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# RUTLEDGE, ECENIA, PURNELL & HOFFMAN

PROFESSIONAL ASSOCIATION
ATTORNEYS AND COUNSELORS AT LAW


STEPHEN A. ECENIA
JOHN R. ELLIS
KENNETH A. HOFFMAN
THOMAS W. KONRAD
MICHAEL G. MAIDA

POST OFFICE BOX 551, 32302-0551
215 SOUTH MONROE STREET, SUITE 420
TALLAHASSEE, FLORIDA 32301-1841

TELEPHONE (850) 681-6788
TELECOPIER (850) 681-6515

J. STEPHEN MENTON
R. DAVID PRESCOTT
HAROLD F. X. PURNELL
GARY R. RUTLEDGE

GOVERNMENTAL CONSULTANTS
M. LANE STEPHENS


December 1, 2000

Ms. Blanca S. Bayo, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Betty Easley Conference Center, Room 110
Tallahassee, Florida 32399-0850

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Re: Docket No. 000075-TP

Dear Ms. Bayo:

Enclosed herewith for filing in the above-referenced docket on behalf of A&T Communications of the Southern Inc., TCG of South Florida, Global NAPS, Inc., MediaOne Florida Telecommunications, Inc., Time Warner Telecom of Florida, LP, Allegiance Telecom of Florida, Inc., Florida Cable Telecommunications Association, Inc., and the Florida Competitive Carriers Association are the following documents:

1. Original and fifteen copies of the Prefiled Direct Testimony and Exhibits __ (LLS-1 through LLS-3) of Lee L. Selwyn.

Please acknowledge receipt of these documents by stamping the extra copy of this letter "filed" and returning the copy to me.

Thank you for your assistance with this filing.

Sincerely,

Kenneth A. Hoffman

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I HEREBY CERTIFY that a copy of the foregoing was furnished by U. S. Mail to the following this 1st day of December, 2000:

Diana Caldwell, Esq.
Florida Public Service Commission
2540 Shumard Oak Boulevard
Room 370
Tallahassee, Florida 32399-0850

Elizabeth Howland, Esq.
Morton Posner
Allegiance Telecom of Florida, Inc.
1950 Stemmons Freeway, Suite 3026
Dallas, TX 75207-3118

Ms. Nancy B. White
c/o Nancy H. Sims
BellSouth Telecommunications, Inc.
150 South Monroe Street, Suite 400
Tallahassee, Florida 32301-1556

James C. Falvey, Esq.
e.spire Communications, Inc.
133 National Business Parkway
Suite 200
Annapolis Junction, MD 20701

Michael A. Gross, Esq.
Florida Cable Telecommunications, Asso.
310 N. Monroe Street
Tallahassee, FL 32301

Mr. Paul Rebey
Focal Communications Corporation of Florida
200 North LaSalle Street, Suite 1100
Chicago, IL 60601-1914

Global NAPS, Inc.
10 Merrymount Road
Quincy, MA 02169

Scott Sapperstein
Intermedia Communications, Inc.
3625 Queen Palm Drive
Tampa, Florida 33619-1309

Donna Canzano McNulty, Esq.
MCI WorldCom
325 John Knox Road, S uite 105
Tallahassee, FL 32303-4131

Laura L. Gallagher, Esq.
MediaOne Florida Telecommunications, Inc.
101 E. College Avenue, Suite 302
Tallahassee, FL 32301

Norman Horton, Jr., Esq.
Messer Law Firm
215 S. Monroe Street, Suite 701
Tallahassee, FL 32301-1876

Jon Moyle, Esq.
Cathy Sellers, Esq.
The Perkins House
118 North Gadsden Street
Tallahassee, FL 32301

Herb Bornack
Orlando Telephone Company
4558 SW 35th Street, Suite 100
Orlando, FL 32811-6541

Peter Dunbar,Esq.
Karen Camechis, Esq.
P. O. Box 10095
Tallahassee, FL 32302-2095

Charles R. Rehwinkel, Esq.
Susan Masterton, Esq.
Sprint-Florida, Incorporated
Post Office Box 2214
MS: FLTLHO0107
Tallahassee, FL 32316

Mark Buechele
Supra Telecom
1311 Executive Center Drive, Suite 200
Tallahassee, Florida 32301

