

ORIGINAL

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

IN RE:)
PETITION FOR ARBITRATION OF ITC^DELTACOM)
COMMUNICATIONS, INC. WITH BELLSOUTH) DOCKET NO. 990750-TP
TELECOMMUNICATIONS, INC. PURSUANT TO)
THE TELECOMMUNICATIONS ACT OF 1996)

REBUTTAL TESTIMONY

OF

WILLIAM E. TAYLOR, Ph.D.

ON BEHALF OF

BELLSOUTH TELECOMMUNICATIONS, INC.

SEPTEMBER 13, 1999

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1 **I. INTRODUCTION AND SUMMARY**

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

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

7 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL, PROFESSIONAL, AND BUSINESS**
8 **EXPERIENCE.**

9 A. I have been an economist for about twenty-five years. I earned a Bachelor of Arts degree
10 from Harvard College in 1968, a Master of Arts degree in Statistics from the University of
11 California at Berkeley in 1970, and a Ph.D. from Berkeley in 1974, specializing in
12 Industrial Organization and Econometrics. For the past twenty-five years, I have taught
13 and published research in the areas of microeconomics, theoretical and applied
14 econometrics, which is the study of statistical methods applied to economic data, and
15 telecommunications policy at academic and research institutions. Specifically, I have
16 taught at the Economics Departments of Cornell University, the Catholic University of
17 Louvain in Belgium, and the Massachusetts Institute of Technology. I have also conducted
18 research at Bell Laboratories and Bell Communications Research, Inc. I have participated
19 in telecommunications regulatory proceedings before many state public service
20 commissions, including the Florida Public Service Commission ("Commission"). Since
21 1983, I have testified or otherwise participated before this Commission about ten times.
22 Most recently, I have appeared before the Commission in Docket Nos. 980696-TP (on

1 sizing and measuring the cost of a state universal service fund) and 980000-SP (direct and
2 reply affidavits on determining fair and reasonable local exchange rates using economic
3 principles) on behalf of BellSouth Telecommunications, Inc. In addition, I have filed
4 testimony before the Federal Communications Commission ("FCC") and the Canadian
5 Radio-television Telecommunications Commission on matters concerning incentive
6 regulation, price cap regulation, productivity, access charges, local competition, interLATA
7 competition, interconnection and pricing for economic efficiency. I have also testified on
8 market power and antitrust issues in federal court. My curriculum vita is attached as
9 Exhibit WET-1.

10 **Q. PLEASE DESCRIBE NERA, YOUR PLACE OF EMPLOYMENT.**

11 A. Founded in 1961, National Economic Research Associates or NERA is an internationally
12 known economic consulting firm. It specializes in devising economic solutions to
13 problems involving competition, regulation, finance, and public policy. Currently, NERA
14 has more than 275 professionals (mostly highly experienced and credentialed economists)
15 with 10 offices in the U.S. and overseas offices in Europe (London and Madrid) and
16 Sydney, Australia. In addition, NERA has on staff several internationally renowned
17 academic economists as Special Consultants who provide their professional expertise and
18 testimony when called upon.

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

1 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

2 A. I have been asked by BellSouth Telecommunications, Inc. ("BellSouth")—an incumbent
3 local exchange carrier ("ILEC")—to address economic and regulatory issues raised in the
4 arbitration of an interconnection agreement between BellSouth and ITC^Deltacom
5 Communications, Inc. ("ITC^DeltaCom")—an alternative local exchange carrier
6 ("ALEC"). To this end, I review and comment on the testimonies of witnesses for
7 ITC^DeltaCom, principally Don J. Wood and Christopher J. Rozycki, regarding (1)
8 reciprocal compensation for traffic sent to Internet service providers ("ISPs"), (2) non-
9 recurring charges ("NRCs") for BellSouth's operations support systems ("OSS"), and (3)
10 performance benchmarks, parity, and penalties for non-compliance.

11 **Q. PLEASE SUMMARIZE YOUR POSITION ON THOSE ISSUES.**

12 A. My position on the issues is summarized as follows:

13 ***I. Inter-Carrier Compensation for ISP-Bound Calls***

- 14 1. The FCC has ruled that ISP-bound calls are jurisdictionally interstate, not local.
15 Therefore, the proper model of interconnection that applies to ISP-bound calls is not
16 that between an originating ILEC and a terminating ALEC, but that between an
17 originating ILEC and an inter-exchange carrier ("IXC").
- 18 2. Reciprocal compensation should not be paid by the originating ILEC for ISP-bound
19 calls. Instead, the ISP should compensate that carrier (and any other carrier that
20 switches the ISP-bound call) for the end-to-end cost caused by the ISP customer, and
21 recover that cost directly from the ISP customer.
- 22 3. Contrary to ITC^DeltaCom's view, the ISP is not an end-user (of a serving ALEC) but
23 rather a carrier. Therefore, like the IXC that pays carrier access charges to defray the
24 cost of originating and terminating a long distance call, the ISP should pay analogous
25 usage-based charges to defray costs incurred by other carriers on its behalf to originate
26 an ISP-bound call.
- 27 4. Persisting with reciprocal compensation (from the ISP customer's originating ILEC to
28 the ALEC that ultimately switches the call to the ISP) would generate an inefficient
29 subsidy for Internet use, distort the local exchange market, and generate unintended
30 arbitrage opportunities for ITC^DeltaCom and other ALECs. These would be
31 opportunities for those ALECs to specialize in serving ISPs with the sole aim of
32 accumulating reciprocal compensation revenues.
- 33 5. Based on the FCC ruling that ISP-bound calls are primarily interstate, two states
34 (Massachusetts and New Jersey) have recently declared that the payment of reciprocal
35 compensation by ILECs originating ISP-bound calls be stopped. Massachusetts

1 regulators, in particular, have noted that by encouraging arbitrage opportunities, the
2 reciprocal compensation regime of inter-carrier compensation for ISP-bound calls
3 subverts real local exchange competition.

4 **II. Charges for Operations Support Systems**

- 5 1. ALECs seeking access to the ILEC's OSS must use electronic interfaces and related
6 systems created specifically for that purpose. The economic principle of cost causation
7 requires that (1) OSS-requesting carriers pay for the costs they cause and (2) the prices
8 charged for that purpose reflect the forward-looking costs to provide access to OSS.
- 9 2. Access to OSS generates both recurring and non-recurring costs. The non-recurring
10 costs themselves arise from development (of interfaces and the like) and use (associated
11 with every service order). Development costs vary primarily with the amount of capital
12 (degree of automation) built into the interfaces, while use costs vary primarily with the
13 extent of labor required. There is a trade-off between these two types of cost: the
14 higher one is, the lower the other will be.
- 15 3. OSS-requesting carriers must be required to pay for both development and use costs.
16 Contrary to ITC^DeltaCom's position, if development costs are not recovered from
17 those carriers, there would be a strong incentive for those carriers to demand interfaces
18 and related systems excessively, in terms of both quantity and quality.

19 **III. Performance Benchmarks, Parity, and Penalties**

- 20 1. The so-called three-tiered "performance guarantee system" proposed by ITC^DeltaCom
21 for its interconnection agreement with BellSouth calls for penalties or liquidated
22 damages for specified levels of failure by BellSouth to achieve performance
23 benchmarks. This system is unnecessary for assuring acceptable performance, and
24 suitable opportunities for redress are available elsewhere.
- 25 2. ITC^DeltaCom chooses its proposed penalties or liquidated damages capriciously and
26 fails to link the size of those penalties or liquidated damages to actual proven economic
27 loss or damage. Therefore, ITC^DeltaCom's proposed method for seeking competitive
28 parity is arbitrary and a potential source of unearned income.
- 29 3. If ITC^DeltaCom's ill-conceived performance guarantee system is implemented, there
30 could be a strong incentive for ITC^DeltaCom to engage in moral hazard behavior
31 (which, in economics, is a form of gaming by which one party to a contract may act in
32 ways—within the framework of the existing contract—that create an unanticipated
33 competitive or financial advantage for that party *at the expense of the other party* to the
34 contract). Under moral hazard, the better informed of the two contracting parties has an
35 incentive to induce an increase in the risk of default by—or loss to—the other party.
36 ITC^DeltaCom's performance guarantee system would likely to raise the risk of non-
37 compliance by BellSouth and provide opportunities for ITC^DeltaCom to receive
38 unearned income.

1 **II. INTER-CARRIER COMPENSATION FOR ISP-BOUND CALLS**

2 **Q. MR. ROZYCKI STATES [AT 22] ITC^DELTACOM'S POSITION THAT**
3 **RECIPROCAL COMPENSATION SHOULD BE CONTINUED TO BE PAID FOR**
4 **ISP-BOUND CALLS. DO YOU AGREE?**

5 A. No, for two reasons. First, as the FCC has already correctly determined, calls made to
6 Internet destinations are more likely to be jurisdictionally interstate than local.¹ Second,
7 the cost causation principle implies that the relationship between the end-user and the ISP
8 is analogous to that between the end-user and an inter-exchange carrier ("IXC").
9 Therefore, the ISP should be required to pay usage-based charges to the ILEC and/or
10 ALEC akin to the access charges currently paid by IXCs to the ILEC for all long distance
11 calls carried.

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

14 A. The FCC recently stated that it:
15 traditionally has determined the jurisdictional nature of communications by the
16 *end points* of the communication and consistently has rejected attempts to divide
17 communications at any intermediate points of switching or exchanges between
18 carriers.²

19 Based on this premise, the FCC explained that calls made to the Internet:
20 do not terminate at the ISP's local server ... but continue to the ultimate
21 destination or destinations, specifically at an Internet website that is often
22 located in another state. The fact that the facilities and apparatus used to deliver
23 traffic to the ISP's local servers may be located within a single state does not
24 affect [the FCC's] jurisdiction. ... Indeed, in the vast majority of cases, the
25 facilities that incumbent LECs use to provide interstate access are located

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.

² Internet Traffic Order, ¶10. Emphasis added.

1 entirely within one state.³

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

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

³ *Id.*, ¶12. Footnotes omitted.

