when BellSouth is the Serving LEC, BellSouth proposes that a sharing percentage of 9.4% will be applied by the Originating LEC(s) when calculating compensation BellSouth owes.

Q. HOW DID BELLSOUTH DETERMINE THE SHARING PERCENTAGE IT PROPOSES?

A. BellSouth's calculation of its sharing percentage is shown in Exhibit AJV-8 attached to this testimony. First, BellSouth considered that switching, transport and loop costs are incurred to carry traffic from the Originating LEC's end office to the ISP location. Since the Serving LEC incurs the loop cost between its end office and the ISP location, the Serving LEC should retain revenues to cover its loop cost. However, switching and transport costs are jointly incurred by both the Originating LEC and the Serving LEC.

Therefore, BellSouth believes that an appropriate sharing percentage is developed by determining the ratio of switching and transport costs to total costs (switching, transport and loop), and then dividing that percentage by two since each carrier bears a portion of the switching and transport cost. In order to determine the ratio, BellSouth looked to the Benchmark Cost Proxy Model ("BCPM") results filed in Tennessee in the Universal Service Fund proceedings. The average, statewide voice grade loop, switching and transport capital costs produced by BCPM are $20.31, $4.43 and $.27, respectively. Therefore, the loop capital cost represents 81.2% of the total average statewide capital cost, which means that the switching and transport capital costs represent 18.8% of the total capital cost. Again, dividing the 18.8% by two in order to account for the fact that both carriers incur switching and transport costs results in a sharing percentage of 9.4%.

BellSouth also reviewed ARMIS data and determined that the relationship between loop, switching and transport investment as reported in ARMIS is very similar to the relationship calculated from the BCPM results. The ARMIS data shows that, for 1998, in Tennessee, total loop investment was $3,000,129,000, switching investment was $600,170,000 and transport investment was $129,556,000, resulting in ratios of 80.44% for loop, 16.09% for switching and 3.47% for transport, which are close to the ratios that result from the BCPM data.

Q. DOES BELLSOUTH'S PROPOSED SHARING PERCENTAGE ONLY APPLY TO TRAFFIC IT ORIGINATES TO A SERVING LEC?

A. No. When BellSouth is the serving LEC and a CLEC's end users call an ISP served by BellSouth, BellSouth should compensate the CLEC. BellSouth proposes to use the same method and sharing percentage (9.4%) to compensate the CLEC as it proposes for billing the CLEC.

Q. WHAT IMPACT WOULD BELLSOUTH'S PROPOSAL HAVE ON A CLEC SUCH AS ICG?

A. BellSouth's proposal would have a very small impact. As an example, I will assume that ICG serves its ISP customers with PRI service which is equivalent to a DS1 (24 DS0s). Further, I will assume that ICG charges its ISP customers a market-based rate of $850 per month per PRI. If BellSouth as the Originating LEC generates 55 million ISP-bound MOUs

per month to ICG, then the amount of monthly compensation that BellSouth's proposal would result in ICG owing to BellSouth is calculated as follows:

55,000,000 / 9000 / 24 = 254.63 DS1s

254.63 DS1s x $850.00 x .094 = $20,344.37

At a PRI rate of $850, ICG will collect $216,436 in revenue from its ISP customer(s) just for the traffic originated by BellSouth. Total compensation ICG owes to BellSouth for the 55,000,000 MOUs BellSouth originated to ICG would be only $20,344.37.

Q. HOW DOES YOUR PROPOSAL AFFECT THE RELATIVE COST RECOVERY OF THE LECs INVOLVED IN PROVIDING THE ACCESS SERVICE?

A. Since the FCC has ordered that ISPs are to be provided service by ILECs at business exchange rates, the fact is that when the access service is provided by a single LEC to the ISP, the rates it charges the ISP are typically not fully compensatory. This situation arises because the ISP is being charged a flat rate charge (which was intended for another service) for a high volume usage-sensitive service. Under BellSouth's sharing proposal, each carrier should recover roughly the same percentage of its costs. For example, if the carrier would have recovered 50% of its costs if it served the ISP alone, the underlying premise of this proposal is that each carrier should recover roughly 50% of its costs.

Q. SHOULD THIS PLAN BE CONTINUED ONCE THE FCC ESTABLISHES

A USAGE-BASED COMPENSATION MECHANISM?

A. Probably not. The need for this plan was created based on the fact that ISPs currently are allowed to pay business exchange rates for access service. Should the FCC change the application of access charges to ISPs or establish a different compensation mechanism, this plan should be re-evaluated.

Q. PLEASE DESCRIBE OPTION (3): BILL-AND-KEEP.

A. Bill-and-keep is a compensation mechanism in which neither of two interconnecting carriers charges the other for the termination of ISP-bound traffic that originates on the other carrier's network.

Q CAN THE AUTHORITY USE BILL-AND-KEEP AS AN INTERIM MECHANISM?

A. If the Authority can order any mechanism at all, it can order bill-and-keep. The FCC did not specify the type of interim mechanism a state could use. Of course, whether the FCC could authorize states to apply any mechanism is subject to court review.

Q. WHY MIGHT A BILL-AND-KEEP ARRANGEMENT BE AN APPROPRIATE COMPENSATION MECHANISM?

A. Although the FCC has not addressed bill-and-keep with respect to non-

251 traffic, such as ISP traffic, it has been addressed in FCC Rule 51.713 with respect to traffic where 251(b)(5) applies (i.e. local traffic to which reciprocal compensation applies). FCC Rule 51.713 defines bill-and-keep arrangements as 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. Rule 51.713 further provides for use of bill-and-keep arrangements if the state commission determines that the amount of local telecommunications traffic from one network to the other is roughly balanced with the amount of local telecommunications traffic flowing in the opposite direction, and is expected to remain so.

In the FCC 's NPRM in Docket 95-185 (January 11, 1996), the FCC recommended bill-and-keep as an interim compensation arrangement for cellular providers. The NPRM states that bill-and-keep is an appropriate interim mechanism where the incremental cost of using shared network facilities is equal to (or approximately) zero for both networks. This recommendation can be applied to compensation sharing for ISP-bound traffic, with the distinction that network providers would recover their costs from ISPs, not end-user customers.

Although the NPRM and FCC rule mentioned above discuss bill-and-keep as a settlement mechanism for local traffic, in this proceeding, bill-and-keep is being proposed as a possible means of settling compensation for ISP-bound traffic, which is non-local access traffic.

Q. WHAT IS THE COMMON PRINCIPLE UNDERLYING THE

CIRCUMSTANCES WHERE THE FCC HAS FOUND BILL-AND-KEEP TO BE A REASONABLE COMPENSATION MECHANISM?

A. In both of the circumstances discussed above, the net amount of compensation would be relatively small. Under bill-and-keep, neither carrier compensates the other carrier for use of its facilities. Consequently, the net compensation realized by each carrier is zero under bill-and-keep. If the amounts of compensation are small anyway, payment of reciprocal compensation produces results that are close to bill-and-keep without the complexity of actually recording data and billing between the parties.

Q. ARE THE NET COMPENSATION PAYMENTS UNDER AN APPROPRIATE INTER-CARRIER COMPENSATION MECHANISM EXPECTED TO BE SMALL?

A. Since this is access traffic, carriers are only compensated for the facilities provided that are used to connect the ISP's end-users to the CLEC serving the ISP. Using the plan discussed in Option (2), BellSouth would only receive 9.4% of the revenues billed to the ISP for the number of facilities used. That amount is relatively small by itself. The net compensation to BellSouth would be further reduced by payments made to a CLEC for connecting end-users to an ISP served by BellSouth.

Q. ARE CLECS HARMED BY UTILIZING BILL-AND-KEEP?

A. No. Actually, BellSouth is foregoing its revenue for this interim period. BellSouth typically provides far more connections between ISP end-users and CLECs than CLECs provide from ISP end-users to BellSouth. As a result, BellSouth would be the net recipient of compensation.

Q. WHY IS BELLSOUTH WILLING TO FOREGO THIS COMPENSATION?

A. BellSouth is willing to forego this compensation for several reasons: (1) the compensation arrangement is for an interim period only, (2) the amounts to be paid are small, and (3) the tradeoff is foregoing a small amount of revenue in exchange for administrative simplicity.

Q. WHY DOES BELLSOUTH OPPOSE PAYING RECIPROCAL COMPENSATION FOR ISP TRAFFIC?

A. The interstate access connection that permits an ISP to communicate with its subscribers falls within the scope of exchange access and, accordingly, constitutes an access service as defined by the FCC:

> *Access Service* includes services and facilities provided for the origination or termination of <u>any</u> interstate or foreign telecommunications. (47 CFR Ch. 1 §69.2(b)) (emphasis added)

The fact that the FCC has exempted enhanced service providers, including ISPs, from paying interstate switched access charges does not alter the fact that the connection an ISP obtains is an access connection. The FCC confirmed this fact in its Declaratory Ruling, at paragraph 16: "The fact that ESPs are exempt from access charges and purchase their

PSTN links through local tariffs, does not transform the nature of traffic routed to ESPs." Instead, the exemption limits the compensation that an ILEC in providing such a connection can obtain from an ISP. Further, under the access charge exemption, the compensation derived by an ILEC providing the service to an ISP has been limited to the rates and charges associated with business exchange services. Nevertheless, the ISP's service involves interstate communications. The ISP obtains access service that enables a communications path to be established by its subscriber. The ISP, in turn, recovers the cost of the telecommunications services it uses to deliver its service through charges it assesses on the subscribers of the ISP's service.