Kimberly Caswell, Esq.
Verizon Select Services, Inc.
P. O. Box 110, FLTC0007
Tampa, Florida 33601-0110

Charlie Pellegini, Esq.
Patrick K. Wiggins, Esq.
P. O. Drawer 1657
Tallahassee, Florida 32302

Robert Scheffel Wright,Esq.
John T. LaVia, III, Esq.
P. O. Box 271
Tallahassee, FL 32302

Wanda G. Montano, Esq.
US LEC Corporation
Morrocroft III
6801 Morrison Boulevard
Charlotte, NC 28211

Carolyn Marek
Time Warner Telecom of Florida, L.P.
233 Bramerton Court
Franklin, TN 37069

Joseph A. McGlothlin, Esq.
Vicki Gordon Kaufman, Esq.
1117 South Gadsen Street
Tallahassee, FL 32301

Michael R. Romano, Esq.
Level 3 Communications, LLC
1025 Eldorado Boulevard
Broomfield, Colorado 80021

Marsha Rule, Esq.
AT&T
101 North Monroe Street, Suite 700
Tallahassee, FL 32301-1549

By: Kenneth A. Hoffman
KENNETH A. HOFFMAN, ESQ.

ORIGINAL

Before the

**STATE OF FLORIDA**
**PUBLIC SERVICE COMMISSION**

| Re: Investigation into appropriate methods to compensate carriers for exchange of traffic subject to Section 251 of the Telecommunications Act of 1996 | **Docket No. 000075-TP** |
|---|---|

Direct Testimony

of

**LEE L. SELWYN**

on behalf of

AT&T Communications of the Southern States, Inc.
TCG of South Florida
Global NAPS, Inc.
MediaOne Florida Telecommunications, Inc.
Time Warner Telecom of Florida, LP
Allegiance Telecom of Florida, Inc.
Florida Cable Telecommunications Association, Inc.
and the
Florida Competitive Carriers Association

December 1, 2000

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Exhibit ___ (LLS-3): Verizon Online Dial Access Numbers

# INTRODUCTION

**Qualifications**

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

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

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

A. I have been actively involved in the field of public utility economics, policy and regulation for more than thirty years; my overall experience and education are summarized in my Statement of Qualifications, which is provided as Exhibit __ (LLS-1) hereto.

Q. Have you previously testified before the Florida Public Service Commission (the "Commission")?

A. Yes. I have testified before this Commission on a number of occasions dating back to the mid-1970s, on the subjects of rate design and service cost analysis on behalf of business telecommunications users as well as the State of Florida Department of General Services. These cases have included Dockets 74805-TP, 760842-TP, 810035-TP and 820294-TP involving Southern Bell, Docket 74792-TP involving General Telephone Company of Florida, Docket 750320-TP involving Central Telephone Company of Florida. I also testified in Docket 950696-TP on the subject of Universal Service, on behalf of Time Warner AxS and Digital Media Partners. In 1997, I offered testimony in Docket No. 960833-TP/960847-TP on behalf of AT&T Communications of the Southern States, Inc. ("AT&T"), MCI Telecomm and MCI METRO Access. I also have testified before this Commission on certain reciprocal compensation issues on two prior occasions. In November 1999, I testified on behalf of Global NAPS, Inc. ("GlobalNAPS") in a complaint proceeding, Docket 991267-TP. In May 2000, I provided testimony on behalf of Global NAPs in Docket 991220-TP, concerning certain reciprocal compensation issues relating to Global NAPs' interconnection agreement with BellSouth Telecommunications, Inc. ("BellSouth").

**Summary of testimony**

Q. On whose behalf is this testimony being offered?

A. This testimony is offered on behalf of AT&T Communications of the Southern States, Inc., TCG of South Florida, Global NAPS, Inc., MediaOne Florida Telecommunications, Inc., Time Warner Telecom of Florida, LP, Allegiance Telecom of Florida, Inc., Florida Cable Telecommunications Association, Inc. and the Florida Competitive Carriers Association ("FCCA").