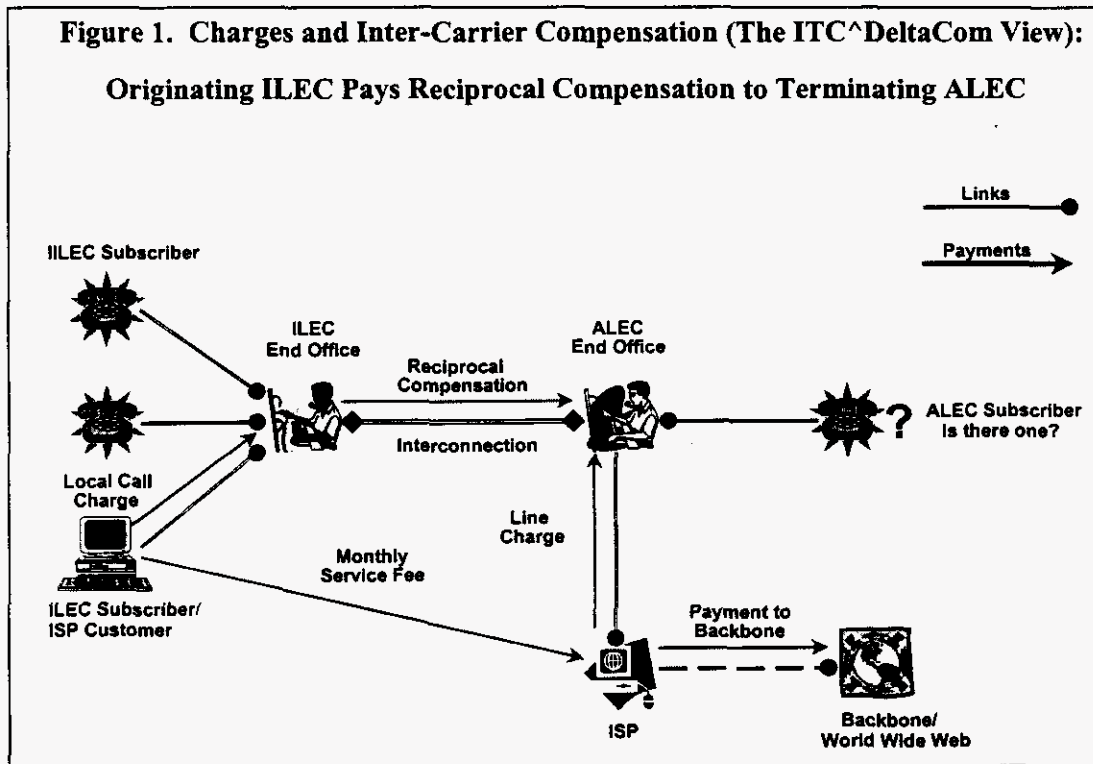
⁴ FCC, *In the Matter of Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order ("Local Competition Order"), released August 8, 1996, ¶1040.

⁵ Internet Traffic Order, ¶18.

1 call would be "jurisdictionally mixed," as the FCC has already correctly determined.

2 **Q. PLEASE EXPLAIN HOW COST CAUSATION DETERMINES THAT ISPs ARE**
3 **ANALOGOUS TO IXCs AND SHOULD THUS PAY CHARGES SIMILAR TO**
4 **ACCESS CHARGES.**

5 A. To understand this point, it is first necessary to recapitulate the erroneous view of the
6 network that underlies ITC^DeltaCom's belief that an Internet call is jurisdictionally local.



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

- 8 1. The ILEC subscriber that calls the Internet is acting as a *customer* of the originating
- 9 ILEC,⁶ even when the call goes through the ISP to which it pays monthly access

⁶ 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.

1 fees.⁷

2 2. The ISP itself is not a carrier but an end-user of the ALEC that terminates the Internet
3 call for the ISP.

4 These assumptions are epitomized by two assertions by Mr. Rozycki:

5 BellSouth's proposal [about reciprocal compensation] discriminates ... [by
6 denying] ... ITC^DeltaCom the ability to recover its costs for terminating local
7 calls for BellSouth.⁸

8 and

9 The ISP pays for its local phone line, just as any user or receiver of telephone
10 calls.⁹

11 The first statement confirms ITC^DeltaCom's view that the cost of an ISP-bound call made
12 by the ILEC's subscriber must be recovered from the ILEC. The second statement reflects
13 ITC^DeltaCom's view that an ISP is akin to all end-users. Mr. Rozycki also rules out [at
14 28] the recovery of any other cost associated with carriage of an ISP-bound call from the
15 ISP.

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

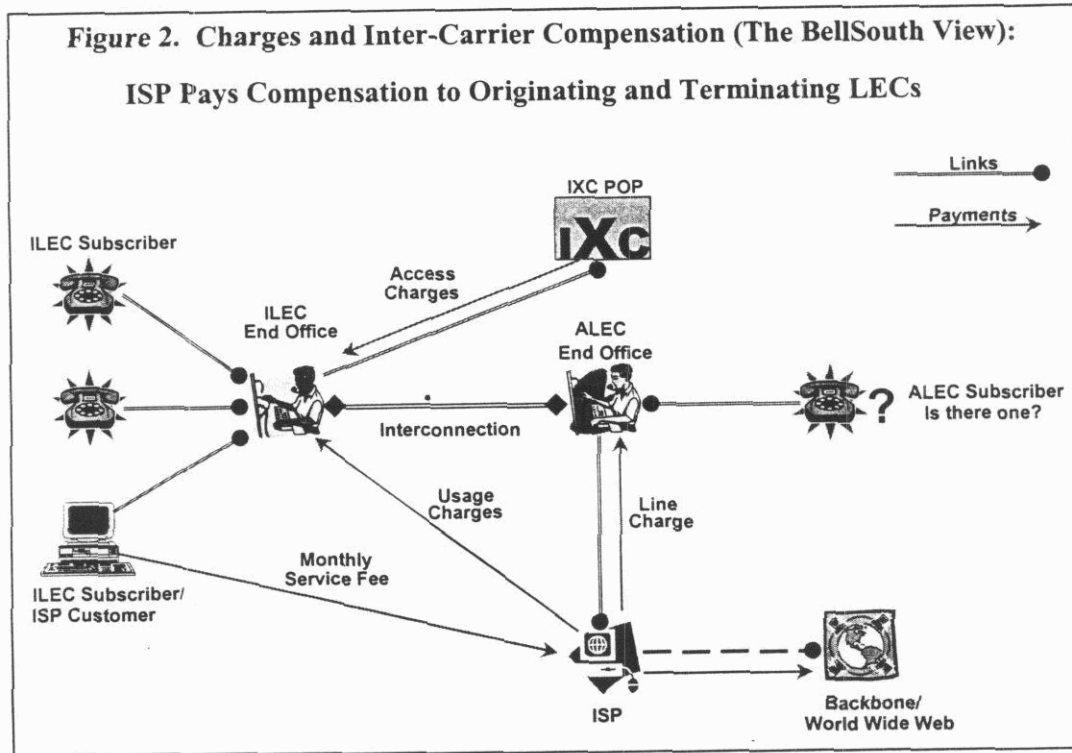
26 This conclusion is fundamentally incorrect because it ignores cost causation,
27 specifically, that the ILEC subscriber that makes the Internet call does so *while acting as a*

⁷ An implicit assumption here is that the ISP has a point of presence in the local calling area of the Internet caller.

⁸ Direct testimony of Christopher J. Rozycki, at 22.

⁹ *Id.*, at 27.

1 customer of the ISP to which it pays monthly fees for Internet access and which, in return,
 2 markets directly to the customer and provides a point of presence in the customer's local
 3 calling area in order to provide easy access. Thus, the same subscriber that acts in the
 4 capacity of a customer of the originating ILEC when making a local voice call is seen to act
 5 in the capacity of a customer of the ISP when making an Internet call. This situation is not
 6 an unfamiliar one; in fact, it is exactly analogous to the subscriber acting in the capacity of
 7 a customer of an IXC when making a long distance call. This analogy—and the proper
 8 cost causation view of Internet calling—is explained in Figure 2.



- 9 This view of the network, depicted by Figure 2, rests on two different assumptions:
- 10 1. The ILEC subscriber that calls the Internet is acting as a customer of the ISP to which it
 - 11 pays monthly access fees, even though the call is facilitated by the originating ILEC and
 - 12 the ALEC serving the ISP.
 - 13 2. The ISP is viewed as a carrier—akin to an enhanced service provider (“ESP”)—that

1 routes the Internet call through the backbone network to its final destination. The ISP
2 performs standard carrier functions such as transport and routing, as well as maintains
3 leased facilities within the backbone network.

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

10 Validity for this set of assumptions comes from the principle of cost causation. This
11 principle suggests that, *for the purposes of an Internet call*, the subscriber is properly
12 viewed as a customer of the ISP, not of the originating ILEC (or even of the ALEC serving
13 the ISP). The ILEC and the ALEC simply provide access-like functions to help the Internet
14 call on its way, just as they might provide originating or terminating carrier access to help
15 an IXC carry an interstate long distance call. Therefore, with the proper network model
16 being analogous to ILEC-IXC interconnection (access), rather than to ILEC-ALEC
17 interconnection, the proper form of inter-carrier compensation should be usage-based
18 charges analogous to carrier access charges for long distance calls, rather than reciprocal
19 compensation.

20 **Q. PLEASE EXPLAIN THE CONTRAST BETWEEN THESE TWO “MODELS” OF**
21 **INTERCONNECTION IN MORE DETAIL.**

22 **A. *ILEC-ALEC Interconnection Model.*** When a BellSouth subscriber places a local call that
23 terminates to a ALEC subscriber, what functions does BellSouth perform? Obviously, it
24 originates the call, providing dialtone, local switching, and transport to the ALEC’s point
25 of interconnection. In addition, BellSouth has marketed the service to its subscriber (and
26 customer of local calls), determining the price and price structure and other terms and
27 conditions under which the customer decides to place the call. BellSouth will determine if
28 the call has been completed, bill the customer for the call (if measured service applies) or
29 for flat-rate service, answer questions regarding the bill or the service and collect money
30 from the customer or lose the revenue if it is unable to collect from the customer. The

1 story is precisely symmetric if the originating party is a ALEC customer and BellSouth or
2 another ALEC terminates the call.

3 Thus, under ILEC-ALEC interconnection (see Figure 1), the originating subscriber is
4 the cost-causing party and is the customer of the originating ILEC. That originating ILEC
5 charges its cost-causing customer for the entire end-to-end call and compensates the ALEC
6 that terminates the call. The originating ILEC's network costs plus the compensation it
7 pays is—in theory—recovered from the local call charge it levies on its (originating)
8 customer. The terminating ALEC's costs are recovered from the compensation payment it
9 receives from the originating ILEC. In this arrangement, both parties recover their costs,
10 and the cost-causer is (again, in principle) billed for the entire cost he or she causes both
11 carriers to incur. Thus, this arrangement is not an arbitrary regulatory or legal construction:
12 for local interconnection between an ILEC and a ALEC, it makes economic sense. It could
13 arise spontaneously in unregulated competitive markets where the ILEC serving the
14 originating subscriber acts effectively as its agent in making necessary network and
15 financial arrangements with a ALEC to terminate the call, just as General Motors may
16 purchase goods or services from Ford or Bendix to include in an automobile purchased by
17 a General Motors customer.