Where two or more carriers are involved in establishing the communications path between the ISP and the ISP's subscriber, the access service to the ISP is jointly provided. Such jointly provided access arrangements are not new or unique nor are the associated mechanisms to handle inter-carrier compensation. The services ISPs obtain for access to their subscribers are technically similar to the line side connections available under Feature Group A. For such line side arrangements, the FCC has relied on revenue sharing agreements for the purpose of inter-carrier compensation. The long history and precedent regarding inter-carrier compensation for interstate services are instructive and relevant to the FCC's determinations in this proceeding.

Q. HOW DO THE ACT AND THE FCC'S FIRST REPORT AND ORDER IN CC DOCKET 96-98 ADDRESS RECIPROCAL COMPENSATION?

A. Reciprocal compensation applies only when local traffic is terminated on either party's network. One of the Act's basic interconnection rules is contained in 47 U.S.C. § 251(b)(5). That provision requires all local exchange carriers "to establish reciprocal compensation arrangements for the transport and termination of telecommunications." Section 251(b)(5)'s reciprocal compensation duty arises, however, only in the case of local calls. In fact, in its August 1996 Local Interconnection Order (CC Docket No. 96-98), paragraph 1034, the FCC made it perfectly clear that reciprocal compensation rules do not apply to interstate or interLATA traffic such as interexchange traffic:

> *We conclude that Section 251(b)(5), reciprocal compensation obligation, should apply only to traffic that originates and terminates within a local area assigned in the following paragraph. We find that reciprocal compensation provisions of Section 251(b)(5) for transport and termination of traffic do not apply to the transport and termination of interstate or intrastate interexchange traffic.*

This interpretation is consistent with the Act, which establishes a reciprocal compensation mechanism to encourage local competition.

Further, in Paragraph 1037 of that same Order, the FCC stated:

> *We conclude that section 251(b)(5) obligations apply to all LECs in the same state-defined local exchange areas, including neighboring*

incumbent LECs that fit within this description.

Therefore, since ISP-bound traffic is not local traffic it is not subject to the reciprocal compensation obligations contained in Section 251 of the Act.

Q. PLEASE FURTHER DISCUSS THE FCC'S FEBRUARY 26, 1999 DECLARATORY RULING.

A. The FCC has once again confirmed that ISP-bound traffic is access service subject to interstate jurisdiction and is not local traffic. In its Declaratory Ruling, the FCC concluded that "ISP-bound traffic is non-local interstate traffic." (fn 87) The FCC noted in its decision that it traditionally has determined the jurisdiction of calls by the end-to-end nature of the call. In paragraph 12 of this same order, the FCC concluded "that the communications at issue here do not terminate at the ISP's local server, as CLECs and ISPs contend, but continue to the ultimate destination or destinations, specifically at an Internet website that is often located in another state." Further, in paragraph 12 of its Declaratory Ruling, the FCC finds that "[a]s the Commission stated in *BellSouth MemoryCall*, the Authority has jurisdiction over, and regulates charges for, the local network when it is used in conjunction with the origination and termination of interstate calls."

The FCC's decision makes plain that no part of an ISP-bound communication terminates at the facilities of an ISP. Once it is understood that ISP-bound traffic "terminates" only at distant websites, which are

almost never in the same exchange as the end-user, it is evident that these calls are not local.

Q. IS BELLSOUTH'S POSITION REGARDING JURISDICTION OF ISP TRAFFIC CONSISTENT WITH THE FCC'S FINDINGS AND ORDERS?

A. Yes. BellSouth's position is supported by, and is consistent with, the FCC's findings and Orders which state that for jurisdictional purposes, traffic must be judged by its end-to end nature, and must not be judged by looking at individual components of a call. Therefore, for purposes of determining jurisdiction for ISP-bound traffic, the originating location and the final termination must be looked at from an end-to-end basis. BellSouth's position is consistent with long-standing FCC precedent.

Q. PLEASE DESCRIBE IN MORE DETAIL THE TRAFFIC THAT IS ELIGIBLE FOR RECIPROCAL COMPENSATION.

A. As I have previously stated, only local traffic is eligible for reciprocal compensation. Exhibit AJV-2 to my testimony contains two diagrams. Both of these diagrams illustrate local calls between end users. Diagram A illustrates a typical local call where both ends of the call are handled by a single carrier's network which, in this example, is an ILEC's network. In this scenario, the ILEC receives a monthly fee from its end user to apply towards the cost of that local call. For that payment, the ILEC provides the end user with transport and termination of local calls throughout the local calling area. End users typically do not pay for calls terminated to

them. Importantly, in this case, the end user is the ILEC's customer, which means that the end user pays the ILEC revenue for the service.

By comparison, Diagram B illustrates a typical local call that is handled by two carriers - one end of the call is handled by an ILEC, and a CLEC handles the other end of the call. In this scenario, when the ILEC's end user makes a local call to the CLEC's end user, the ILEC's end user is paying the ILEC the same price for local exchange service as in Diagram A. The ILEC, however, is not the provider of the entire network facilities used to transport and deliver the local call. The CLEC is providing part of the facilities and is incurring a cost. Since the end user is an ILEC customer, the CLEC has no one to charge for that cost. As previously noted, end users do not typically pay for local calls terminated to them, so the CLEC cannot be expected to charge its end user. While the ILEC is receiving the same revenues as shown in Diagram A, its costs are lower. Consequently, reciprocal compensation would be paid by the ILEC to compensate the CLEC for terminating that local call over its network. If the reciprocal compensation rate equals the ILEC's cost, the ILEC is indifferent to whether the ILEC or the CLEC completes the call.

Likewise, if a CLEC's end user completes a local call to an ILEC's end user, the CLEC receives the payment for local exchange service from the end user, and the CLEC pays the ILEC reciprocal compensation for the portion of the ILEC's facilities used to terminate the local call. In accordance with the Act, the purpose of reciprocal compensation is to ensure that each carrier involved in carrying a local call is compensated

for its portion of that call. The following table contains a simple illustration of the application of reciprocal compensation:

DIAGRAM A:	ILEC	CLEC
END USER REVENUE	$15	$0
SERVICE COST	($35)	$0
NET MARGIN	($20)	$0
DIAGRAM B:	ILEC	CLEC
END USER REVENUE	$15	$0
RECIPROCAL COMPENSATION	($2)	$2
SERVICE COST	($33)	($2)
NET MARGIN	($20)	$0

Q. ARE ISP's CARRIERS?

A. Yes. ISPs are carriers; hence, service provided to them is access service. This simple fact undermines ICG's claim for reciprocal compensation. The FCC has been very clear in its rulings that reciprocal compensation does not apply on access service. Some cites from the FCC Declaratory Ruling clearly establish this fact:

- Paragraph 5: "Although the Commission has recognized that enhanced service providers (ESPs), including ISPs, use interstate access services..."
- Paragraph 5: "Thus, ESPs generally pay local business rates and interstate subscriber line charges for their switched access connections..."
- Paragraph 16: "The Commission traditionally has characterized the link from an end user to an ESP as an interstate access service."
- Paragraph 16: "That the Commission exempted ESPs from access

charges indicates its understanding that ESPs in fact use interstate access service; otherwise, the exemption would not be necessary."

- Paragraph 17: "The commission consistently has characterized ESPs as 'users of access service' but has treated them as end users for pricing purposes."

(Emphasis added.)

Treating ISPs as carriers is not a recent creation of the FCC. From their inception over 30 years ago, data carriers have been regulated by the FCC as interstate carriers. These carriers were allowed to collect traffic at business rates. When access charges were established in the early eighties, the FCC reconfirmed that these carriers, i.e., ESPs/ISPs, were being provided access service, but ESPs/ISPs received an exemption from regular access charges and were allowed to continue collecting traffic for the price of business service. Importantly, the FCC was clear that the service being provided was access service, not local service. The business rate was simply the price charged for the access service. This same arrangement was undisturbed by the Act and was recently reconfirmed by the FCC in its Declaratory Ruling.

Q. WHY IS THE FACT THAT ISPs ARE CARRIERS AND ARE PURCHASING ACCESS SERVICE IMPORTANT?

A. The fact that ISPs are carriers is important because carriers must pay the full cost of the access service provided to them. The carrier, not the end user that calls them, is the customer for access service. When an

interexchange carrier ("IXC") or an ISP purchases access service, it is the IXC or the ISP, not the end user, who is the customer of the local exchange carrier ("LEC") for that service. It is the IXC or the ISP who must pay the cost of the access service provided to them. Since the IXC or the ISP (and not the end user) pays for access service, the cost of the local network used to provide access service is appropriately excluded from the cost of universal service. This arrangement is based on the fact that the ISP or IXC is the retail provider of service to the end user. The LEC provides an input (access service) that the ISP or IXC uses to provide its retail service, e.g., internet or long distance service. Consequently, the LEC's customer is the ISP or the IXC, not the end user; and the ISP or IXC must pay the cost of the access service provided to them. The end user is a customer of the ISP or IXC for calls directed to these carriers.