Q. What is the purpose of your testimony?

A. My testimony responds to the issues designated for this proceeding[1] by explaining the economic and policy basis for "reciprocal compensation" arrangements between interconnecting local exchange carriers, and more specifically the basis for establishment of the reciprocal compensation payment by an incumbent local exchange carrier ("ILEC") for calls originated by an ILEC's end-user customers that is handed-off to a competitive local exchange carrier ("CLEC") for termination. It explains why such payments are appropriate, and discusses the economic basis for their determination. It

1.For convenience, I have marked each section title in my testimony with the numbers of the relevant issues as they were identified in Order No. PSC-00-2229-PCO-TP issued November 22, 2000. I have not addressed Issue 1 construed as a legal matter; however, as my testimony explains that ISP-bound traffic should be treated the same as any other local traffic for reciprocal compensation purposes, if the Commission has already determined that it has jurisdiction over inter-carrier compensation for non-ISP-bound local traffic, then it may not need to reach Issue 1.

also specifically addresses the application of these principles when the CLEC customer being called is an Internet Service Provider ("ISP").

Q. Please summarize your testimony.

A. The first section of my testimony ("Reciprocal Compensation") explains the existing compensation arrangements applied to traditional telecommunications traffic. One must first take these arrangements into account in order to reach a proper understanding of the financial implications of ISP-bound traffic for ILECs, CLECs, and their customers. My testimony explains that local telephone calls in Florida and elsewhere in the US are nearly always undertaken on a "sent-paid" basis, meaning that the customer who originates the call pays his or her local carrier to get the local call from the point of origin all the way to its intended destination. Most importantly for the purposes of this proceeding, under the "sent-paid" framework, the costs of terminating the call are paid in full by the call originator (to the carrier that originates the call), so that the recipient of the call need not and should not make any additional payments for the termination of that call. When two interconnecting carriers jointly complete a local call, the originating carrier is responsible for remitting a portion of the sent-paid revenue to the carrier that terminates the call. Reciprocal compensation is simply the payments made by the first (originating) carrier to the second (terminating) carrier for its work in completing the call. Despite ILEC

arguments to the contrary, there is no compelling economic or policy basis to deviate from the traditional "sent-paid" framework and reciprocal compensation obligations in the case of ISP-bound traffic. Some ILECs have contended that heavy use of dial-up ISP services has been driving up their average per-line local usage and associated costs but, in fact, ILECs have enjoyed strong growth in residential second lines so that the average volume of local usage per line has not materially increased, although ILEC revenues from additional residential access lines have experienced strong and sustained growth.

The major alternative to the "sent-paid" approach to inter-carrier compensation is the access charge framework applied to interLATA toll calls. Some ILECs and ILEC-sponsored economists have argued that ISPs are functionally equivalent to interexchange carriers, and have urged regulators to allow ILECs to adopt the access charge framework for ISP-bound calls as a substitute for the "sent-paid" framework. However, as the D.C. Circuit Court of Appeals confirmed earlier this year, ISPs are *users* of telecommunications services, and are not telecommunications providers like interexchange carriers, and therefore should not be treated any differently in this respect from other businesses subscribing to telephone services. ILEC arguments that an access charge regime is justified by an analysis of cost-causation for ISP-bound calls are equally without merit. Furthermore, if ILECs were allowed to apply their existing intrastate switched access charges to ISP

traffic, Internet users would be exposed to prohibitive increases in the rates they pay for dial-up connection to ISPs, as much as $7.14 per month in Bell South's Florida service territory.

Under the sent-paid framework, when the exchange of traffic between two carriers is roughly equal, carriers may elect a "bill and keep" system, thereby eliminating the need for explicit inter-carrier payments. However, explicit reciprocal compensation payments must be made for call termination when inter-carrier traffic flows are significantly out of balance, in order to ensure that each carrier is properly compensated for the termination work that it performs.

In Florida and elsewhere, the ILECs' ability to effectively dictate reciprocal compensation rates in their negotiations with CLECs meant that CLECs have faced call termination rates that are significantly higher than they had originally proposed. As I shall explain, this condition is a result of a fundamental misassessment by the ILECs, at the time that the various interconnection agreements were initially negotiated, of the potential impact of the Internet. Because the ILECs elected to impose high termination charges for traffic handed-off *to them* for completion, and because these rates were to apply symmetrically to both the ILEC and the interconnecting CLEC, many CLECs elected to pursue the market for call termination services needed by ISPs and other businesses with high volumes of inbound traffic,

frequently leading to unbalanced one-way traffic flows with interconnecting ILECs. However, under a system of explicit reciprocal compensation payments and as long as the ILEC's rates are based upon the ILEC's costs, there is no logical connection between the traffic flow and associated compensation due in one direction, and the traffic flow and compensation that might occur in the reverse direction. Assuming that ISP-bound calls are subject to reciprocal compensation at all, then in each direction compensation must be paid for the work performed by the terminating carrier and thus the volume of traffic that may or may not flow in the reverse direction is not relevant to the matter of the terminating carrier's entitlement to reciprocal compensation payments for its work in completing calls.