18 ***ILEC-IXC Interconnection Model.*** In contrast, when a BellSouth subscriber places
19 a long distance call using, e.g., AT&T, BellSouth's function is limited to recognizing the
20 carrier code (or implementing presubscription in its switch) and switching and transporting
21 the call to AT&T's point of presence. While at some level, the functions its network
22 performs are similar to those used to deliver local traffic to a ALEC¹⁰, the economic
23 functions are very different. It is AT&T that has marketed the service to its customer,
24 determined the price and price structure and other terms and conditions of the call. AT&T
25 will send, explain, and collect the bill from the customer or lose the revenue if it cannot.
26 Thus, under ILEC-IXC interconnection, the originating subscriber is, from an economic

¹⁰ BellSouth supplies the customer's loop and provides dialtone, local switching, and transport to AT&T's point of presence.

1 perspective, the customer of the IXC, not the originating ILEC.

2 When an ILEC (or ALEC) subscriber places long distance calls, he acts as a cost-
3 causing customer of the IXC. Figure 2 shows that the ILEC subscriber, acting as an IXC
4 customer, causes costs at various points in the networks involved: for the ILECs/ALECs
5 that originate and terminate the long distance call, as well as for the IXC that transports it
6 between local exchanges. The IXC receives revenue from the customer which it uses, in
7 turn, to pay originating and terminating access charges to the ILECs/ALECs involved and
8 to cover its own network and administration costs. In effect, the IXC acts as its customer's
9 agent in assembling the necessary local exchange components of the call. The
10 ILECs/ALECs involved recover their costs from access charges. If more than one such
11 carrier is involved in delivering the call from the end user to the IXC, they typically divide
12 the access charges paid by the IXC in proportion to the costs incurred to provision the
13 access portion of the call. Thus, in principle, the cost-causing customer faces a price that
14 reflects all of the costs the call engenders, and all parties that incur costs to provision the
15 call have a claim on the cost-causer's payment.

16 Thus, from an economic perspective, ILEC-IXC interconnection and ILEC-ALEC
17 interconnection have fundamentally similar characteristics but the actors play different
18 roles. In both cases, the originating ILEC subscriber is the cost-causer, and it pays its
19 supplier (the party with whom it has contracted for service) for the end-to-end service it
20 receives in both regimes. The difference is that in the ILEC-ALEC local interconnection
21 regime, the cost-causer is acting as the customer of the originating ILEC, while in the
22 ILEC-IXC regime, the cost-causer acts as the customer of the IXC.

23 **Q. WHY DOES ILEC-ALEC-ISP INTERCONNECTION RESEMBLE THAT**
24 **BETWEEN THE ILEC AND THE IXC BUT NOT THAT BETWEEN THE ILEC**
25 **AND THE ALEC?**

26 A. The question at issue is when multiple ILECs/ALECs combine to deliver traffic to an ISP,
27 are they interconnecting in an ILEC-ALEC local interconnection regime or an ILEC-IXC
28 interstate access charge regime? The FCC has characterized the link from an end-user to
29 an ISP as an *interstate* access service and absent other considerations, ISPs would be

1 subject to charges analogous to interstate access charges. As far back as 1983, the FCC
2 concluded that ESPs (which, today, would include ISPs) are “among a variety of users of
3 access service” in that they “obtain local exchange services or facilities which are used, in
4 part or in whole, for the purpose of completing interstate calls.”¹¹

5 The service provided by an ISP exists to enable the ISP’s customers to access
6 information and information-related services stored on special computers or web servers at
7 various locations around the world. The ISP typically facilitates such access by selling a
8 flat-rated monthly or yearly Internet access service that, in most cases, calls for that ISP
9 customer to make only a local call in order to reach the ISP’s modems. Besides price, ISPs
10 compete on the extent of geographic coverage, specifically, the number of local calling
11 areas they can offer to ISP customers as possible points of connection (“POCs”), as well as
12 on various components of service quality including provision of specialized information
13 services.¹² The ISP markets directly to the originating ILEC’s subscriber, attempting to
14 maximize its number of customers and the amount of traffic *incoming* to it by publishing
15 and advertising as many local calling numbers (at its POCs) as possible, and doing
16 everything within its power to help the potential customer avoid having to incur per-minute
17 or toll charges to have Internet access. If necessary, ISPs may use foreign exchange (“FX”)
18 lines to haul Internet traffic from considerable distances while still offering service to the
19 ISP customer for the price of a local call.¹³ Some ISPs offer 800 service for their customers
20 to access their network when flat-rate local calling is unavailable, although there are some

¹¹ FCC, *In Re: MTS and WATS Market Structure*, CC Docket No. 78-72, Memorandum Opinion and Order (“MTS/WATS Order”), 1983.

¹² The POCs are points at which the carrier serving the ISP (which may be a ALEC) terminates the ISP-directed call and routes it to the ISP.

¹³ 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.

1 which impose a per-minute charge on the subscriber for such access. Some ISPs maintain
2 Internet gateways for their customers and earn revenue from advertisers that depend more
3 or less directly on the number of customers and the number of times its customers access
4 advertised sites. The ISP bills its customers for their access and usage, and it is the ISP
5 that loses money if it cannot collect from them. From an economic perspective, then, the
6 party that causes the cost associated with ISP-bound traffic is the originating ILEC's
7 subscriber who acts in the capacity of an ISP customer. In this sense, ISP-bound traffic has
8 the same characteristics as IXC-bound traffic in the ILEC-IXC regime and has
9 characteristics opposite to ALEC-bound traffic in the ILEC-ALEC local interconnection
10 regime.

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

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

¹⁴ 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.

1 For both of these reasons, it would be naïve to think that the originating ILEC's subscriber
2 fully compensates that ILEC for the end-to-end cost of the ISP-bound call.¹⁵

3 All of these are reasons why instead of the ILEC paying reciprocal compensation
4 (or, a terminating charge) to ALECs as in the ILEC-ALEC local interconnection regime,
5 for Internet calls by the ILEC subscriber, ISPs should pay the ILEC (and the ALEC that
6 also serves it) usage charges analogous to carrier access charges paid by IXCs. Only such a
7 payment will close the gap between the full cost of the call up to the ISP and the local call
8 charge that is assessed to the end-user by the originating ILEC. In this economically
9 correct view of inter-carrier compensation, the ALEC that switches Internet calls for the
10 ISP is compensated not from reciprocal compensation paid by the originating ILEC but
11 from usage-based charges paid to it by the ISP.

12 **Q. HOW DO YOU RESPOND TO MR. ROZYCKI'S BELIEF [AT 26] THAT THE**
13 **CALLING PARTY SHOULD PAY FOR AN ISP-BOUND CALL?**

14 A. I agree that the calling party (here, the ISP customer) should pay for the ISP-bound call.
15 But that does not logically translate into the requirement that *BellSouth* (whose subscriber
16 happens to be the ISP's customer) should pay part or all of the cost of that call. Instead,
17 from the cost-causative standpoint explained above, the ISP itself and its customer (the true
18 calling party) should pay all facilitating carriers (the ILEC and the ALEC alike) for the ISP-
19 bound call. This is exactly the situation when the ILEC's subscriber makes a long distance
20 call. The costs incurred by ILECs and/or ALECs to carry that call to and from the IXC's
21 network are recovered from the IXC and its long distance customer, not from the carriers
22 that provide access.

23 **Q. IS MR. ROZYCKI CONSISTENT IN HIS OWN VIEW ABOUT REQUIRING THE**
24 **CALLING PARTY TO PAY?**

25 A. Ironically, no. Mr. Rozycki draws a parallel [at 27] between long distance calls and

¹⁵ 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.

1 Internet calls, and concludes that each carrier facilitating the carriage of those calls should
2 be compensated. For example, Mr. Rozycki states:

3 Calls to the Internet are similar [to long distance calls] in that there are multiple
4 parts to each Internet session. Assuming the call is initiated over standard phone
5 lines, the initial part of the call, its delivery to the ... ISP, may be handled by one
6 or more carriers. Each of these carriers plays a roll (sic) in delivering the call to
7 its destination, and as such, *each should be compensated*. [emphasis added]

8 This opinion reflects both ambivalence and a confused understanding of a "call." Mr.
9 Rozycki appears to conclude, correctly in my opinion, that facilitating carriers should be
10 compensated by those who cause costs. This would fit perfectly with the cost-causative
11 view of compensation that I explained above. Nothing in his statement above provides any
12 logical reason to seek compensation *from* the ILEC (or BellSouth); instead it eloquently
13 makes the case for payment to be made *to* the ILEC (or BellSouth). The rest of Mr.
14 Rozycki's testimony, however, does not square with this statement.

15 Mr. Rozycki's attempt to break a call down into its parts (based on which carrier is
16 conveying the call at any given point) may be useful for understanding the network
17 configuration that underlies the call, but it says nothing about how the *cost* of the call
18 should be recovered. Instead, understanding the parts helps primarily in determining which
19 carriers participate in the carriage of the call and would, therefore, need to be compensated.
20 For purposes of determining the full cost caused by the calling party, however, it is
21 necessary to view the call from end to end, rather than in its intermediate stages. That is
22 why the FCC declined to view the Internet call in terms of its parts. Instead, in reaching
23 the judgment that Internet calls are generally interstate in nature, the FCC viewed such
24 calls from end to end.

25 **Q. MR. ROZYCKI CLAIMS [AT 28] THAT "IN ESSENCE, BELLSOUTH HAS TOLD**
26 **ITC^DELTACOM THAT [ITC^DELTACOM] MUST PROVIDE [BELLSOUTH]**
27 **FREE USE OF [ITC^DELTACOM'S] NETWORK FOR ALL CALLS TO THE**
28 **INTERNET." IS THIS TRUE?**

29 **A.** Absolutely not. Quite the contrary, BellSouth does not deny ITC^DeltaCom compensation
30 for the costs it incurs to handle ISP-bound calls. Instead, BellSouth's position, correctly

1 based on cost causation, is that the costs in question should be recovered from the ISP and,
2 indirectly, the ISP customer rather than from BellSouth or any other carrier facilitating ISP-
3 bound calls.