Q. YOU STATE THAT ISP-BOUND TRAFFIC IS JURISDICTIONALLY INTERSTATE. DOES THIS AFFECT THE ISP ACCESS CHARGE EXEMPTION?

A. No. The FCC concluded in its Declaratory Ruling that its determination that ISP-bound traffic is interstate does not alter the current ISP exemption. ISPs continue to be permitted to access the public switched telecommunications network by paying basic business local exchange rates rather than by paying interstate switched access tariff rates. The FCC's decision to exempt ISPs from paying access charges for policy and political reasons in no way alters the fact that ISP-bound traffic is access

traffic, not local traffic. The access charge exemption merely affects the price that an ISP pays for the access service. If the FCC had indeed concluded that ISP-bound traffic were local, there would be no need for the FCC to exempt that traffic from the access charge regime. Likewise, no decision regarding reciprocal compensation would affect this exemption.

Exhibit AJV-3 attached to my testimony consists of two diagrams. Diagram C illustrates a typical interstate call originating on a LEC's network and delivered to an IXC's Point of Presence. As shown by this illustration, the LEC receives access charges from the IXC as compensation for use of the LEC's facilities to deliver the traffic to the IXC. The IXC bills the end user.

Diagram D is different from Diagram C in only one respect. The IXC has been replaced by an ISP. The network used to transport ISP-bound traffic is exactly the same network used to deliver traffic to IXCs. However, rather than through receipt of normal switched access charges, the LEC is compensated for the access service it provides to the ISP by the business rates it charges the ISP. The important point is that both IXCs and ISPs receive the same service and, although they are charged different prices, the prices they pay are designed to cover the same costs. That cost is the full cost of providing service to them.

Exhibit AJV-4 to my testimony consists of two diagrams illustrating the consistency of compensating carriers for access traffic based on the

revenue that is derived from the jointly provided service. Diagram E illustrates a call that originates on a LEC's network and is delivered to an IXC/ISP, and shows that the IXC/ISP pays the LEC for access services to cover the cost of getting the traffic to the IXC/ISP. Diagram F illustrates an IXC/ISP-bound call that originates on a LEC's network and interconnects with another carrier's network (ICO/CLEC) for routing of the call to the IXC/ISP. In this situation, the IXC/ISP is the other carrier's customer. The revenue this other carrier receives from the IXC/ISP for access services covers the cost of delivering the traffic to the IXC/ISP.

Q. PLEASE DESCRIBE HOW ICG REQUESTS THAT IT BE COMPENSATED FOR ISP-BOUND TRAFFIC.

A. Exhibit AJV-5 to my testimony consists of a Diagram G which illustrates ICG's request that BellSouth pay reciprocal compensation for ISP-bound traffic where the ISP is ICG's customer. It is obvious from this diagram that ICG is simply attempting to augment the revenues it receives from its ISP customer at the expense of BellSouth's end user customers. In other words, paying ICG reciprocal compensation for ISP-bound traffic would result in BellSouth's end user customers subsidizing ICG's operations. Indeed, the FCC has recognized that the source of revenue for transporting ISP-bound traffic is the access service charges that ISPs pay. ICG receives this payment from its ISP customers. There is no legal or policy basis for ISPs to be subsidized simply because they choose a different carrier to provide their access service.

Q DOESN'T BELLSOUTH COVER THE COST OF ORIGINATING TRAFFIC TO ISPs FROM ITS OWN END USERS?

A. No, nor would it be appropriate to do so. Again, ISPs purchase access services, albeit at local business exchange rates. The local exchange rates paid by end user customers were never intended to recover costs associated with providing access service and were established long before the Internet became popular.

Q. IS BELLSOUTH ECONOMICALLY INDIFFERENT TO PAYING RECIPROCAL COMPENSATION ON ISP-BOUND TRAFFIC?

A. No. Diagram F (on Exhibit AJV-5) and Diagram G (on Exhibit AJV-6) described above should make clear that BellSouth is not economically indifferent to paying reciprocal compensation on ISP calls for the following reasons:

1) BellSouth is still incurring the cost to transport the call to the point of interconnection with the CLEC,
2) The CLEC wants BellSouth to pay reciprocal compensation to cover the CLEC's cost from the point of interconnection to the CLEC's switch, and
3) the ISP, which is the only source of revenue to cover the costs in 1) and 2) above, only pays the CLEC for access.

The CLEC receives the revenues from its ISP customer, yet ICG

apparently believes it is appropriate for BellSouth to incur a portion of the costs for providing the service without any reimbursement. This is exactly the opposite of the situation depicted in Diagram B, which illustrates when reciprocal compensation should apply. The CLEC should reimburse the originating carrier (BellSouth) for its cost of transporting the ISP-bound call to the CLEC point of interconnection. Instead, the CLEC wants the LEC to incur even more of the costs without any compensation. This is inappropriate given the entire access charge system. There is no reason for the Authority to sanction this economic legerdemain and reward CLECs by subsidizing ISPs at the expense of the LEC's end users.

Q. IF RECIPROCAL COMPENSATION IS NOT AUTHORIZED, WILL CLECs BE UNCOMPENSATED FOR THE COSTS THEY INCUR TO PROVIDE SERVICES TO ISPs?

A. No. The CLECs' ISP customers compensate the CLECs for services that are provided just like an ILEC's ISP customer compensates the ILEC. The CLECs' request for reciprocal compensation on ISP-bound traffic simply provides CLECs with unearned windfall revenues and further increases the unreimbursed cost of the ILEC.

Q. ICG CLAIMS THAT IT CANNOT RECOVER ITS COSTS OF HANDLING ISP-BOUND TRAFFIC WITHOUT RECIPROCAL COMPENSATION. DO YOU AGREE?

A. No. If ICG truly believes it is unable to recover its cost of providing service

to ISPs, ICG could have submitted cost studies to the Authority proving its case. However, ICG has not done so. The reason is simple; ICG does not incur costs for ISP-bound traffic on a per minute of use basis. ICG bills its ISP customers on a flat-rated basis and recovers its costs in that manner. ICG would be unable to demonstrate per minute of use costs that it is unable to recover. Further, ICG could not use BellSouth's per minute of use cost for reciprocal compensation because that cost is based on local traffic, and ISP-bound traffic is not local.

Q. DOES LACK OF RECIPROCAL COMPENSATION ON ISP-BOUND TRAFFIC DISTORT THE ATTRACTIVENESS OF ISPs AS CLEC CUSTOMERS?

A. No. Payment of reciprocal compensation would create the distortion. The table below provides an illustrative example of this distortion.

	SERVING AN ISP AND RECEIVING RECIPROCAL COMPENSATION	***SERVING AN ISP WITHOUT RECEIVING RECIPROCAL COMPENSATION***
REVENUE FROM ISP FOR SERVICE	$600	$900
RECIPROCAL COMPENSATION REVENUE PAID	$300	$0
COST OF PROVIDING SERVICE TO ISP	($600)	($600)
NET MARGIN	$300	$300

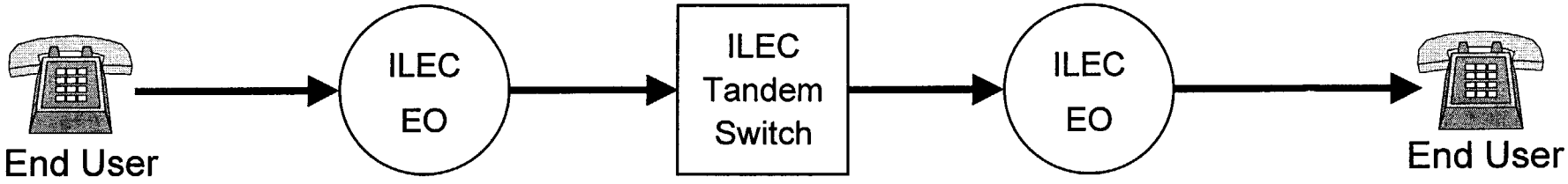
This illustration shows that reciprocal compensation allows the CLEC to

Reciprocal Compensation

- **ILEC receives monthly fee from its end user to apply towards the cost of terminating local calls**

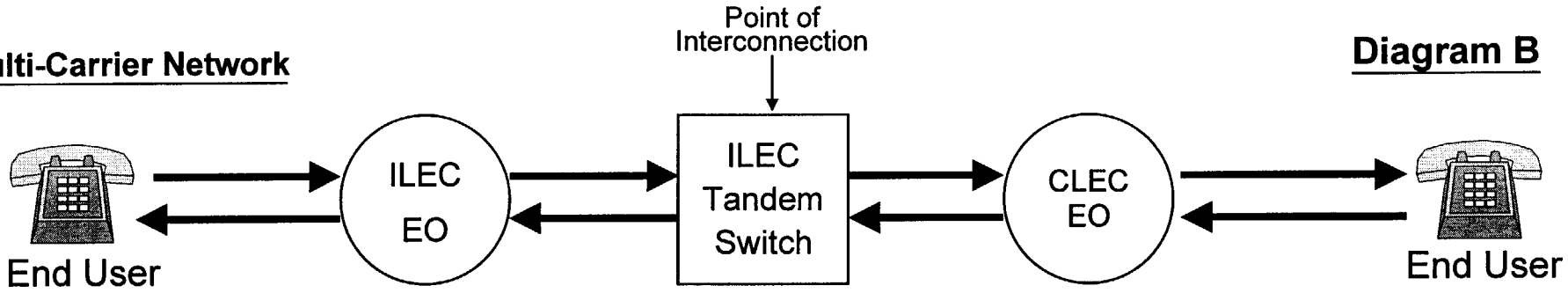
Single Carrier Network

Diagram A



Multi-Carrier Network

Diagram B



Call Flow

ILEC pays CLEC
Reciprocal Compensation

Call Flow

CLEC pays ILEC
Reciprocal Compensation

Access Service for IXC-Bound and ISP-Bound Traffic Involving Single Carrier Network