The second section of my testimony ("CLEC Costs of Local Terminations") responds to the argument being made by some ILECs that reciprocal compensation arrangements with CLECs should make a distinction between traffic that is destined for (terminated at) a conventional voice telephone line and traffic that is terminated to an ISP. In fact, *there is no technical difference in the manner by which these two types of traffic are handled in the ILEC's network* and by suggesting otherwise, such ILECs are attempting to introduce a market-driven price discrimination based upon the *use* to which local telephone service is put rather than upon the processes by which it is produced or the costs incurred in its production. My testimony explains why such an attempt to create a distinction between "ordinary" and ISP-bound

traffic is without economic or technical merit and should be rejected by this Commission. In fact, it is a sheer impossibility for ILECs to accurately identify ISP-bound calls even if a discriminatory pricing regime were to be adopted, which of course it should not.

My testimony also describes and compares the architecture and design of ILEC networks vis-a-vis CLEC networks, and explains why a CLEC should be considered to be providing the same traffic aggregation function as occurs via an ILEC's tandem switching, despite the fact that the design of CLECs' local networks differs from that used by ILECs such as BellSouth. Indeed, not only do CLECs confront costs that are no lower than those of an ILEC, it is reasonable to expect that the significant differences in the structure of these networks accounts for differences in both the structure and the level of the ILECs' and the CLECs' respective costs of processing and terminating local calls. In fact, several ILECs previously have submitted studies to the FCC that claim that the concentrated nature of ISP-bound traffic has caused them to incur network investments and costs incremental to their ordinary call termination costs - costs that presumably those CLECs specializing in terminating concentrated inbound traffic must also be incurring.

Finally, I explain that the appropriate inter-carrier compensation for the termination and transport of ISP-bound local calls, as well as other forms of local traffic, is a symmetric rate based upon the ILEC's prevailing TELRIC

cost level, which creates incentives for continual reductions in the costs of call termination services and harms neither ILECs nor end users. These incentives and the positive market developments they engender were expressly recognized by the FCC during its design of the prevailing reciprocal compensation rules for local telecommunications traffic, and similarly should be recognized by the Commission.

## RECIPROCAL COMPENSATION

**A "sent-paid" compensation arrangement has traditionally been applied to local telecommunications traffic, and remains the most rational approach to apply to ISP-bound traffic that is rated as local and subject to local exchange tariff charges. (Issues 2, 3, and 6)**

Q. Dr. Selwyn, what is the traditional practice in Florida and across the US generally for compensating local exchange carriers (LECs) for their carriage of local telephone calls?

A. The almost universal practice in Florida as well as generally throughout the US is for local calls to be provided on a "sent paid" basis by the local exchange carrier on whose network the call originates. By that I mean that the customer who originates the call pays his or her local carrier to get the local call from the point of origin all the way to its intended destination on the public switched telephone network (PSTN), which means that the originating carrier is compensated by its customer for local switching at both the originating and terminating ends of the call as well as for transporting the call the entire distance between the originating LEC switch and the terminating LEC switch. Most importantly in the context of this proceeding, the "sent paid" approach means that the calling party pays in full for the termination of the call, as well as for its origination, even if a carrier other than the originating (and billing) carrier ultimately terminates the call.

Q. Is the "sent paid" approach used in Florida today?

A. Yes, it is. In Florida, both BellSouth and Verizon offer local usage services under a combination of flat and message rate elements, but in all cases the charges for these services are paid by the customer who originates calls. Exhibit __ (LLS-2) to my testimony provides a summary of these two ILECs' basic local exchange offerings in Florida, all of which are founded on the "sent-paid" model.