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

6 A. No. Even though the FCC has recently declared that ISP-bound traffic is, at best,
7 jurisdictionally mixed and is, in most instances, interstate, no rulemaking has yet occurred
8 to establish such charges for ISPs. There remains considerable uncertainty as to when rules
9 to this effect will be established. Also, ISPs are currently beneficiaries of an exemption
10 from paying interstate carrier access charges that has been granted to ESPs since 1983.¹⁶ I
11 understand, however, that the exemption itself only applies to payment of access charges to
12 ILECs. Thus, ALECs could, if they so chose, still assess access-like charges on ISPs that
13 use their network.

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

16 A. For a period of time until the FCC's Internet Traffic Order was issued in early 1999, a
17 number of states pursued their own rulemaking on the issue. Those states chose to adopt
18 the ILEC-ALEC local interconnection view of the world and required that the originating
19 ILEC pay reciprocal compensation to terminating ALECs for ISP-bound calls just as they
20 would for local voice calls. After the FCC's Internet Traffic Order was issued, regulators
21 in Massachusetts, who had previously also adopted the local interconnection view, reversed
22 themselves and declared the unqualified payment of reciprocal compensation for ISP-

¹⁶ 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.

1 bound traffic to be antithetical to real competition in telecommunications.¹⁷ More recently,
2 regulators in New Jersey also ordered that reciprocal compensation not be paid for ISP-
3 bound traffic.¹⁸

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

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

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

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

¹⁷ 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 ALECs serving ISPs in Massachusetts currently do not themselves receive any compensation for ISP-bound traffic.

¹⁸ 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.

1 customers and shareholders.¹⁹

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

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

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

12 **Q. PLEASE EXPLAIN HOW THE ILEC-ALEC INTERCONNECTION REGIME**
13 **FOR ISP-BOUND TRAFFIC COULD CAUSE INEFFICIENT SUBSIDIZATION**
14 **OF INTERNET USERS BY NON-USERS.**

15 A. The principle of cost causation requires that the *ISP customer* pay at least the cost its call
16 imposes on the circuit-switched network.²⁰ Suppose inter-carrier compensation for ISP-
17 bound traffic is treated as in the ILEC-ALEC interconnection regime (Figure 1). This
18 regime assumes at the outset that the customer initiating the call has paid the originating
19 ILEC for the end-to-end carriage of the call, typically, the per-call equivalent of the local
20 call charge. Out of what it receives, the ILEC would then pay reciprocal compensation to
21 the ALEC that terminates to the ISP. This compensation is a per-minute call termination
22 charge which, ideally, should reflect the incremental cost that the ILEC *avoids* by not
23 having to terminate the call itself. In this scenario, problems can emerge from two sources.
24 First, if the local call charge is itself inefficient, e.g., it is below the incremental cost of
25 carrying an end-to-end local voice call, then it cannot be sufficient to allow recovery of

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.

1 both the ILEC's incremental cost to originate the call and the ALEC's incremental cost to
2 terminate the call. In other words, once reciprocal compensation has been paid, the ILEC
3 would fail to recover its cost of carrying the ISP-bound call when the local call charge itself
4 is inefficient. If the ILEC breaks even for *all* of its services in these circumstances, that
5 would mean that Internet use (for which the cost exceeds revenue) is being subsidized by
6 non-Internet and, most likely, non-local exchange services.

7 Second, if the cost to terminate an ISP-bound call is *less* than the cost to terminate
8 the average voice call (on which most reciprocal compensation arrangements are based),
9 then the ALEC would recover in excess of its cost. Even if the local per-call charge were
10 compensatory, the ILEC could still end up with a higher cost liability than necessary (the
11 sum of its own originating cost and the ALEC's inflated termination charge) and a net
12 revenue deficit from carrying the ISP-bound call. Again, the Internet user would not be
13 paying the cost he imposes on the originating ILEC (equivalent to receiving a subsidy).²¹

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

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

23 A. The originating ILEC's dilemma would then be to find a solution to the subsidization
24 problem that is both economically correct and politically feasible. The subsidy to Internet

²¹ Ironically, Mr. Rozycki too is worried about subsidization, except he finds it in the wrong place. For example, he asserts [at 23] that "BellSouth is trying to establish a pricing scheme where ITC/DeltaCom and its customers will subsidize the profit margins and the stockholders of BellSouth." This represents not only a distorted view of a subsidy—typically the *price* paid by a group of customers is subsidized, not profit margins—but also turns the actual direction of the subsidy on its head.

1 use can be eliminated by charging differently for such use than for voice calls.
2 Specifically, this would mean that Internet use is charged a higher rate than other local
3 calls. While this solution would, in principle, appear economically feasible, it would
4 require that ILECs be able to distinguish calls headed for Internet destinations from those
5 headed for non-Internet destinations within the local calling area, and to charge for *each*
6 *call* accordingly. Assuming that ILECs are able to make that distinction, such a solution
7 would, nevertheless, mark a significant departure from the current practice of charging all
8 customers within the same calling area the same averaged residential local rate on a flat-
9 rated basis (i.e., not per call). A movement in this direction is far from certain at this time.

10 **Q. HOW WOULD THE ILEC-IXC INTERCONNECTION REGIME WITH THE**
11 **PAYMENT OF ACCESS-LIKE USAGE-BASED CHARGES REMEDY THIS**
12 **PROBLEM?**

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

25 **Q. PLEASE EXPLAIN HOW THE ILEC-ALEC INTERCONNECTION REGIME**
26 **FOR ISP-BOUND TRAFFIC COULD CAUSE THE LOCAL EXCHANGE**
27 **MARKET TO BE DISTORTED.**

28 A. Under the ILEC-ALEC interconnection regime, the compensation paid to ALECs evidently

1 exceeds the cost they incur in terminating the traffic and also exceeds whatever costs
2 BellSouth might save when ALECs terminate the traffic. That the prices do not reflect
3 costs should not be surprising. In Florida, interconnection prices are based on BellSouth's
4 forward-looking TELRIC costs of terminating traffic averaged over a wide range of end-
5 users.²² In fact, the cost of terminating traffic to particular end-users varies a great deal,
6 depending upon their location and the characteristics of the traffic. When traffic is
7 balanced²³ between the ILEC and the ALEC, the accuracy of the TELRIC study is less
8 material; an ILEC that overpays to terminate traffic on the ALEC's network is
9 compensated when the ALEC overpays to terminate traffic on the ILEC's network. Thus,
10 when traffic is balanced, no individual ILEC or ALEC is helped or handicapped in
11 competing for retail customers in the local exchange market by the requirement that
12 interconnection prices be based on TELRICs averaged over all customers.

13 However, when traffic between the ILEC and the ALEC is grossly unbalanced, e.g.,
14 when the ALEC originates little or no traffic, the accuracy of the TELRIC study for the
15 traffic served by that ALEC is critical. If the cost to BellSouth to deliver ISP-bound traffic
16 to the ISP is the same as to a specialized ALEC collocated with the ISP, then paying
17 reciprocal compensation at an averaged rate would cause BellSouth's total cost of local
18 service to increase. This cost increase would not be offset by a similar increase in revenue
19 from terminating the ALEC's traffic (because the ALEC does not originate any traffic).
20 Thus, local exchange competition would be distorted by the inapplicability of the averaged
21 TELRIC to ISP traffic; ALECs that primarily serve ISPs (and originate little or no traffic)
22 would receive revenues in excess of cost while ILECs (or even other ALECs) that serve all
23 types of customers would experience an increase in costs without a commensurate increase
24 in revenues.

²² 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.

²³ Traffic is said to be "balanced" when originating and terminating volumes are similar.

1 **Q. DOES THAT MEAN THAT RECIPROCAL COMPENSATION IS ILL-ADVISED**
2 **BECAUSE TRAFFIC BETWEEN THE ORIGINATING ILEC AND THE ALEC**
3 **THAT TERMINATES ISP TRAFFIC IS UNBALANCED?**

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

14 **Q. PLEASE EXPLAIN HOW THE ILEC-ALEC INTERCONNECTION REGIME**
15 **FOR ISP-BOUND TRAFFIC COULD CREATE PERVERSE INCENTIVES TO**
16 **ARBITRAGE THE SYSTEM AT THE EXPENSE OF BASIC EXCHANGE**
17 **RATEPAYERS.**

18 A. Arbitrage is frequently a response to a market distortion. As the DTE in Massachusetts
19 clearly recognized, unintended arbitrage opportunities can easily emerge when competition
20 in the local exchange market is distorted by basing inter-carrier compensation for ISP-
21 bound traffic on the ILEC-ALEC local interconnection regime. When the compensation
22 available to the ALEC for terminating ISP-bound traffic exceeds its actual cost of
23 terminating that traffic, the ALEC will have a strong incentive to terminate as much ISP
24 traffic as possible. Profit maximization can elicit some very inventive schemes that take
25 advantage of this discrepancy but, in the process, distort market outcomes and reduce the
26 efficiency of the telecommunications network. For example, the ALEC's profits would
27 increase whenever a BellSouth subscriber—or its computer—could be induced to call the
28 ISP and remain on the line 24 hours a day. Sensing this pure arbitrage profit opportunity,
29 ALECs would also have a strong incentive—indeed, have as their *raison d'être*—to

1 specialize only in terminating ISP-bound traffic, to the exclusion of offering any other type
 2 of local exchange service. These “ISP-specializing” ALECs can—and do—easily form a
 3 three-way axis with the sole purpose of generating revenues from reciprocal compensation:
 4 the ALECs themselves, ISPs that have their traffic terminated by those ISPs but may also
 5 receive a share of the reciprocal compensation revenues—the spoils of this arrangement—
 6 to insure their loyalty and cooperation, and ISP customers on the originating ILEC’s
 7 network that generate the ISP-bound traffic. Also, the ISPs themselves are better off if
 8 their customers obtain their non-Internet local telephone service not from the ALECs that
 9 terminate ISP-only traffic but from the ILEC or other ALECs that do not serve ISPs. This
 10 is likely to create a further distortion in the local exchange market, contrary to the vision of
 11 competition embodied in the Telecommunications Act of 1996 (“1996 Act”).

12 It is not surprising, therefore, that the DTE in Massachusetts felt compelled to opine
 13 that *termination* of the obligation for reciprocal compensation payments for ISP-
 14 bound traffic (because that traffic is no longer deemed local) removes the
 15 incentive for ALECs to use their regulatory status “solely (or predominately)” to
 16 funnel traffic to ISPs.²⁴

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

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

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

27 Instead, the FCC has required separate cost studies to justify a cost-based termination rate
 28 which the FCC explicitly expects would be lower than the wireline ILECs’ TELRIC-based

²⁴ Massachusetts ISP Compensation Order.