Diagram C

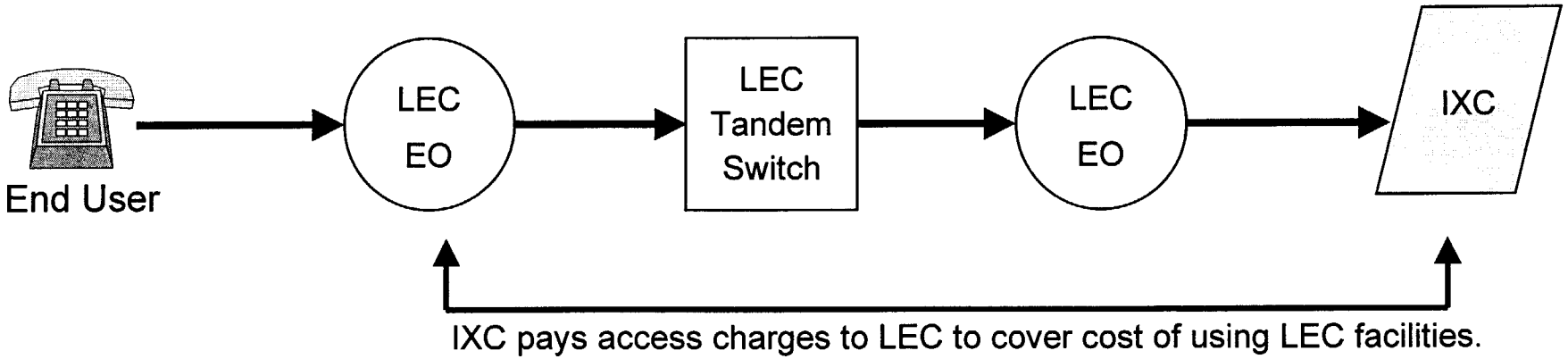
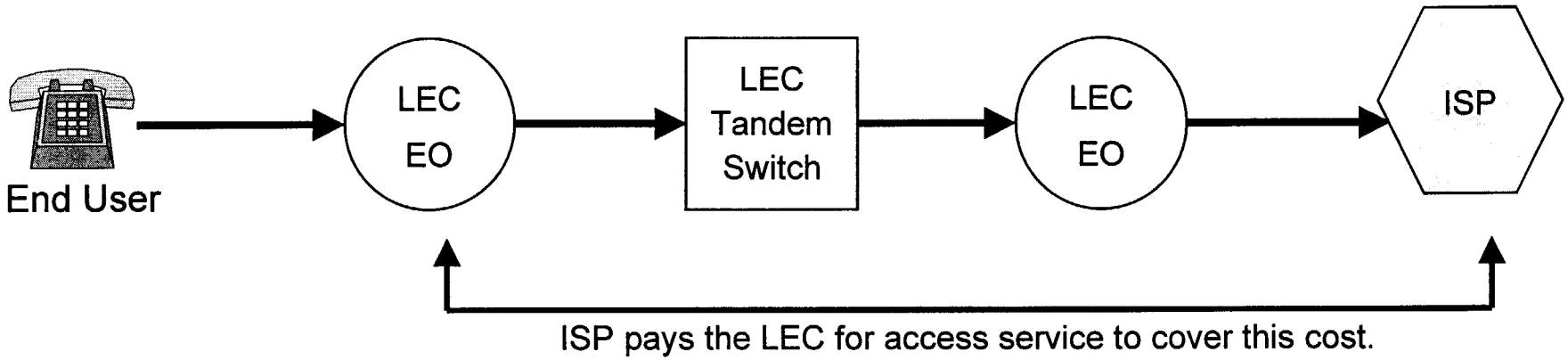


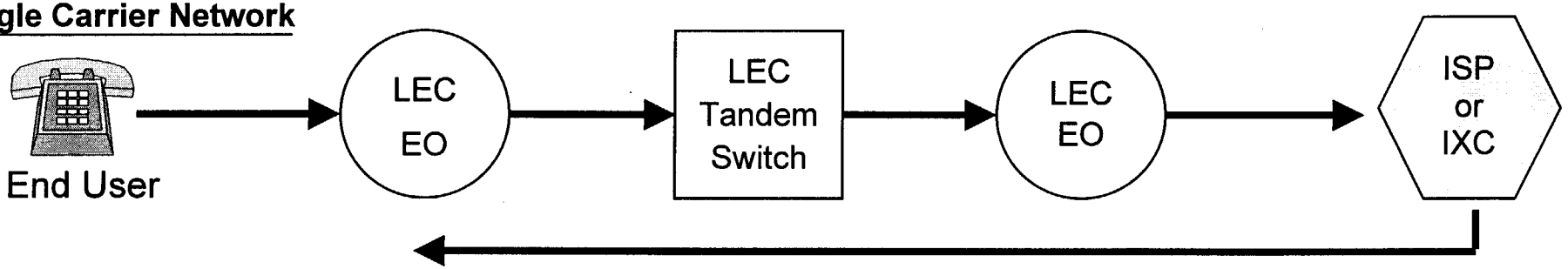
Diagram D



Single Network and Multi-Network Provision of Access Service

Diagram E

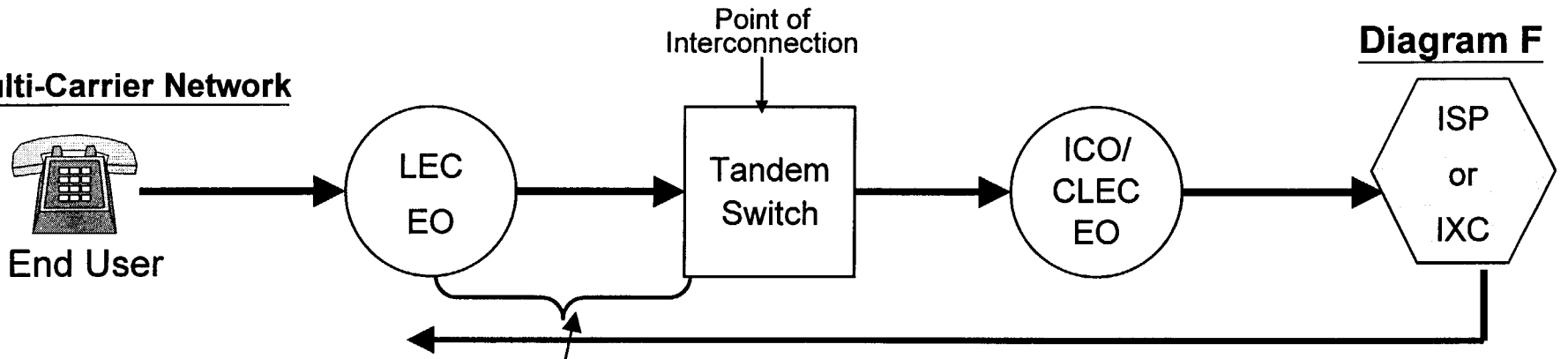
Single Carrier Network



ISP pays the LEC for access service to cover this cost.

Diagram F

Multi-Carrier Network



CLEC/ICO should reimburse LEC for this cost.

ISP pays the CLEC/ICO, for access service to cover this cost

FILED ELECTRONICALLY 4/12/99

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Inter-Carrier Compensation	)	CC Docket No. 99-68
for ISP-Bound Traffic	)	

COMMENTS

BELLSOUTH CORPORATION
BELLSOUTH TELECOMMUNICATIONS, INC.

M. Robert Sutherland
Richard M. Sbaratta

Their Attorneys

BellSouth Corporation
Suite 1700
1155 Peachtree Street, N. E.
Atlanta, Georgia 30309-3610
(404) 249-3386

Date: April 12, 1999

TABLE OF CONTENTS

SUMMARY

The purpose of the *NPRM* is to consider the adoption of a rule "regarding the compensation for ISP-bound traffic.

BellSouth suggests that the Commission should adopt an inter-carrier compensation approach that: (1) recognizes that ISP traffic is interstate; (2) calls for negotiations between the carriers jointly providing the Internet access service; (3) is based on revenue sharing with the primary carrier sharing revenue with the secondary carrier; and (4) uses negotiation to determine the amount of inter-carrier compensation. Such an inter-carrier compensation approach promotes the Commission's goals and objectives.

Further, the Commission should find that ISP-bound traffic cannot be separated into its interstate and intrastate components. Any single Internet session can result in an Internet user accessing information in his/her own state, another state, or another country. The same user could "chat" online with people across the street or on the other side of the world. The inability to distinguish the jurisdictional nature of each communication that travels across the Internet leads to the conclusion that Internet traffic is inserverable and must be considered jurisdictionally interstate.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Inter-Carrier Compensation	)	CC Docket No. 99-68
for ISP-Bound Traffic	)	

COMMENTS

BellSouth Corporation and BellSouth Telecommunications, Inc. ("BellSouth") hereby submit the following comments on the *Notice of Proposed Rulemaking*, released on February 26, 1999,[1] regarding inter-carrier compensation for ISP-bound traffic.