Q. Most residential and business exchange service in Florida is provided on a "flat-rate" basis. Does the "sent-paid" model still apply even where there is no explicit charge for each originated local call?

A. Yes. As Exhibit __ (LLS-2) to my testimony illustrates, "sent paid" payment arrangements can take many forms. Among its possible forms are: flat-rated local calling over a wide area; "extended area service" or "extended area calling" plans that have the same effect; flat-rated local calling over a smaller area with some type of message unit or local measured charge for local calls outside that area; flat-rated local calling for a certain number of calls per month, with a per-message or other charge for usage above that level; and even local service with no usage included in the base price at all, with each call subject to a separate local message unit or measured service charge. Whatever the specific method of charging, the originating customer pays either for each individual call (if billed on a measured-rate basis) or for the

"package" of local usage (if billed on a "flat-rate" basis). Just because calls may be billed on a flat-rate basis does not in any sense make them "free" to the originating caller or create a condition whereby the originating LEC is not fully compensated (through the flat monthly charge) for the costs in incurs in handling these calls.

In sum, whatever the precise form of local service plan, and whether priced on a flat-rate or usage-sensitive basis, what is common to all of them is that the *originating end user* pays the *originating local carrier* an amount designed to cover the entire cost of getting the call from the origin to its destination.

Q. Is this "sent paid" approach to local calling a recent development, or has it been in place for some time?

A. This arrangement has been in place since the introduction of local telephone service more than a century ago, and has provided the framework both for the interchange of traffic as well as for the allocation of usage revenues as between two incumbent local exchange carriers (e.g., BellSouth and an Independent Telephone Company). With the introduction of Competitive Local Carriers ("CLECs") into the local service market, this same longstanding framework has now been extended to the new entrants as well.

Q. How are connecting carriers compensated, under the "sent paid" paradigm, for terminating calls that are originated by customers of a different local carrier?

A. When two interconnecting carriers (A and B) jointly participate in the completion of a local call, the originating carrier is responsible for paying the carrier that terminates the call. Carrier A is paid by its customer to complete a "full call," but performs a "half-call" itself (from origination to hand-off point), and thus must pay Carrier B to perform the second "half-call" (from hand-off point to termination).

Reciprocal compensation is simply the payments made by the first (originating) carrier to the second (terminating) carrier for its work in completing the call. In this arrangement, the flow of payments is intended to mirror the flow of traffic; i.e., Carrier A pays Carrier B for terminating calls originated on A and handed off to B for termination, and Carrier B pays Carrier A for terminating calls originated on B and handed off to A for termination. The per-minute amount for these payments is supposed to be equal, such that if the traffic flow is precisely in balance (i.e., A gives B the same amount of traffic as B gives A), then no net payment, in either direction, would take place. Specific compensation mechanisms, including explicit reciprocal compensation payments and bill-and-keep arrangements, are discussed further below.

Q. Is this type of inter-carrier compensation arrangement peculiar to the telecommunications industry?

A. No, in fact it has long been both the tradition and the practice throughout common carrier industries like transportation and telecommunications for certain types of customer-initiated service requests to be fulfilled by more than one service provider. Rail shipments frequently involve several different railroad companies; indeed, it is not at all uncommon for one railroad's rolling stock to be transported over another railroad's tracks where the ultimate destination of a particular shipment goes beyond the geographic extent of the originating railroad's network. In some cases, multiple carriers may be involved even where it is possible for the entire service to be furnished by one provider. For example, a passenger might want to travel from Tallahassee to Boston. Although this trip could be completed on the same airline, the passenger might want to change airlines at some interconnecting point in order to obtain preferred flight times or simply because he or she needs to stop off at that location. Where two or more carriers are involved in a particular routing, the customer typically deals only with the first carrier in effecting the service transaction (i.e., arranging and paying for the freight shipment or making flight reservations and paying for the ticket for the entire trip). In this context, that first carrier acts as an agent for all subsequent carriers, and hands over a portion of the total payment received for the entire service to the subsequent (connecting) carrier(s) in

some proportion to each's respective role in fulfilling the totality of the service delivery. This payment is not a "cost" to the initial carrier; rather, it is simply a remittance paid by it to one or more other carriers for their share of the total service that is being furnished to the customer.[2]

Reciprocal compensation payments made by originating LECs to terminating LECs are entirely analogous. They are not "costs" to the originating carrier in the traditional sense, although one might argue that they represent competitive losses in that the originating ILEC might have in the past carried the entire call if the CLEC were not present in the market. However, the payment made by the ILEC to the CLEC for traffic handed-off to the CLEC is simply a remittance of monies collected from the ILECs customer for a total end-to-end service a portion of which is furnished by a connecting carrier rather than by the ILEC itself.