²⁵ Local Competition Order, ¶1093.

1 rate. Note that the paging case also involves one-way calling; like ISPs, paging companies
2 do not originate traffic.

3 More recently, the FCC has acknowledged that
4 efficient rates for inter-carrier compensation for ISP-bound traffic are not likely
5 to be based entirely on minute-of-use pricing structures. In particular, pure
6 minute-of-use pricing structures are not likely to reflect accurately how costs are
7 incurred for delivering ISP-bound traffic.²⁶

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

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

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

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

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

²⁶ Internet Traffic Order, ¶29.

²⁷ Massachusetts ISP Compensation Order. Emphasis added.

1 **Q. MR. ROZYCKI CONCLUDES [AT 28-29] THAT BELLSOUTH'S REFUSAL TO**
2 **"NEGOTIATE A FAIR PRICE" FOR THE HANDLING OF ISP-BOUND CALLS,**
3 **IN EFFECT, HOLDS ITC^DELTACOM HOSTAGE BECAUSE ANY FAILURE**
4 **BY ITC^DELTACOM TO CONTINUE CURRENT TERMS AND CONDITIONS**
5 **TO THE ISPs IT SERVES WOULD "DRIVE" THOSE ISPs BACK TO**
6 **BELLSOUTH. IS THAT CONCLUSION CORRECT?**

7 A. No. Mr. Rozycki's conclusion is based on the illusion that the current situation—in which
8 BellSouth is paying reciprocal compensation to ITC^DeltaCom for ISP-bound calls—is
9 economically efficient or socially desirable. Far from it, as I have explained, the payment
10 of such compensation subsidizes Internet calling and distorts local exchange competition.
11 If the cessation of reciprocal compensation were to force ITC^DeltaCom and other ALECs
12 to provide their services to ISPs at cost-based, rather than subsidized, prices, then fair
13 competition (for the business of ISPs) would be restored. ALECs that are thriving
14 currently on a reciprocal compensation-driven strategy of ISP-specialization would then
15 have to abandon those arbitrage opportunities and compete on fair and cost-based terms for
16 the *full* range of network services offered by an ILEC like BellSouth. Such an outcome
17 would clearly be in the public interest and consistent with the goals of the 1996 Act.

18 **III. CHARGES FOR OPERATIONS SUPPORT SYSTEMS**

19 **Q. IN THIS PROCEEDING, ITC^DELTACOM PRESENTS—MAINLY THROUGH**
20 **MR. WOOD'S TESTIMONY—ITS VIEW OF THE ECONOMIC ISSUES**
21 **UNDERLYING THE SUPPLY OF OSS INTERFACES BY BELLSOUTH. IN**
22 **RESPONSE TO MR. WOOD'S TESTIMONY, FIRST PLEASE EXPLAIN WHAT**
23 **OSS ARE.**

24 A. OSS include electronic interfaces, databases, and other systems required for various
25 functions, e.g., pre-ordering, ordering, provisioning, maintenance and repair, billing, etc.
26 An ILEC like BellSouth routinely uses its OSS to serve its customers. In its
27 implementation of various competition-related provisions of the 1996 Act, the FCC found
28 that OSS functions are "essential to the ability of competitors to provide services in a fully

1 competitive local service market.”²⁸ The FCC further concluded that “[OSS] and the
2 information they contain fall squarely within the definition of ‘network element’ and must
3 be unbundled upon request under Section 251(c)(3) [of the 1996 Act]....”²⁹

4 **Q. WHAT ARE THE *NON-RECURRING COSTS ASSOCIATED WITH OSS?***

5 A. There are two economically distinct types of non-recurring OSS-related costs: (1) one-time
6 costs to modify existing and/or build new interfaces that give ALECs access to BellSouth’s
7 OSS databases and systems, and (2) non-recurring transactional costs associated with the
8 provisioning of services, i.e., costs to use the necessary interfaces to process a service
9 order.³⁰ The first type of OSS-related cost may be characterized as an “OSS development
10 cost,” and the second type as an “OSS use cost.”³¹ There is general agreement that the
11 standard for costing in both instances should be forward-looking economic costs.

12 **Q. WHAT IS THE ESSENTIAL DIFFERENCE BETWEEN OSS DEVELOPMENT
13 AND OSS USE COSTS?**

14 A. The difference between the two types of cost is analogous to the difference between fixed
15 and variable costs. OSS development cost is similar to fixed cost: it arises at the point a
16 new OSS is installed or an existing OSS is modified, but the level of that cost does not vary
17 with the number of unbundled network elements (“UNEs”) ordered or the actual use of the
18 OSS. The OSS may never actually be used by a ALEC, but the OSS development cost
19 would have been incurred anyway. OSS use cost, on the other hand, is more akin to
20 variable cost, namely, a cost that only arises in connection with use of a resource. Thus,
21 OSS use cost varies with the level of use (with a minimum of zero when no use occurs).

²⁸ Local Competition Order, ¶522.

²⁹ *Id.*, ¶516.

³⁰ Even though I use the shorthand “OSS,” it should be noted that my reference throughout is to OSS interfaces that BellSouth builds specifically for use by ALECs. Also, to be precise, while the type of cost in question may arise repeatedly as the interfaces are used to process different service orders, that cost remains fixed, hence, non-recurring *for each individual order*. There are also true recurring costs that are ongoing maintenance costs associated with each service order processed through the interfaces. My testimony does not address these recurring costs although BellSouth is entitled to recover them fully as well.

³¹ This terminology roughly parallels that adopted by Mr. Wood in his testimony.

1 Despite this essential difference, like fixed and variable costs generally, both OSS
2 development and OSS use costs should be measured on a forward-looking basis.

3 **Q. MR. WOOD DISTINGUISHES [AT 14] BETWEEN OSS DEVELOPMENT AND**
4 **OSS USE COSTS. IS THERE A RELATIONSHIP BETWEEN THOSE COSTS, OR**
5 **ARE THEY TOTALLY INDEPENDENT?**

6 A. Even though, as explained above, the two costs are different in nature, they may still be
7 related through an important economic trade-off. The level of technology embodied in an
8 OSS is not fixed in the long run. For example, systems may be more or less mechanized or
9 automated, and rely on computer or artificial intelligence, expert systems, etc. to varying
10 degrees. The less automated or complex systems require less human involvement or
11 operation, while highly sophisticated and fully automated systems may require little or no
12 human involvement. In this respect, capital and labor are substitutes, and more capital-
13 intensive systems tend to be generally more expensive.

14 OSS development cost usually depends more upon the amount and type of capital
15 built into the OSS. Thus, OSS embodying greater amounts of capital (or degree of
16 automation) tend to have higher OSS *development* costs, while OSS that rely on less
17 capital tend to have lower such costs. Since human labor is usually an important use-
18 related or variable cost, the level of OSS use costs varies directly with how much of that
19 resource is used. Thus, OSS that employ more capital but less labor tend to have lower
20 OSS *use* costs, and those that employ less capital and more labor tend to have higher such
21 costs. This inverse relationship between OSS development and OSS use costs is thus a
22 product of the type of OSS installed.

23 **Q. WHAT DECIDES THE OPTIMAL LEVEL OF OSS DEVELOPMENT AND OSS**
24 **USE COSTS?**

25 A. In a market economy, the actual technology platform that is adopted derives from the
26 choices that suppliers and users of OSS make. No single individual or firm may ultimately
27 be responsible for the system that emerges. Suppliers may have varied preferences about
28 the types of systems they wish to install, how much intelligence they wish to invest in their

1 systems, how quickly they wish to recover the economic cost of their systems, how much
2 of their own labor or other resources they wish to dedicate to the operation of their systems,
3 etc. Users may consider ease of use, availability of their own resources, customer
4 willingness to pay, etc., and different users may value these characteristics differently. It is
5 therefore difficult to determine the overall level of quality of OSS that would emerge in an
6 unregulated, competitive market. Systems for buying and selling stocks or withdrawing
7 money from banks are highly automated and accurate; systems for purchasing airline
8 tickets are labor intensive and relatively more prone to error. In any case, whatever type of
9 OSS emerges, it is certainly the case that—for a given level of quality—the technology
10 platform should minimize the present value of the *combined* OSS development and OSS
11 use costs associated with it. This minimization would take into account the economic
12 trade-off between OSS development and OSS use costs discussed above.

13 **Q. IS BELLSOUTH ENTITLED TO RECOVER ITS OSS-RELATED COSTS?**

14 A. Yes. In light of the FCC's conclusion that OSS are network elements to which requesting
15 carriers (e.g., ALECs) must be granted non-discriminatory access,³² cost recovery for OSS
16 should occur in the same manner as designated for other UNEs. Specifically, Section
17 252(d)(1) of the 1996 Act provides for recovery of the costs of UNEs and describes the
18 methodology for doing so. This provision allows the UNE provider (such as BellSouth) to
19 charge just and reasonable rates that are (1) based on forward-looking cost, (2)
20 nondiscriminatory, and (3) inclusive of a reasonable profit.

21 **Q. MR. WOOD SUGGESTS [AT 14] THAT OSS DEVELOPMENT COSTS (WHICH**
22 **HE LABELS "TRANSITION COSTS") MAY NOT BE RECOVERED FROM OSS-**
23 **REQUESTING CARRIERS BY BELLSOUTH. HAS EITHER THE 1996 ACT OR**
24 **THE FCC LIMITED RECOVERY TO SOME, BUT NOT ALL, OSS-RELATED**
25 **COSTS?**

26 A. No. The 1996 Act makes no specific mention of OSS. In its implementing rules, the FCC'

³² Local Competition Order, ¶523 and ¶525.