I. INTRODUCTION

In its *Declaratory Ruling*, the Commission found that Internet-bound communications do not terminate at an Internet Service Provider's ("ISP") local server but "continue to the ultimate destination or destinations, specifically at an Internet website that is often located in another state."[2] The Commission also concluded that a substantial portion of Internet traffic involves accessing interstate or foreign websites and hence is jurisdictionally interstate.[3] The purpose of

---

1 *In the Matter of Inter-Carrier Compensation for ISP-Bound Traffic*, CC Docket No. 99-68, *Notice of Proposed Rulemaking*, FCC 99-38, released February 26, 1999 ("*NPRM*").

2 *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, *Declaratory Ruling*, FCC 99-38, released February 26, 1999 at ¶ 12 ("*Declaratory Ruling*").

3 *Id.* at ¶¶ 18 and 20.

the *NPRM* is to consider the adoption of a rule governing inter-carrier compensation for ISP-bound traffic.[4]

As a preliminary matter, it is necessary to establish the framework within which the issue of inter-carrier compensation should be considered. The interstate connection that permits an ISP to communicate with its subscribers falls within the scope of exchange access and, accordingly, constitutes an access service as defined by the Commission:

> *Access Service* includes services and facilities provided for the origination or termination of any interstate or foreign telecommunication.[5] (emphasis added)

The fact that the Commission has exempted enhanced service providers, including ISPs, from paying interstate access charges does not alter the fact that the connection an ISP obtains is an access connection. Instead, the exemption limits the compensation that a local exchange carrier ("LEC") in providing such a connection can obtain from an ISP.[6] Further, under the access charge exemption, the compensation derived by a LEC providing the service to an ISP has been limited to the rates and charges associated with business exchange services. Nevertheless, the ISP's service involves interstate communications. The ISP obtains a service that enables a communications path to be established by its subscriber. The ISP, in turn, recovers the cost of the telecommunications services it uses to deliver its service through charges it assesses on the subscribers of the ISP's service.

---

4 *NPRM* at ¶ 28.

5 47 C.F.R. § 69.2(b).

6 The access charge exemption only applies to LECs that are subject to the Commission's access charge rules (47 C.F.R. § 69.1 *et. seq.*).

Where two or more carriers are involved in establishing the communications path between the ISP and the ISP's subscriber, the access service to the ISP is jointly provided. Such jointly provided access arrangements are not new or unique nor are the associated mechanisms to handle inter-carrier compensation. The services ISPs obtain for access to their subscribers are technically similar to the line side connections available under Feature Group A. For such line side arrangements, the Commission has relied on revenue sharing agreements for the purpose of inter-carrier compensation. The long history and precedent regarding inter-carrier compensation for interstate services are instructive and relevant to the Commission's determinations in this proceeding.

II. INTER-CARRIER COMPENSATION FOR ISP-BOUND INTERSTATE TRAFFIC

The *NPRM* expresses the Commission's preference that any rule pertaining to inter-carrier compensation be based upon negotiations entered into by the respective carriers.[7] BellSouth supports a federal rule that calls for negotiation between the carriers to determine inter-carrier compensation for jointly provided interstate-services. Negotiation has long been a mechanism employed by the Commission with regard to other jointly provided access arrangements that involved potential revenue sharing. Relying on the negotiation process enables agreements to reflect the differing circumstances that arise and permits carriers to craft agreements that are particular to those circumstances.

---

7 *NPRM* at ¶ 28.

The *NPRM* presents an approach to inter-carrier compensation based on the negotiation process established in Sections 251 and 252 of the Communications Act.[8] As explained more fully below, such an approach is not acceptable because the Commission does not have the statutory authority to adopt it. In response to the *NPRM*'s invitation, BellSouth submits an alternative approach that is consistent with the revenue sharing approaches followed by the Commission in connection with jointly provided access service.

A. The Commission Should Not Adopt The Alternative Set Forth In The *NPRM*

The approach for interstate inter-carrier compensation set forth in the *NPRM* would make the negotiations for such compensation subject to the negotiation process established by Sections 251 and 252 of the Communications Act. The proposal contemplates that a failure on the part of the parties to reach an agreement would be subject to the arbitration procedures set forth in Section 252 of the Communications Act, wherein state commissions would have the responsibility of arbitrating any unresolved issues. Under this proposal, the Commission would have no oversight role unless the state commission failed to act in accordance with the provisions of Section 252. This proposal is fundamentally flawed.

Neither Section 251 nor Section 252 governs interstate inter-carrier compensation arrangements. The duty to negotiate under Section 251 pertains only to fulfilling the duties set forth in subsections (b) and (c) of Section 251. Section 251(b) relates to local exchange carriers' obligations regarding resale, number portability, dialing parity, access to rights-of-way, and reciprocal compensation. Inter-carrier compensation for jointly provided interstate services is

---

[8] 47 U.S.C. §§ 251 and 252.

unrelated to any of these Section 251(b) obligations.[9] Likewise, there is no nexus between Section 251(c) and interstate inter-carrier compensation. The duty to negotiate under Section 251(c) pertains to the terms and conditions that relate to interconnection, access to unbundled network elements, resale, and collocation. There is nothing in Section 251(c) that would govern interstate inter-carrier compensation.

A state commission's arbitration authority under Section 252 extends only to agreements negotiated pursuant to the requirements of Section 251. Because inter-carrier compensation for interstate services is not governed by Section 251, state commissions are without the statutory authority to arbitrate disputes over such matters. Further, the Commission does not have the authority to rewrite the Communications Act and vest the state commissions with the power to regulate matters relating to interstate communications that, under the Act, are specifically reserved to the Commission.[10]

---

[9] Indeed, of the five obligations enumerated in Section 251(b), only reciprocal compensation could be remotely relevant. The Commission's *Declaratory Ruling*, however, is dispositive:

> As noted, section 251(b)(5) of the Act and our rules promulgated pursuant to that provision concern inter-carrier compensation for interconnected *local* telecommunications traffic. We conclude in this Declaratory Ruling, however, that ISP-bound traffic is non-local interstate traffic. Thus, the reciprocal compensation requirements of section 251(b)(5) of the Act and Section 251, Subpart H (Reciprocal Compensation for Transport and Termination of Local Telecommunications Traffic) of the Commission's rules do not govern inter-carrier compensations for this traffic.

Declaratory Ruling at n. 87.

[10] *See* 47 U.S.C. §§ 151 and 152(a). Similarly, the Commission does not have the statutory authority to vest federal district courts with the authority to review decisions regarding inter-carrier compensation for interstate communications. Under Section 252, federal district courts only have jurisdiction to review state commission actions "to determine whether the agreement

As an alternative to relying on Sections 251 and 252, the *NPRM* proposes that the Commission adopt "a set of federal rules governing inter-carrier compensation for ISP-bound traffic pursuant to which parties would engage in negotiations concerning rates, terms and conditions applicable to delivery of interstate ISP-bound traffic."[11] Without question, the only type of mechanism that can govern inter-carrier compensation for interstate services must be one over which the Commission has oversight. Federal rules that bind interstate inter-carrier compensation obligations would be appropriate.

The *NPRM*, however, assumes that for federal rules to operate properly, an arbitration-like process needs to be in-place. Arbitration is not an essential element for effective negotiation of interstate inter-carrier compensation agreements. Further, while the Commission has considerable latitude in managing its proceedings, it must be mindful that in conducting its affairs, it must do so in a manner that is consistent with the Administrative Procedures Act and the Communications Act. Thus, the Commission cannot divest the courts of appeal of jurisdiction to review final Commission orders or to force carriers to engage in binding arbitration. To the extent disputes arise during the inter-carrier compensation negotiations, the statutory complaint process and the Commission's implementing rules already provide an effective dispute resolution mechanism.

---

or statement meets the requirements of section 251 and this section." 47 U.S.C. § 252(e)(6). Inter-carrier compensation for interstate services is unrelated to the requirements of Sections 251 or 252.

[11] *NPRM* at ¶ 31.

B. The Parameters Of A Properly Crafted Inter-Carrier Compensation Mechanism

At the outset, the Commission must recognize that any interstate inter-carrier compensation mechanism adopted in this proceeding gives rise to interstate costs that must be recovered through interstate rates. As obvious as this principle is, nothing in the *NPRM* indicates that the Commission has given any consideration to this basic concept. Yet, Commission precedent regarding inter-carrier compensation, *i.e.*, primary/secondary carrier agreements, revenue sharing agreements and meet point billing, firmly establishes that compensation between one carrier and another is for the purpose of recovering costs of jointly provided services and the cost of such compensation is borne by the subscriber of the jointly provided service.