Q. Some ILECs have contended that they are not adequately compensated for the additional usage costs they incur due to ISP-bound traffic, and thus need to reduce or entirely eliminate their reciprocal compensation remittances to CLECs for termination of ISP-bound calls. How do you respond to that claim?

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2.The initial carrier might incur transaction costs relating to its role in facilitating the end-to-end service, e.g. in performing billing and collection functions for the connecting carriers. However, any such costs are conceptually distinct from (and typically minimal in comparison to) the revenues that ultimately must flow to the connecting carriers as compensation fro their services.

A. Under the "sent-paid" compensation framework, to the extent that an ILEC incurs additional network usage costs because of local dial-up calls to ISPs, those costs are to be recovered from the originating customer through that customer's payments under the originating carrier's local exchange tariffs. If for some reason an ILEC is unable to obtain sufficient local service revenues from its end user subscribers to cover the usage costs associated with that customer's dial-up ISP calls, the ILEC's recourse is to adjust its local exchange rate structure, rather than to attempt to escape its reciprocal compensation obligations to CLECs which terminate those calls.

Q. Some ILECs have argued that the total local usage per residential access line has increased significantly over time because of the growth of ISP-bound calls, so that the average local usage level recovered through the ILECs' flat-rate tariffs is being exceeded. Do you agree with that contention?

A. No, in fact, there is evidence that no such effect has occurred as a general matter. Data routinely collected by the FCC and published in its annual Statistics of Communications Common Carriers demonstrate that the Internet has had a significant impact upon the demand for additional residential access lines, but has had little impact upon the average volume of local traffic carried over each line. As shown in Figure 1, beginning in about 1990 the demand for additional residential access lines began to mushroom, and by the end of 1998 — the latest year for which FCC data is available — over

one-fifth of all US households had an additional residence line, representing some 20.4-million such lines nationwide. During that same period, the per-line volume of local calling increased by only 19% (Figure 2). ILECs such as BellSouth and Verizon realize substantial additional revenues from the sale of additional residential access lines and to the extent that CLECs participate in the carriage of traffic generated over those lines, it is both appropriate and essential that CLECs be compensated for the services they supply.