1 has declared that OSS be treated just like any UNE. The FCC has never specifically
2 limited recovery to some, but not all, OSS-related costs. From this, I conclude that the
3 FCC has intended all along that the provider of OSS should be able to recover *all* costs
4 related to the development and use of OSS. As explained above, these costs include both
5 one-time and ongoing costs.³³

6 **Q. WHAT ECONOMIC PRINCIPLE GOVERNS THE MANNER IN WHICH THE**
7 **COST OF ANY SERVICE SHOULD BE RECOVERED?**

8 A. As I stated earlier, the economic principle that determines how the cost of a service should
9 be recovered is cost causation. Requiring that entrants into a regulated market pay for the
10 costs caused by their entry ensures that only efficient entry takes place. After the 1996 Act
11 was passed, the FCC issued a *Notice of Proposed Rulemaking* in which it described its
12 purpose as being:

13 not to ensure that entry shall take place irrespective of costs, but to remove ...
14 barriers ... that inefficiently retard entry, and to allow entry to take place where it
15 can occur efficiently.³⁴

16 Economists concur with this objective because it recognizes that entry into markets
17 previously served by single suppliers, and subsequent competition in those markets, are not
18 ends in themselves.³⁵ Rather, social policy should favor entry and competition where such
19 entry ensures that customers *are made better off*. Where social policy mistakenly attempts

³³ Thus far, this Commission has left it to the interconnecting local exchange carriers themselves to work out terms and conditions for the provision of OSS interfaces. In its Order No. 98-0604-FOF-TP (in Docket Nos. 960757-TP, 960833-TP, and 960846-TP), the Commission noted that both the FCC and the Eighth Circuit Court of Appeals have deemed that OSS be regarded as UNEs and priced accordingly. In that Order, the Commission deferred the setting of rates for recovery of OSS-related costs to a future proceeding and, in Order No. 99-1013-FOF-TP (in Docket No. 981052-TP), reaffirmed that such rates would be determined in a future generic cost proceeding, not as part of an ongoing arbitration. Even though the Commission had earlier suggested (in Order No. 96-1579-FOF-TP in Docket Nos. 960833-TP, 960846-TP, and 960916-TP) that OSS-related costs be recovered in the same manner as costs of local number portability—under the standard of competitive neutrality, i.e., entrants and incumbents alike are responsible for cost recovery—the applicable cost recovery standard for UNEs (such as OSS) is instead “cost plus a reasonable profit,” as noted above.

³⁴ *Notice of Proposed Rulemaking* (“NPRM”) in CC Docket 96-98, ¶12.

³⁵ Adam Smith reminded us that with sufficient money and will, Scotland could enter the wine market and compete with France but that Scottish consumers—and surely Scottish oenophiles—would not necessarily be made better off by the experience.

1 to ensure the entry and survival of suppliers that are *less* efficient than incumbents,
2 consumers typically end up paying for those protections in the form of higher prices or
3 poorer service.

4 **Q. HOW DO THESE PRINCIPLES APPLY TO OSS-RELATED COSTS?**

5 A. Cost causation determines the source of a cost and assesses charges on that source for
6 effecting full cost recovery. If BellSouth develops OSS for its own use, then it alone
7 should properly be responsible for recovering all OSS-related costs. However, if BellSouth
8 has to develop OSS for use by *other* carriers, then those other carriers should be
9 responsible for recovery of the additional OSS-related costs caused directly by them.
10 Any failure to charge those other users of BellSouth's OSS for the additional OSS costs
11 they cause—especially costs to develop OSS—would only generate perverse incentives
12 and encourage inefficient behavior by the users. Specifically, carriers requesting access to
13 BellSouth's OSS would then have an incentive to do so excessively, in terms of both
14 quantity and quality. This incentive could be strong because higher up-front OSS
15 development costs incurred to construct more sophisticated systems can actually lower
16 transactional or OSS use costs. If entrants are not charged for OSS development costs, it
17 would clearly be in their self-interest to insist upon the construction of the most
18 sophisticated OSS-related interfaces and systems imaginable, e.g., those with complex
19 error-processing systems that make human intervention unnecessary. The cost of the
20 ongoing use of OSS in such an environment would be lower than with less sophisticated
21 systems, but the *total* economic cost of the OSS interface or capability could conceivably
22 be higher, leaving society worse off. It does not pay to automate every transaction, and it
23 may not be cost-effective to minimize human intervention. Rather, public policy must
24 recognize the trade-off between OSS development costs and OSS use costs when
25 determining what OSS-using entrants must be responsible for paying. If the cost causation
26 principle is not reflected equally in the prices paid to recover *both* of these types of costs,
27 entrants will demand excessively capital-intensive systems, and costs to
28 telecommunications users will be higher than necessary.

1 **Q. MR. WOOD FURTHER ASSERTS [AT 14] THAT OSS DEVELOPMENT COSTS**
2 **ARISE FROM THE 1996 ACT'S REQUIREMENT THAT LOCAL EXCHANGE**
3 **MARKETS BE OPENED TO COMPETITION AND SHOULD, THEREFORE,**
4 **HAVE TO BE ABSORBED BY INCUMBENT CARRIERS LIKE BELLSOUTH.**
5 **DO YOU AGREE?**

6 A. No. The notion proffered by Mr. Wood that by writing the Act, Congress is causally
7 responsible for OSS development costs is incorrect as a matter of regulatory economics. In
8 telecommunications, regulatory bodies have frequently required regulated firms to
9 undertake costly investments that are subsequently recovered from the customers who use
10 the facilities. For example, when classified as a dominant firm, AT&T was required to
11 maintain sufficient capacity to provide long distance service to any customer in the U.S. at
12 geographically averaged rates. Arguably, some costs would be incurred even if no
13 customer demand materialized. Nonetheless, AT&T's capacity costs were recovered—on
14 a usage basis—in its retail prices charged to its own end-users, not from
15 telecommunications users in general.

16 **Q. DO YOU AGREE WITH MR. WOOD'S BELIEF [AT 15] THAT ANY EFFORT BY**
17 **BELLSOUTH TO IMPROVE ITS OSS WILL EVENTUALLY IMPROVE ITS**
18 **OWN EFFICIENCY AND BENEFIT ITS OWN CUSTOMERS?**

19 A. No, I disagree with Mr. Wood's implication that BellSouth's customers will benefit from
20 OSS development requested by ALECs and that, therefore, the cost of such development
21 ought to be absorbed by BellSouth. First, Mr. Wood ignores the fact that the OSS
22 development costs at issue here pertain *solely* to the interfaces and systems that BellSouth
23 has developed to serve ALECs like ITC^DeltaCom.³⁶ Therefore, Mr. Wood errs in at least
24 three respects. First, he confuses OSS development costs to serve ALECs with those
25 BellSouth incurs to serve its own customers. Second, he ignores cost causation: even if
26 BellSouth's customers were somehow to benefit—which they do not—from BellSouth's

³⁶ Direct testimony of Alphonso J. Varner in this proceeding.

1 development of OSS for ITC^DeltaCom or other ALECs, it would be improper to ignore
2 the basic underlying fact that ITC^DeltaCom and other ALECs remain the cost causers
3 from whom cost should be recovered. Third, benefits are never the economically proper
4 basis for pricing or cost recovery. A price is charged to recover a cost, never to "tax" a
5 benefit.

6 **Q. DO YOU AGREE WITH MR. WOOD'S CONTENTION [AT 16 AND FN. 4] THAT**
7 **MAKING ALECS LIKE ITC^DELTACOM PAY FOR THEIR OWN OSS**
8 **DEVELOPMENT AND USE COSTS AS WELL AS BELLSOUTH'S OSS COSTS**
9 **WOULD CONFER A SUBSTANTIAL COMPETITIVE ADVANTAGE ON**
10 **BELLSOUTH AND DISCOURAGE ANY LOCAL COMPETITION?**

11 A. No. If what Mr. Wood claims were true, then I would agree with his contention. But, as
12 stated above, Mr. Wood fails to distinguish between OSS-related costs (such as for
13 interfaces and related systems) attributable to ALECs like ITC^DeltaCom and BellSouth's
14 own OSS costs. This failure alone invalidates his contention. In addition, Mr. Wood
15 overlooks the fact that the OSS that BellSouth uses to serve its retail customers are already
16 in place. BellSouth does not recover the costs associated with its own OSS by charges to
17 other carriers, as it would—and should—for OSS-related costs caused by those other
18 carriers. Instead, BellSouth recovers its own OSS-related costs through its retail prices,
19 and has been doing so all along.

20 Contrary to Mr. Wood's view, making BellSouth pay for OSS development costs
21 caused by ALECs would not only confer a substantial competitive advantage *on the*
22 *ALECs*, it would encourage ALECs to demand OSS from BellSouth in excessive quality
23 and quantity. As I explained earlier, because of the economic trade-off between OSS
24 development costs and OSS use costs, this would allow ALECs to artificially lower their
25 costs and would encourage entry by relatively inefficient competitors. Thus, society would
26 be worse off under such an arrangement even as the ALECs are able to harness an
27 unjustified private gain for themselves.

28 **Q. SHOULD BELLSOUTH BE MADE TO RECOVER OSS DEVELOPMENT COSTS**

**INCURRED ON BEHALF OF ALECs LIKE ITC^DELTACOM FROM ITS OWN
RETAIL CUSTOMERS?**

A. No. In competitive markets, firms recover costs from the customers who cause the costs. For example, AT&T, MCI and Sprint recover the OSS costs they incur to serve resellers from the recurring and non-recurring prices they charge those resellers, not from their retail customers. Were they to attempt to raise retail prices to subsidize their wholesale customers, they would face two insurmountable problems:

1. a competitive handicap in the retail market because other equally efficient facilities-based carriers could underprice them, and
2. an inefficient margin between the prices of their resold services and of their retail services such that an equally efficient reseller could underprice them.

In any event, this issue is now moot in light of the Commission’s acceptance of the principle that OSS development costs should be recovered from OSS-requesting carriers.

**Q. DO YOU AGREE WITH MR. WOOD’S RECOMMENDATION [AT 18-19] THAT
IN ORDER TO ASSURE ALECs NON-DISCRIMINATORY ACCESS TO OSS,
THE OSS DEVELOPMENT COSTS SHOULD, AT THE VERY LEAST, BE
RECOVERED IN A “COMPETITIVELY NEUTRAL” MANNER FROM ALL
RETAIL CUSTOMERS, REGARDLESS OF THEIR LOCAL SERVICE
PROVIDER?**

A. No. Mr. Wood begins by asserting—correctly, in my opinion—that competitively neutral recovery of OSS development costs occurs when each carrier is held fully responsible for “its own OSS.” Mr. Wood’s assertion, however, is incomplete; I would add that each carrier should be responsible for the OSS costs (both development and use-related) that it causes. Under that principle, cost causation would be respected, and cost recovery would be economically efficient. However, in light of the general tenor of Mr. Wood’s testimony, I interpret his assertion to mean that the OSS development costs incurred by BellSouth to serve ITC^DeltaCom’s needs should be BellSouth’s alone to bear. As I explained earlier, that is an unacceptable conclusion from the standpoint of standard economic theory. Were this Commission to decide that BellSouth’s OSS development costs arising from having to serve ITC^DeltaCom (or other carriers) should not be recovered by BellSouth

1 alone, Mr. Wood asks that those costs be recovered equally from *every* retail customer in
2 the local service market.³⁷ In other words, Mr. Wood recommends the use of a surcharge
3 on *all* local access lines (regardless of which carriers provide them) for recovery of the
4 OSS development costs borne by BellSouth on behalf of ITC^DeltaCom and other carriers.
5 This, too, is unacceptable from the standpoint of economic theory.