For ISP-bound traffic, the ISP is purchasing an access service to receive communications from its subscribers. It uses the telecommunications service to provide its enhanced services and recovers its costs through fees charged to its subscribers. For dial-up connections, the ISP is obtaining a service that is analogous to a Feature Group A access service in that it obtains a dial tone service that has a 7/10 digit local number associated with it. The primary difference between Feature Group A and the ISP dial-up connection is that Feature Group A is based on two-way usage sensitive prices, whereas the Commission has limited the price for an ISP dial-up connection to the equivalent business exchange service rate.[12] Notwithstanding the pricing differences, the Feature Group A and the ISP dial-up services provide the customers of these services with the ability to communicate with their subscribers, and the fees paid by these

[12] For BellSouth, exchange rates are generally flat-rated.

customers (*e.g.*, Interexchange carriers or ISPs) are supposed to compensate the LEC(s) for providing this service.[13]

Further, the Commission has correctly found that the preponderance of ISP communications is jurisdictionally interstate. As discussed below, there is no practical means of distinguishing intrastate and interstate components of ISP communications. For this reason the dial-up connection obtained by the ISP should be considered jurisdictionally interstate.[14] Such jurisdictional assignment does not implicate the access charge exemption for enhanced service providers. An interstate dial-up access connection for ISPs can be provided by simply adding a regulation for ISP dial-up connections to the interstate access tariff that cross-references the applicable business exchange rates that ISPs obtain from intrastate tariffs. Thus, ISPs would retain the current rate treatment of paying a rate that is no higher than a business exchange rate, but the service revenues and costs would properly be assigned to the interstate jurisdiction. Use of a cross-reference would have the further beneficial effect of making the jurisdictional alignment of service, revenues and costs transparent to the ISPs.

With regard to inter-carrier compensation for jointly-provided Internet access service, the LEC providing dial-tone to the ISP is the primary LEC and receives the interstate equivalent of a business exchange rate. The non-dial-tone LEC, or secondary LEC, receives no interstate revenues other than the subscriber line charge. Nevertheless, the secondary LEC incurs

---

[13] The interstate cost components of the service include the subscriber's common line, the subscriber's switch, interoffice transport, the customer's dial-tone switch and the transport to the customer's location.

[14] At a minimum, a substantial portion of the dial-up connection must be considered jurisdictionally interstate in light of the Commission's finding in the *Declaratory Ruling*.

switching and trunking costs associated with the provision of this interstate service. Consistent with Commission precedent, the primary LEC, which has the relationship with the ISP, should compensate or share revenues with the secondary LEC.[15]

The Commission, accordingly, should adopt an inter-carrier compensation approach that: (1) recognizes that ISP traffic is interstate; (2) calls for negotiations between the carriers jointly providing the Internet access service; (3) is based on revenue sharing with the primary carrier sharing revenue with the secondary carrier; and (4) uses negotiation to determine the amount of inter-carrier compensation. Such an inter-carrier compensation approach promotes Commission goals and objectives. First and foremost, the approach does not disrupt the enhanced service providers access charge exemption. Next, while the enhanced service provider exemption remains intact, the mechanism crafted by BellSouth follows the same path that the Commission has unwaveringly pursued over the last fifteen years when it addressed LEC inter-carrier compensation matters. Finally, but equally important, the approach is procompetitive. It avoids creating regulatory incentives that artificially reward carriers that only serve selected customers. It promotes efficient networks and encourages carriers to compete across a broad range of services and customers because it ensures that carriers are compensated fairly.[16]

---

[15] Prior to revenue sharing for Feature Group A, the Commission had established guidelines applicable to primary carrier/secondary carrier agreements.

[16] For example, the mechanism proposed by BellSouth would share the revenues derived from the services provided to ISPs. If such services are flat-rated, then the inter-carrier compensation would not be usage based.

C. ISP-Bound Traffic Cannot Practically Be Separated Into Its Interstate and Intrastate Components

In the *Declaratory Ruling*, the Commission determined that ISP-bound traffic was substantially interstate in nature. The Commission, however, reserved until this proceeding any determination regarding the severability of such traffic into intrastate and interstate components. It is beyond dispute that no carrier involved in delivering ISP-bound traffic has any way of determining how an ISP's subscriber is using the connection established between himself and the ISP. The only party that could theoretically track the jurisdictional use of the connection is the ISP itself. In BellSouth's opinion the tools to transform a theoretical possibility into a practical reality do not exist.

Hosts that are connected to the Internet can be located anywhere. Indeed, the fact that they are not tied to a particular geographic location represents one of the fundamental values of the Internet. Neither the IP address of the host nor its domain name links the host to a specific geographical location. Hence, there is no practical means to identify where the host is physically located. Neither the ISP's subscriber nor the ISP has any technical or operational tools that would enable them to determine which communications initiated by the subscriber or received by the subscriber are related to hosts that are located within the same local area as the ISP's local server or in another state or in another country. The dispersion of servers world-wide and the lack of duplication attests to the fact that use of the Internet will invariably involve substantial interstate communications.[17]

---

[17] The WWW Consortium has compiled an extensive list of servers by geographic locations. The list is available at http://vlib.stanford.edu/Servers.html.

In addition, an ISP's subscriber typically communicates with more than one destination point on (or beyond) the Internet during a single Internet session and may do so either sequentially or simultaneously. For example, an ISP's subscriber in a single Internet session may access websites that reside on servers located in various states or in foreign countries; communicate directly with another Internet user; and "chat" online, in real time, with a group of Internet users located around the corner or around the world. Standard Internet "browsers" enable an ISP's subscriber to do all of these things simultaneously. In another example, an ISP's subscriber may download incoming e-mail from the ISP's server (which may or may not be located in the same state as the user), while accessing his stockbroker's website in another state, and listen to an audio feed that originates from a radio station in another country.[18] The dynamic capabilities of the Internet render it impossible to segregate intrastate from interstate communications.[19]

---

[18] Indeed, one website, www.broadcast.com, offers an Internet user access to 984 different radio and television stations. With real-time audio and video streaming capabilities, which are available for most web browsers, Internet users can listen to radio stations and watch TV broadcasts from around the world.

[19] In a working paper, the FCC Office of Plans and Policy explained that:

> [B]ecause the Internet is a dynamically routed, packet-switched network, only the origination point of an Internet connection can be identified with clarity. Users generally do not open Internet connections to "call" a discreet recipient, but access various Internet sites during the course of a single conversation.... One Internet "call" may connect the user to information both across the street and on the other side of the world.

The paper concludes that Internet traffic "has no built-in jurisdictional divisions." Kevin Werbach, *Digital Tornado: The Internet and Telecommunications Policy*, FCC, OPP Working Paper No. 29 (March 1997) at 45.

The inability to distinguish the jurisdictional nature of each communication that traverses an Internet connection coupled with the predominant interstate nature of Internet communications lead to the inescapable conclusion that Internet traffic is inseverable and must be considered jurisdictionally interstate.

III. CONCLUSION

ISP-bound traffic is inherently and inseverably interstate traffic. As such, it requires an interstate inter-carrier compensation mechanism over which the Commission maintains oversight authority. BellSouth has provided an approach to address inter-carrier compensation for ISP-

bound traffic that recognizes the interstate character of such traffic and is consistent with Commission policies and goals.

Respectfully submitted

BELLSOUTH CORPORATION
BELLSOUTH TELECOMMUNICATIONS, INC.

By: /s/
M. Robert Sutherland
Richard M. Sbaratta

Their Attorneys

BellSouth Corporation
Suite 1700
1155 Peachtree Street, N.E.
Atlanta, Georgia 30306-3610
(404) 249-3386

Date: April 12, 1999

CERTIFICATE OF SERVICE

I do hereby certify that I have this 12th day of April 1999 served the following parties to this action with a copy of the foregoing COMMENTS by hand delivery or by placing a true and correct copy of the same in the United States Mail, postage prepaid, addressed to the parties listed below.

*Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
445 Twelfth Street, S. W.
Room TW-A325
Washington, DC 20554

*ITS
1231 20th Street, N. W.
Washington, DC 20036

/s/
Juanita H. Lee

* VIA HAND DELIVERY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Inter-Carrier Compensation	)	CC Docket No. 99-68
For ISP-Bound Traffic	)	

REPLY COMMENTS

BellSouth Corporation and BellSouth Telecommunications, Inc. ("BellSouth") hereby submit their Reply Comments in the above referenced proceeding.

I. INTRODUCTION

In this proceeding the Commission is considering adopting rules to govern inter-carrier compensation for interstate ISP-bound traffic. For some commenters, this proceeding is an opportunity for the Commission to "show me the money" and make inter-carrier compensation a euphemism for corporate welfare. Inter-carrier compensation becomes an excuse for transfer payments from ILECs to CLECs.

Inter-carrier compensation is more complex. The underlying concept is one in which all carriers participating in the provision of a jointly provided service are compensated for the jointly provided service. Thus, inter-carrier compensation necessarily involves consideration of the revenues associated with the jointly provided service because it is from such revenues that inter-carrier compensation is derived. In the case of ISP-bound traffic, the issue is more difficult because the Commission's access charge exemption policy constrains the prices that can be charged for ISP-bound traffic.

Calls for the Commission to emulate local reciprocal compensation schemes simply ignore the realities surrounding ISP-bound traffic. The decision the Commission must make in

this proceeding requires a more thoughtful and analytical approach if the Commission is going to foster fair competition and encourage the development of advanced services and technologies.

II. THE PARADIGM FOR INTER-CARRIER COMPENSATION

The CLECs and some enhanced service providers portray the Commission's decision here to be one of simply adopting an approach that mirrors the reciprocal compensation mechanisms reflected in local interconnection agreements.[1] All of these comments share the same fundamental shortcoming. These parties apparently believe that the only task before the Commission is simply to establish an interstate payment mechanism between carriers. None of these parties consider the interstate revenue sources from which such payments must come. It is the height of folly to suggest, as these parties do, that a usage-based compensation scheme that is not accompanied by a usage sensitive charge that would be assessed on either the ISP or the ISP's subscriber could be imposed by the Commission.