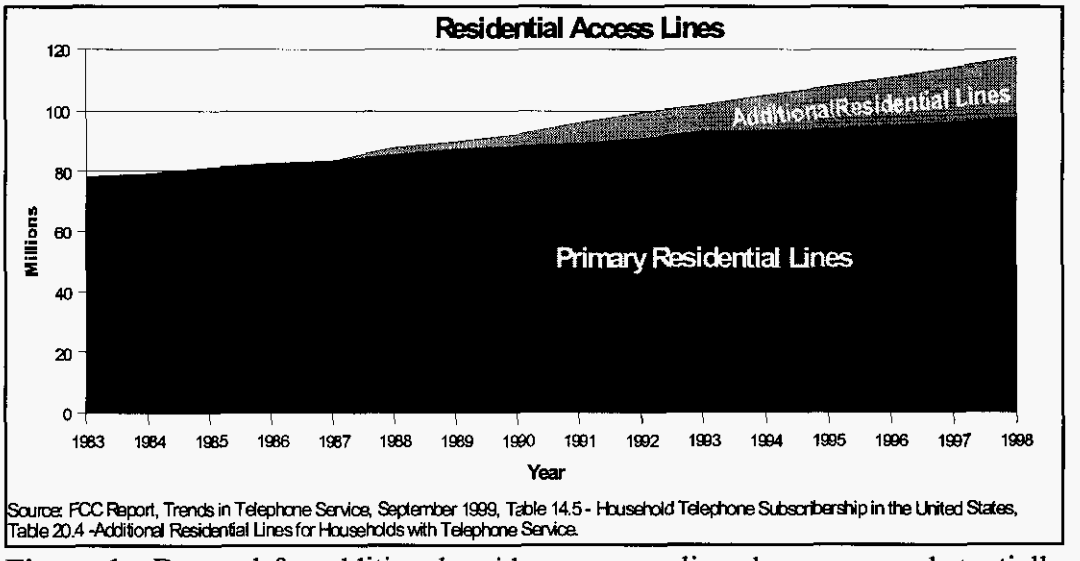


**Figure 1.** Demand for additional residence access lines has grown substantially over the past decade.

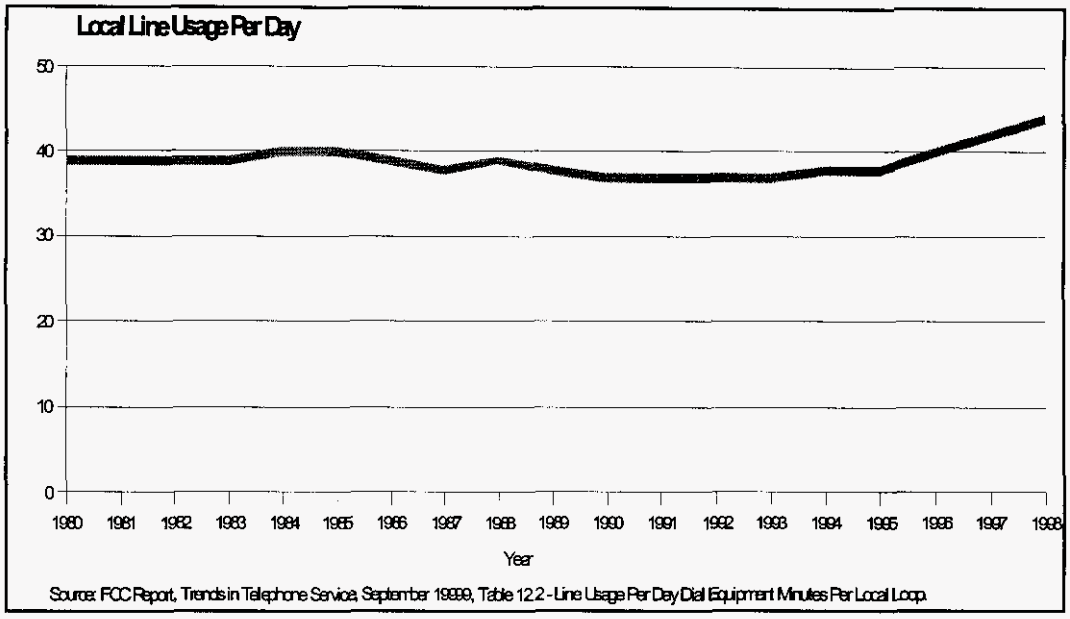


**Figure 2.** Local usage per line has risen modestly overall, despite the growth in Internet-related calling.

**Because ISPs are end users of telecommunications services and are not telecommunications service providers, the compensation arrangements applied to interexchange carriers (IXCs) should not be applied to ISPs. (Issues 3 and 4)**

Q. It has been suggested by some ILECs that the most efficient economic arrangement would be for ISPs to pay to receive incoming calls and recover those costs from their Internet users. Is that an appropriate arrangement?

A. No, it is not. As I have previously discussed, local calls are in all cases sent-paid by the call originator. Calls to ISPs are rated as local calls (if the called number is included within the caller's local calling plan). If ISPs were to be charged for receiving incoming calls, the effect would be a *double*

*charge*, because the call originator would have already paid for the call termination.

Q. Don't interexchange carriers (IXCs) pay for calls delivered to them by ILECs?

A. Yes, they do, but the "access charge" model that applies in the case of IXCs is not appropriate nor applicable in the case of ISPs.

Q. Please explain.

A. Under the access charge model, the customer of the ILEC is the IXC, not the originator of a long distance call. That is, when I place a call via an IXC, the call is routed from my phone to the IXC by the ILEC as a "switched access" service, and the charge for that switched access service is billed to the IXC. Indeed, the IXC will be charged for the switched access connection even if the ultimate call is not completed, i.e., if it reaches a busy or no-answer condition. The IXC also pays switched access to the ILEC at the terminating end of the call, for transporting and delivering the call from the IXC's "point of presence" ("POP") to the ultimate recipient of the call. Neither the call originator nor the call recipient are billed by their respective ILECs for the switched access service.