6 OSS development costs incurred on behalf of ITC^DeltaCom or other carriers is a
7 fixed cost that must be recovered from the ALECs that caused them. Failure to do so
8 would only create a subsidy for ITC^DeltaCom or other carriers, and the creation of any
9 new subsidy would be bad public policy. The 1996 Act clearly intended to eliminate
10 implicit subsidy flows and to extend competition into the local and long distance markets.
11 Competition that depends on a flow of subsidy to survive in a market is inefficient and not
12 worth having, in the sense that Florida customers would not benefit from such competition
13 in terms of price and service quality.

14 Nonetheless, even if it were (incorrectly) determined that any of the services provided
15 to ALECs should be subsidized, funding that subsidy by a charge proportional to the
16 number of lines served would not be competitively neutral. First, that would assign the
17 bulk of the OSS development costs to BellSouth itself, at least in the early years of local
18 competition when BellSouth would serve the overwhelming majority of local access lines
19 in its service area and when those OSS development costs could be substantial. Second,
20 any assessment on access lines would not be competitively neutral unless all competitors
21 (incumbents and entrants alike) could pass that (per-line) charge through to customers on a
22 flat-rated basis if they so chose. Only such flat-rate recovery would match the recovery of
23 fixed costs and would ensure that all end-users pay the same fixed contribution toward the
24 wholesale subsidy, regardless of the carrier from which they take their local service. Even
25 then, the competitive playing field would not be level because BellSouth's *wholesale* OSS
26 services would still be receiving a subsidy from BellSouth's retail customers, which would
27 give an advantage to those ALECs that use BellSouth's OSS to compete against

³⁷ A similar view is expressed by Mr. Rozycki, on behalf of ITC^DeltaCom, at page 14 of his testimony.

1 BellSouth's retail services.

2 If flat-rate recovery from end-users is also ruled out, then it would be more efficient
3 to assess all carriers in proportion to their OSS *transactions* rather than in proportion to
4 access lines because OSS transactions are more likely to be closely linked to the OSS costs
5 in question. Customers that place no demands on OSS should not—to the extent
6 possible—have to pay for OSS development and use costs.

7 **Q. MR. WOOD WORRIES [AT 10] THAT “EXCESSIVE OR UNNECESSARY NRCs**
8 **INHERENTLY CONSTITUTE BARRIERS TO COMPETITION.” IS HIS**
9 **WORRY JUSTIFIED IN THE CONTEXT OF THE NRCs FILED BY BELLSOUTH**
10 **IN THIS PROCEEDING TO RECOVER OSS-RELATED COSTS?**

11 A. No. While as a general proposition, I would agree with Mr. Wood that any “excessive or
12 unnecessary” charge that raised a competitor’s cost asymmetrically could constitute a
13 barrier to entry, his application of that proposition to the context described is unjustified.
14 NRCs cannot be a barrier to entry as long as two fundamental principles are observed: (1)
15 the true cost causer is assessed the NRCs for the purpose of recovering costs caused
16 directly by it, and (2) NRCs are set, as I discussed earlier, on the basis of a forward-looking
17 pricing methodology. In the current context, NRCs should be assessed to ITC^DeltaCom
18 and other OSS-requesting carriers on the basis of the forward-looking OSS development
19 and use costs caused by those carriers. Those NRCs would, of course, exclude OSS-related
20 costs arising from BellSouth’s own needs for OSS to serve its retail customers.

21 **Q. MR. WOOD TAKES ISSUE [AT 11] WITH BELLSOUTH’S OSS COST STUDY**
22 **BECAUSE IT ALLEGEDLY REFLECTS BELLSOUTH’S “EXISTING**
23 **SYSTEMS,” WHICH, HE CLAIMS, PROVIDES NO INCENTIVE TO**
24 **BELLSOUTH TO SUPPLY OSS CAPABILITIES “EFFICIENTLY AND IN A**
25 **NON-DISCRIMINATORY MANNER.” DO YOU AGREE?**

26 A. No. Mr. Wood appears to be advocating the use of a hypothetical network (one BellSouth
27 is never likely to have or build toward) for the purpose of calculating forward-looking
28 OSS-related costs. This is exactly the standard that the FCC rejected in explaining how

1 total element long run incremental cost (“**TELRIC**”)—the forward-looking cost measure
2 for a **UNE**—should be estimated. First, the **FCC** noted:

3 [f]orward-looking cost methodologies, like **TELRIC**, are intended to consider
4 the costs that a carrier would incur in the future. Thus, a question arises whether
5 costs should be computed based on the least-cost, most efficient network
6 configuration and technology currently available, or whether forward-looking
7 cost should be computed based on incumbent **LECs**’ existing network
8 infrastructures ... The record indicates three general approaches to this issue.
9 Under the first approach, the forward-looking economic cost for ... unbundled
10 elements would be based on the most efficient network architecture, sizing,
11 technology, and operating decisions that are operationally feasible and currently
12 available to the industry.³⁸

13 The **FCC**, however, rejected this standard because:

14 this approach may ... discourage facilities-based competition by new entrants
15 because new entrants can use the incumbent **LEC**’s existing network based on
16 the cost of a hypothetical least-cost, most efficient network.³⁹

17 Instead, the **FCC** adopted a third approach that calculates costs using the most efficient
18 technology *actually deployed* in the incumbent carrier’s current wire centers:⁴⁰

19 prices for ... access to unbundled elements would be developed from a forward-
20 looking economic cost methodology based on the most efficient technology
21 *deployed* in the incumbent **LEC**’s current wire center locations.⁴¹

22 The **FCC** explained its choice of a standard for calculating costs thus:

23 [t]his benchmark of forward-looking cost and existing network design most
24 closely represents the incremental costs that incumbents actually expect to incur
25 in making network elements available to new entrants⁴²

26 This standard is, in fact, close to the economic standard for setting efficient prices. Thus,
27 costs calculated according to the **FCC**’s meaning for **TELRIC** should reflect the costs that

³⁸ Local Competition Order, ¶683.

³⁹ *Id.*

⁴⁰ In ¶684 of the Local Competition Order, the **FCC** considered and rejected embedded costs as another possible measure of cost for a **UNE**.

⁴¹ Local Competition Order, ¶685. Emphasis added.

⁴² *Id.*

1 efficiently-functioning ILECs actually expect to incur on a going forward basis. In
 2 particular, according to the FCC's implementation of TELRIC, costs for OSS should be
 3 based on the technology actually being deployed by BellSouth, not upon technologies that
 4 are—or may become—available but are not deployed. From that standpoint, BellSouth's
 5 cost study rests on an assumption of a forward-looking network configured with
 6 technology actually deployed by BellSouth that is consistent with the FCC's stated
 7 TELRIC methodology. As for Mr. Wood's contention that nothing short of a hypothetical
 8 network configured with technology that BellSouth may never deploy can induce efficient
 9 behavior or produce efficient NRCs, the burden remains on Mr. Wood and ITC^DeltaCom
 10 to demonstrate that such a claim is indeed true. That demonstration must, in addition, pay
 11 heed to the FCC's explicit instructions (discussed above) about what to assume in a
 12 TELRIC-estimation exercise.

13 **Q. AS A GENERAL MATTER, WOULD ACCESS TO OSS PROVIDED BY**
 14 **BELLSOUTH TO ALECs LIKE ITC^DELTACOM BE LESS EXPENSIVE IF**
 15 **BELLSOUTH WERE TO DEPLOY NEW TECHNOLOGY REGARDLESS OF ITS**
 16 **EXISTING NETWORK OR WERE TO BUILD THOSE OSS FROM SCRATCH?**

17 A. Not necessarily. The fact that BellSouth plans to serve ALEC demand with access to its
 18 existing OSS implies that the costs associated with such access are the costs that should be
 19 used to set prices. Moreover, the sum of one-time and transactional costs for a new OSS
 20 built from scratch would far exceed that of adding customized interfaces to the existing
 21 OSS.

22 Of course, whatever method is used to supply OSS functions in the future,
 23 consistency requires that we calculate both OSS development and OSS use costs *using the*
 24 *same method*. Mr. Wood suggests [at 11] calculating OSS use costs in a Total Network
 25 Management-compliant network but ignores the one-time OSS development costs of
 26 constructing that platform. In light of the economic trade-off between OSS development
 27 costs and OSS use costs, there is danger in such selectivity. As I explained earlier, ALECs
 28 and other OSS-requesting carriers exempted from paying for OSS development costs will
 29 then have an incentive to demand gold-plated OSS. In the process, those ALECs could end

1 up minimizing their own OSS use costs, without regard to the excessive OSS development
2 cost burden that would be shifted to BellSouth. Once the OSS development costs are taken
3 into account, the *total* cost of OSS may be greater than it need be and the burden of
4 recovering it would fall disproportionately on BellSouth because of that shifting of costs.

5 **Q. DO YOU BELIEVE THAT BELLSOUTH HAS ANY INCENTIVE TO USE NRCs**
6 **FOR OSS TO RAISE BARRIERS TO ENTRY?**

7 A. No, it would make little or no economic sense for BellSouth to do so. BellSouth
8 Corporation, the Regional Holding Company of which BellSouth is the local
9 telecommunications arm, has a keen economic interest in being able to participate in the
10 interLATA long distance market and to offer competing bundles of local, long distance,
11 and other services to its customers. With long distance and other carriers allowed entry
12 into the local exchange market, the borders between local and other markets are being
13 erased. BellSouth Corporation and other Regional Holding Companies can ill afford to
14 ignore this market and competitive reality. Therefore, BellSouth Corporation must do what
15 is required of it by the law of the land (specifically, Sections 271—particularly, the
16 “competitive checklist”—and 272 of the 1996 Act) to acquire the right to participate in
17 markets from which it is currently barred. As such, a central requirement is that BellSouth
18 provide non-discriminatory access to its network elements (which, according to the FCC,
19 include OSS), databases, and other systems that competitors need to provide
20 telecommunications services. BellSouth must not only provide such access but, once it
21 gains Section 271 approval, must also remain in compliance with the applicable
22 requirements (Section 271(d)(6) of the 1996 Act) in order to keep its authority to offer long
23 distance services. Therefore, any attempt to raise barriers to entry through excessive or
24 unjustified NRCs for OSS would be completely antithetical to BellSouth’s and BellSouth
25 Corporation’s own long-term economic interests. That is why the following statement by
26 Mr. Wood [at 13] and others like it make absolutely no sense at all:

27 ILECs such as BellSouth have tremendous incentives to delay the
28 implementation of such systems and to overstate their costs in order to raise the

1 costs of potential competitors.⁴³

2 In any event, BellSouth should hardly be expected to provide access to its OSS without
3 being able to recover at least the additional cost that is caused by other carriers requesting
4 such access. For reasons explained earlier, not allowing such recovery would be neither
5 competitively neutral nor economically efficient.