Interstate compensation and interstate revenue sources are two sides of the same coin. The revenue sources for interstate ISP-bound traffic are two: (1) the subscriber line charge assessed to the ISP's subscriber and (2) the service charge assessed to the ISP.[2] The subscriber line charge, however, does not even cover of the full interstate nontraffic sensitive costs associated with facilities between the subscriber's premises and the serving central office of that subscriber. The remaining interstate nontraffic sensitive costs, as well as the switching and

---

1 *See e.g.*, RCN at 6; CompTel at 2-5; Choice Communications 2-3; Focal at 14; AOL at 10; AT&T at 8.

2 As further discussed below, the comments in this proceeding make clear that all ISP traffic should be treated as interstate. Even if there is some jurisdictionally intrastate components of ISP traffic, such components cannot be severed from interstate communications that predominate ISP traffic. Accordingly, the services used by ISPs should be treated as interstate with the revenues associated with such services considered interstate revenues.

trunking costs associated with the communications path to the ISP, in the interstate jurisdiction, would typically be recovered from the ISP. Indeed, the Commission has recognized that the main source of revenue for LECs transporting ISP-bound traffic are from the service charges that ISPs pay to use local exchange facilities. [3]

In light of these facts, it is remarkable that CLECs that serve ISPs contend that the Commission should implement an inter-carrier compensation scheme that would result in usage-based payments being made to the carrier that provides service to the ISP. In an arrangement where two carriers are providing service to establish the connection between the ISP and its subscriber, the carrier serving the ISP's subscriber currently receives no interstate revenue for its switching and trunking facilities that are used in making the connection to the ISP. It is patently absurd to impose a compensation obligation on the carrier that serves the ISP's subscriber unless the Commission concomitantly creates a new mechanism for that carrier to recover these additional costs.

In stark contrast to the proposals that call for the Commission to mimic local reciprocal compensation is BellSouth's revenue sharing approach. BellSouth's proposal is guided by and consistent with Commission precedent regarding inter-carrier compensation for jointly provided interstate services.[4] It recognizes, as the Commission does, that the primary revenue source for ISP-bound traffic is derived from the service provided to the ISP. Equally important, BellSouth's proposal ties the level of inter-carrier compensation directly to the level of

---

[3] *See* In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing and End User Common Line Charges, CC Docket Nos. 96-262, 94-1, 91-213 and 95-72, *First Report and Order*, 12 FCC Rcd 15982, 16133-16134 (1997).

[4] Numerous commenters urge the Commission to use the compensation mechanisms established for jointly provided access services.

compensation that carriers derive from the jointly provided service. The link between revenue and compensation has always been fundamental to the Commission's determinations regarding inter-carrier compensation for jointly provided access. This link is of no less importance to the ultimate resolution of the issue of inter-carrier compensation for ISP-bound traffic. Indeed, given the Commission's policies that surround enhanced services, the revenue/compensation link is a paramount consideration that cannot be ignored by the Commission.

A. The Commission Should Establish Guidelines Regarding Inter-Carrier Compensation

The comments reveal a consensus across a broad spectrum of parties participating in this proceeding that it is the Commission's responsibility to oversee inter-carrier compensation for interstate traffic and to adopt rules governing such compensation.[5] While there is a diversity of opinion regarding the specific content of the Commission's rules, most parties agree that the rules should provide guidelines including general principles governing such inter-carrier compensation and the procedures to be followed to establish compensation agreements.

Among the general principles to which most parties agree is that inter-carrier compensation agreements for ISP-bound traffic should be a product of negotiations. Negotiations have the benefit of enabling parties to recognize differing circumstances. With properly structured guidelines promulgated by the Commission, the concerns of some parties that negotiations would not be effective or fair are removed.[6] In its comments, BellSouth's proposed

---

5 *See e.g.*, Focal at 8; RCN at 5; GSA at 12; CIX at 4; GST Telecom at 13.

6 *See e.g.*, Cox at 3; CT Cube and Leaco at 2; GST Telecom at 11-13.

a revenue sharing plan. The revenue sharing plan provides the foundation for the Commission to use in promulgating inter-carrier compensation guidelines. It would provide the parameters to be considered in the negotiation process, and, thus, provide a structured base upon which negotiations could take place.

B. Sections 251 And 252 Have No Applicability

One of the most significant differences among the parties arises in the context of the applicability of the negotiation and arbitration process set forth in Sections 251and 252 of the Communications Act. Many CLECs argue that inter-carrier compensation agreements regarding interstate ISP-bound traffic should be governed by the same process as local interconnection agreements.[7] Most just assert that the local interconnection agreements form the appropriate foundation for interstate ISP-bound traffic, and, thus, believe that the same process, including state commission arbitration of disputes, should apply.[8] A few attempt to rationalize having the state commissions oversee the negotiation and arbitration of inter-carrier compensation agreements because of a perceived inability of the Commission to fulfill its statutory obligations.[9] None of these parties, however, provide any legal basis that would support the application of Sections 251 and 252 to interstate ISP-bound traffic.

---

7 There are some parties, such as MCIWorldCom, that dispute the Commission's jurisdictional determination regarding the interstate nature of ISP-bound traffic. They presume the traffic to be local and view the process regarding inter-carrier compensation to be no different than that for reciprocal compensation.

8 *See e.g.*, KMC Telecom at 2-5; CTSI at 11-13.

9 *See e.g.*, Focal at 7-8; ALTS at 8.

In its Comments, BellSouth demonstrated that neither Section 251 nor Section 252 govern interstate inter-carrier compensation.[10] The Act simply does not provide state commissions with any authority regarding interstate inter-carrier compensation. Nor can the Commission rewrite the Communications Act and vest state commissions with the power to regulate matters relating to interstate communications that, under the Act, are specifically reserved to the Commission.

The Commission has the responsibility to regulate interstate communications. It cannot delegate that responsibility to state commissions. Even if the Commission had the statutory authority to do so, which it does not, delegation to the state commissions would constitute poor public policy. ISP-bound traffic falls within the Commission's access charge exemption, a federal policy. The access charge exemption creates an interstate subsidy that clearly can be impacted by inter-carrier compensation. Accordingly, these matters require a cohesive, singular administration of policy. Such administration can and should only take place at the federal level.

C. Interstate Inter-carrier Compensation Should Not Mirror Local Reciprocal Compensation

Many of the CLECs urge the Commission to follow the local reciprocal compensation model, claiming that there is no difference between the transport and termination of local calls and jointly providing interstate service for ISP-bound traffic.[11] In these parties' view, a minute is a minute and there should be symmetry between these types of calls.

---

10 BellSouth at 4-5. Many parties share BellSouth's view. *See e.g.*, Frontier at 5-6; ICG at 3-5; SBC at 4-7.

11 *See e.g.*, ALTS at 12-18; AT&T at 8; AOL at 10; CTSI at 5-7; Time Warner at 3-8; CompTel at 2.

These arguments are makeweight. There are minutes associated with local traffic, with access traffic and with toll traffic. These minutes are treated differently by regulators for policy reasons and more importantly, they are treated differently in interconnection agreements. To suggest that ISP-bound traffic should be treated as local traffic amounts to little more than an argument of convenience for the CLECs.

It would be the epitome of absurdity to contend that local exchange rates take into account and fully compensate the originating LEC for ISP-bound traffic. Despite the arguments by some that ISP-bound traffic has always been considered local, the fact remains that ISP-bound traffic characteristics were never considered when local rates were established. Further, the comments show that ISP-bound traffic bears little resemblance to local traffic.[12] Indeed, for BellSouth the typical call duration for a local call is between 3 and 4 minutes. On the other hand, an Internet session, on average, is between 20 and 25 minutes. There is simply no similarity between local exchange traffic and ISP-bound traffic.

A companion argument asserted by CLECs is that, like local exchange traffic, CLECs save incumbent LECs the costs for the portion of ISP-bound communication that they handle.[13] The fallacy in this argument is two-fold. First, the CLECs ignore the fact that they displace the primary revenue source for ISP-bound traffic. Next, they omit any mention of the additional costs that originating LECs have been incurring as a result of ISP-bound traffic. TANE, for example, pointed out the additional trunking costs the LECs are incurring because of the increase in ISP-bound traffic.[14] This proceeding is not the first time that the Commission was made

---

12 *See e.g.*, NTCA at 3; TANE at 2.

13 *See e.g.*, RCN at 11.

14 TANE at 2.

aware that ISP-bound traffic was increasing public switched network costs and increasing network congestion. Three years ago the Commission was advised during its review of the access charge exemption that ISP-bound traffic was causing network congestion and that the exemption would continue to cause ISP use of the public switched network to grow and would require additional network investment if network quality was to be maintained.[15] The comments in this proceeding confirm prior LEC predictions. There is nothing that CLECs have done to lessen the additional cost burden associated with ISP-bound traffic. There is no substance to claims that incumbent LECs have experienced cost savings because CLECs serve ISPs. To the contrary their network costs are increasing because of the exponential growth of ISP-bound traffic with its peculiar traffic characteristics and these too are costs to be considered for compensation purposes.