6 **IV. PERFORMANCE BENCHMARKS, PARITY, AND PENALTIES**

7 **Q. WHAT HAS ITC^DELTA COM PROPOSED FOR ENSURING COMPLIANCE BY**
8 **BELLSOUTH WITH PERFORMANCE TARGETS EMBODIED IN ITC'S**
9 **INTERCONNECTION AGREEMENT WITH BELLSOUTH?**

10 A. Even though penalties or liquidated damages are not required by the 1996 Act to ensure
11 that an ILEC complies with performance standards, ITC^DeltaCom has proposed a “three-
12 tiered performance guarantee system” that is based on such penalties (Rozycki, at 8-9;
13 ITC^DeltaCom Petition, Exhibit A, Attachment 10). This system identifies a set of 45
14 performance benchmarks, each accompanied by a specific performance guarantee. This set
15 of benchmarks, however, is ITC^DeltaCom’s own compilation.

16 ITC^DeltaCom’s proposed performance guarantee system is supposed to work at
17 three levels. At the first level, failure to meet any of the performance benchmarks would,
18 in many instances, trigger refunds by BellSouth of NRCs charged to ITC^DeltaCom. At
19 the second level, BellSouth’s failure to comply with a single performance benchmark for
20 two consecutive months or twice within a quarter would be declared a “Specified
21 Performance Breach” and trigger a payment by BellSouth *directly to ITC^DeltaCom* of
22 \$25,000 per breach. At the third—and most punitive—level, a “Breach of Contract” would
23 be declared upon BellSouth’s failure to meet any specific performance benchmark five
24 times within a six-month period. The penalty for such a breach would be a payment by
25 BellSouth—*again, directly to ITC^DeltaCom*—of \$100,000 per breach.

⁴³ Paradoxically, Mr. Wood also recognizes that the opposite is true when he states [at 16, fn. 5]: “Thus, the 1996 Act provides a compensating incentive for BellSouth to open its markets to competition, i.e., in-region, inter-LATA entry.”

1 **Q. DO YOU AGREE THAT SUCH A PENALTY-BASED SYSTEM IS NECESSARY**
2 **TO ENSURE BELL SOUTH'S COMPLIANCE AND TO SECURE COMPETITIVE**
3 **PARITY?**

4 A. No. As Mr. Varner's testimony explains, enforcement measures based on penalties or
5 liquidated damages are completely unnecessary and inappropriate. Apart from the fact that
6 legal and other remedies are already available, ITC^DeltaCom's proposed performance
7 guarantee system suffers from an important incentive problem known in economics as
8 *moral hazard*. From the economic standpoint, therefore, ITC^DeltaCom's proposal cannot
9 be justified.

10 **Q. WHAT IS MORAL HAZARD AND WHY DOES IT CREATE AN INCENTIVE**
11 **PROBLEM?**

12 A. Moral hazard is a form of gaming by which one party to a contract may resort to actions—
13 within the framework of the existing contract—that create an unanticipated competitive or
14 financial advantage for that party *at the expense of the other party* to the contract. This
15 type of behavior usually arises when one of two parties to a contract possesses special
16 information that the other does not.⁴⁴ There is then an incentive for the better-informed
17 party to act in ways that raise the risk of default by—or loss to—the other party. Such
18 behavior may be illustrated by the following simple examples:

- 19 1. A homeowner that insures his home against accidental fire damage may actually raise
20 the risk of such damage by failing to take precautions or to maintain the pre-insurance
21 level of vigilance against accidental fires.
- 22 2. A customer that purchases an appliance or automobile under a comprehensive warranty
23 may actually raise the risk of needing repairs by failing to accord the level of care that
24 would have been given without the warranty.

25 **Q. HOW CAN THE MORAL HAZARD PROBLEM BE PREVENTED IN INTER-**
26 **CARRIER RELATIONSHIPS?**

27 A. The total prevention of moral hazard may require an extraordinary level of monitoring and

⁴⁴ For an extensive discussion of moral hazard, see Jean Tirole, *The Theory of Industrial Organization*, Cambridge, MA: The MIT Press, 1993.

1 policing of the private conduct of all parties to a contract. For that reason, it may never be
2 possible to completely eliminate all opportunities for moral hazard-based behavior. It is
3 important, however, that all parties to a contract realize that their private *individual*
4 conduct may have both positive and negative consequences for *all*. This would be
5 particularly true when the contracting parties are engaged in a supplier-customer
6 relationship *within* the contract and as competitors *outside* the contract.

7 **Q. PLEASE EXPLAIN WHY YOU BELIEVE THAT ITC^DELTA COM'S**
8 **PROPOSED PERFORMANCE GUARANTEE SYSTEM CREATES AN**
9 **INCENTIVE FOR MORAL HAZARD LEADING TO AN UNDUE ADVANTAGE**
10 **FOR ITC.**

11 A. Mr. Rozycki attempts to justify [at 10] the penalties involved in the ITC^DeltaCom-
12 proposed performance guarantee system by pointing to (1) BellSouth's size and relative
13 (current) market position and (2) BellSouth's ability to afford penalty payments of the
14 magnitude proposed.

15 There are a number of critical defects in Mr. Rozycki's—and ITC^DeltaCom's—
16 proposal and claims. First, ITC^DeltaCom is unilaterally pushing a set of performance
17 measures that BellSouth may or may not be able to meet and, therefore, may or may not
18 agree to in an explicit interconnection agreement. BellSouth has developed a
19 comprehensive set of service quality measurements ("SQMs") for use in interconnection
20 agreements generally. It is not feasible for BellSouth to design, negotiate, and implement a
21 separate set of SQMs for every ALEC that interconnects with it. With ALECs free to
22 impose their own particular set of performance measures, BellSouth would face the
23 impossible task of trying to meet those varying standards by, in effect, setting performance
24 goals and operating—for purposes of interconnection—like several different carriers.

25 Second, Mr. Rozycki can hardly expect an enthusiastic response from BellSouth
26 when his proposed three-tiered system of performance guarantees is so obviously skewed
27 toward enriching ITC^DeltaCom. Whether or not the *size* of the proposed penalty at each
28 level is appropriate—the reasons provided to justify them appear capricious to begin
29 with—the real sticking point is the *manner* in which ITC^DeltaCom proposes to exercise

1 the proposed penalties. As currently structured, penalties at all three levels would be
2 directly a source of unearned income for ITC^DeltaCom. While the refund of NRCs (at
3 the first level) may still be acceptable if circumstances warrant it because that represents a
4 return of charges already paid by ITC^DeltaCom to BellSouth for services requested,
5 ITC^DeltaCom provides no insight whatsoever into the level of economic "harm" that it
6 might suffer from second and third level breaches. In other words, ITC^DeltaCom makes
7 no attempt to link the size of the penalty at either of those levels to the actual financial loss
8 or damage it would supposedly suffer. Without such an accounting, it is impossible to
9 determine whether ITC^DeltaCom has proposed fair compensation or created a lucrative
10 non-market unearned revenue opportunity for itself.

11 If it is the latter, then the problem of moral hazard is clearly manifest in
12 ITC^DeltaCom's proposal of penalties or liquidated damages. ITC^DeltaCom's proposed
13 performance guarantee lacks symmetry in two ways: it (1) disproportionately favors
14 ITC^DeltaCom and (2) sets up no system of rewards for superior performance to
15 correspond to the proposed consequences for non-compliance. As a result, ITC^DeltaCom
16 would have every incentive to maximize unearned income through this performance
17 guarantee system by creating conditions that cause BellSouth to be in non-compliance.

18 **Q. WHAT ARE THESE CONDITIONS THAT ITC^DELTA COM (OR OTHER**
19 **CARRIERS SEEKING INTERCONNECTION AGREEMENTS WITH**
20 **BELLSOUTH) MAY CREATE AS A RESULT OF MORAL HAZARD?**

- 21 A. The prospect—or promise—of payments unrelated to the actual size of economic loss or
22 damage could trigger moral hazard-based behavior in at least five directions:
- 23 1. *Reward lack of cooperation.* OSS-requesting carriers would have less incentive to
24 report operational problems to BellSouth in a timely manner. By ITC^DeltaCom's
25 proposal, the longer a problem goes uncorrected, the greater the compensation available.
 - 26 2. *Discourage investment by ALEC.* ITC^DeltaCom's proposal, if implemented, would
27 generate several opportunities for unearned income. Such income could discourage
28 ITC^DeltaCom and other OSS-requesting carriers from investing in their own facilities,
29 especially if such investment were to cause those carriers to lose a lucrative source of
30 income.
 - 31 3. *Encourage inefficient entry.* Firms that are inefficient relative to BellSouth may

1 nevertheless see an opportunity to enter the market in the expectation of receiving
2 penalty payments from BellSouth. This would be precisely the same effect as providing
3 a subsidy would have in inducing entry by inefficient firms.

4 4. *Entrapment by ALEC.* OSS-requesting carriers would have an incentive to force
5 BellSouth into situations of non-compliance. For example, by choosing to provision
6 hard-to-serve end-users, presenting service requests that are calculated to cause
7 bottlenecks and delays in BellSouth's response, or basing service requests on
8 deliberately underestimated service requirements (with a subsequent upward revision in
9 those requests that BellSouth could not possibly fulfill quickly), those carriers could
10 increase the risk of BellSouth non-compliance.

11 5. *Gold-plating.* If OSS-requesting carriers were excused from paying OSS development
12 costs, then they would have an additional opportunity to earn income from penalties.
13 Without having to pay OSS development charges, those carriers could demand systems
14 of excessive quantity and/or quality and, in the process, raise the risk of BellSouth non-
15 compliance.

16 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

17 A. Yes.

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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

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M.A., Statistics, 1970

HARVARD COLLEGE
B.A., Economics, 1968
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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.
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