The symmetry that CLECs want the Commission to establish is achieved, not by treating ISP-bound traffic like local, but rather by recognizing that interstate ISP-bound traffic is no different than any other interstate traffic that uses local exchange facilities. When ISP-bound traffic is considered in its proper context, it becomes evident that compensation is not an issue that is reserved to the carrier serving the ISP. It pertains to the entire connection between the ISP subscriber and the ISP. An inter-carrier compensation mechanism must consider not only costs but also the revenue sources for such compensation. This is precisely how BellSouth's revenue sharing proposal operates.

---

15 *See* Comments and Reply Comments filed in connection with the Commission's proceeding, In the Matter of Usage of the Public Switched Network by Information Service and Internet Access Providers, CC Docket No. 96-263, *Notice of Inquiry,* 11 FCC Rcd 21354 (1996).

D. ISP-Bound Traffic Is Jurisdictionally Inseverable

Some commenters use this proceeding to indirectly question the Commission's declaratory ruling that ISP-bound traffic is primarily interstate. Thus, often in arguing in favor of replicating the local reciprocal compensation model for ISP-bound traffic, some commenters describe the traffic as terminating at an ISP location. Others contend that an end-to-end analysis does not fit with Internet communications.

The Commission's declaratory ruling is not at issue here. Parties have adequate remedies, reconsideration or judicial review, to challenge the Commission's ruling. Nevertheless, it is clear that the Commission's jurisdictional determination is unassailable. The Commission's ruling reflects a consistent application of past Commission and judicial precedent. No party has shown otherwise.

What is clear from the comments, however, is that interstate and intrastate components of an Internet communication are inseverable.[16] No party's comments contradict the fact the ISP's do not track the jurisdictional nature of Internet traffic. Further, no commenter has shown that a practical mechanism with widespread availability exists for tracking the jurisdiction of Internet traffic. The inability to distinguish the jurisdictional nature of the communications that traverse Internet connections and the predominate interstate nature of Internet communications lead to the inescapable conclusion that Internet traffic is inseverable and must be considered jurisdictionally interstate.

---

16 ISP-bound traffic can be identified. Where two LECs jointly provide the ISP connection, the two LECs would have to cooperate and exchange information in order to identify ISP-bound traffic. For example, the LEC serving the ISP would have to provide the originating LEC with the ISP dial-up numbers. The Commission, in its order here, should unequivocally make clear that LECs jointly providing services must work cooperatively and share information that is necessary or required to properly identify ISP-bound traffic.

IV. CONCLUSION

The Commission must reject the call for inter-carrier compensation for interstate ISP-bound traffic to emulate local reciprocal compensation. Such an approach would be inconsistent with existing Commission policies such as the access charge exemption for enhanced services. To reconcile its access charge exemption and inter-carrier compensation for ISP-bound traffic, the Commission will have to consider not only the costs of providing interstate services, but also the revenues derived from providing such services. The revenue sharing approach presented by BellSouth in its comments takes these factors into account and, accordingly, should be adopted by the Commission.

Respectfully submitted,

BELLSOUTH CORPORATION
BELLSOUTH TELECOMMUNICATIONS, INC.

By: /s/ Richard M. Sbaratta
M. Robert Sutherland
Richard M. Sbaratta

Their Attorneys

BellSouth Corporation
Suite 1700
155 Peachtree Street, N. E.
Atlanta, Georgia 30306
(404) 249-3386

Date: April 27, 1999

CERTIFICATE OF SERVICE

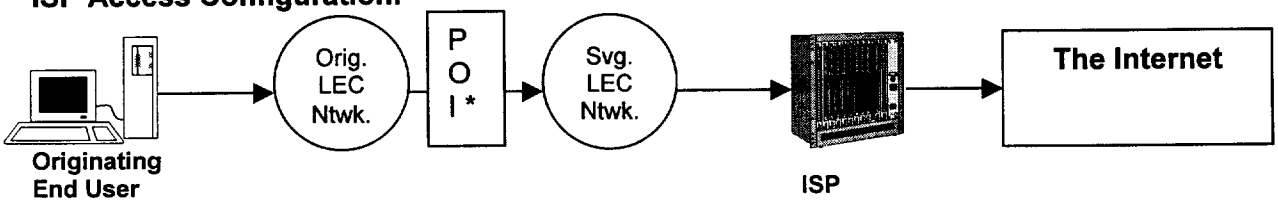
I do hereby certify that I have this 27th day of April 1999 served the following parties to this action with a copy of the foregoing REPLY COMMENTS by hand delivery or by placing a true and correct copy of the same in the United States Mail, postage prepaid, addressed to the parties listed on the attached service list.

/s/ Juanita H. Lee
Juanita H. Lee

BellSouth's Proposed Interim ISP Inter-carrier Access Service Compensation Plan

Plan Objective is to compensate the Originating LEC(s) for portion of cost incurred in transporting ISP-bound traffic to the Serving LEC. This plan would be in effect until the FCC establishes a usage-based compensation mechanism, at which time this plan would be re-evaluated and most likely revised.

ISP Access Configuration:



* Point Of Interface may be at the tandem or at the Serving LEC's premises

Summary of Proposed Interim Revenue Sharing Arrangement:

1) Each LEC that serves ISPs will be required to participate in this plan. Otherwise, only those parties that will benefit will participate – i.e., a LEC that originates more traffic to an ISP than it terminates to its own ISP will be a net receiver.

2) ISP pays Serving LEC the Serving LEC's business exchange service rate.

3) Each LEC that serves ISPs in a given LATA will be responsible for compensating LEC(s) that originate ISP traffic to the Serving LEC.

4) Facilities involved in carrying ISP-bound traffic to the ISP are as follows: Switching and Transport facilities are provided by both Originating LEC and Serving LEC and Loop facilities are provided by Serving LEC.

5) Serving LEC's PRI revenues will be shared by applying a "sharing percentage." Sharing percentage represents estimation of the proportion of its facilities that the Originating LEC uses to transport the ISP-bound MOUs to the Serving LEC. See Exhibit AJV-7 for BellSouth's calculation of its sharing percentage. BellSouth will apply the same sharing percentage to calculate the compensation due it when BellSouth is an Originating LEC as will be applied by the Originating LEC(s) when calculating compensation BellSouth owes when BellSouth is the Serving LEC.

6) Serving LEC shares its ISP revenues with Originating LECs as follows:

   a) Each Serving LEC will be responsible for identifying all minutes of use ("MOUs") which are ISP-bound that each Originating LEC delivers to the Serving LEC's network.

   b) Assume that, on average, each trunk (DS0-equivalent) carries 9000 MOUs per month (equates to 150 hours per trunk per month).

c) Based on ISP-bound MOUs identified by the Serving LEC and provided to the Originating LEC, the Originating LEC will calculate the quantity of DS1 facilities required to transport the Originating LEC's ISP-bound traffic to the Serving LEC as follows:
ISP-bound MOUs / 9000 avg MOUs per trunk / 24 trunks per DS1

d) Serving LEC will advise Originating LECs as to average PRI rate charged to ISPs.

e) Originating LEC calculates compensation due to it by the Serving LEC as follows:
Quantity of DS1s x Serving LEC's PRI rate x sharing percentage

f) Originating LEC bills Serving LEC on a quarterly basis.

g) The ISP-bound MOUs and the PRI rate as reported by the Serving LEC are subject to audit by the Originating LEC(s). The amount of compensation could be affected by results of an audit.

7) To the extent two parties have additional issues, contract negotiations between the parties can determine other terms and conditions. For example, due to technical capabilities, the two LECs may agree that the Originating LEC will identify the ISP-bound minutes of use.

The Serving LEC shares its revenues with the Originating LEC(s) via transport compensation

Illustrative Calculation with BellSouth as the Originating LEC and a CLEC as the Serving LEC

Assumptions:

Average MOUs per Trunk (DS0): 9,000
Serving LEC's PRI Rate: $850

COL. A	COL. B	COL.C	COL. D	COL. E	COL. F
Originating LEC	Number of originating ISP minutes delivered to Serving LEC NOTE (1)	Number of Equivalent Transport DS1s NOTE (2)	Serving LEC's PRI Rate NOTE (3)	Sharing % NOTE (4)	Compensation due from Serving LEC to Originating LEC NOTE (5)
BellSouth	55,000,000	254.63	$850.00	9.4%	$20,344.37

NOTES:
(1) ISP-bound MOUs identified/provided by Serving LEC & provided to Originating LEC
(2) Col. C calculated as follows: Col. B / 9000 MOUs per trunk / 24 trunks per DS1
(3) Col. D is the Serving LEC's PRI Rate
(4) Col. E is BellSouth's calculated sharing percentage from Exhibit AJV-7
(5) Col. F calculated as follows: Col. C * Col. D * Col. E

Calculation of Sharing Percentage

Sharing percentage is calculated by determining ratio of loop-related switching and transport facilities capital cost to total capital cost, then dividing by two since both Originating LEC and Serving LEC provide switching and transport facilities. BellSouth's sharing percentage is calculated as follows:

Loop Capital Cost	= $20.31
Associated Loop Switching Capital Cost	= $4.43
Associated Loop Transport Capital Cost	= $0.27
Total Capital Cost	= $25.01

(($4.43 + $.27) / $25.01) / 2 = .094

Therefore, BellSouth will apply a sharing percentage of 9.4% to calculate the compensation due it when BellSouth is an Originating LEC. Likewise, when BellSouth is the Serving LEC, BellSouth expects that the Originating LEC(s) will apply a sharing percentage of 9.4% when calculating compensation BellSouth owes.