The IXC, however, is billed for this service, and recovers those payments, along with its other costs (e.g., the cost of transporting the call between LATAs, retailing costs associated with marketing, billing and collection, etc.) in retail long distance rates that it charges to its end-user customer.

Q. Are there other differences between the "sent-paid" regime applicable to local calls and the "access charge" regime applicable to long distance (toll) calls?

A. Yes. Since their introduction in approximately 1984, access charges have been set substantially in excess of the traffic-sensitive costs actually associated with this service so as to make a "contribution" toward the cost of the basic subscriber access line, *replacing* the contribution that had previously be made by toll calls prior to the creation of access charges. By contrast, reciprocal compensation rates for termination of local calls are required by Section 252(d)(2)(A)(ii) of the federal *Telecommunications Act of 1996* to be set at *incremental* cost. While the physical functions are similar, the rate level applicable to access charges is substantially greater than that for termination of local traffic. Were access charges to apply in the case of ISP-bound local calls, rates for such calls would necessarily have to experience a substantial increase, dramatically raising the cost to Internet users of reaching their chosen ISP.

Q. Why isn't the access charge model applicable to or appropriate for calls delivered by ILECs to ISPs?

A. There are several reasons. First, the FCC has expressly *exempted* such calling from interstate switched access charges, requiring that calls to ISPs be treated and rated as local calls and that access line services furnished to ISPs be provided as local business exchange service lines out of the local exchange tariff.[3] Second, while I am not an attorney and do not offer a legal opinion, in my view ISPs, unlike IXCs, are distinctly not telecommunications common carriers as defined under current law. Rather, ISPs are themselves end-user customers of telecommunications carriers, and thus are entitled to exactly the same treatment as any other end-user customer. Indeed, in a March 24, 2000 ruling reversing in part the FCC's February 1999 *Reciprocal Compensation* order,[4] the District of Columbia Circuit Court of Appeals saw no particular reason why ISPs were any different from any other telecommunications intensive end user:

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3.See *MTS and WATS Market Structure*, Memorandum Opinion and Order, Docket No. 78-72, 97 FCC 2d 682, 711-22 (1983) (Access Charge Reconsideration Order); *Amendments of Part 69 of the Commission's Rules Relating to Enhanced Services Providers*, CC Docket No. 87-215, Order, 3 FCC Rcd 2631 (1988) (ESP Exemption Order); *Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, and End User Common Line Charges*, CC Docket No. 96-262, 94-1 et al, First Report and Order, 12 FCC Rcd 15982 (1997) at paras. 341-348.

4.*Bell Atlantic Telephone Companies v. FCC and U.S.*, 2000 WL 273383 (D.C. Cir. March 24, 2000).

> Even if the difference between ISPs and traditional long-distance carriers is irrelevant for jurisdictional purposes, it appears relevant for purposes of reciprocal compensation. Although ISPs use telecommunications to provide information service, they are not themselves telecommunications providers (as are long-distance carriers).
>
> In this regard an ISP appears, as MCI WorldCom argued, no different from many businesses, such as "pizza delivery firms, travel reservation agencies, credit card verification firms, or taxicab companies," which use a variety of communication services to provide their goods or services to their customers. Comments of WorldCom, Inc. at 7 (July 17, 1997). Of course, the ISP's origination of telecommunications as a result of the user's call is instantaneous (although perhaps no more so than a credit card verification system or a bank account information service). But this does not imply that the original communication does not "terminate" at the ISP. The Commission has not satisfactorily explained why an ISP is not, for purposes of reciprocal compensation, "simply a communications-intensive business end user selling a product to other consumer and business end-users."[5]

Indeed, were ISPs to be singled out among all business telephone users for special treatment, the effect would be to discriminate based upon the *content of the individual telephone calls* themselves, a move without any precedent of which I am aware. Finally, I would note that the FCC itself, in an April 1998 report to Congress regarding the application of universal service assessments against ISPs, expressly concluded that ISPs are users of telecommunications, not telecommunications carriers, and that Congress intended the terms "information services" (that is, what ISPs provide) and "telecommunications

5.*Id.*, at *6.

services" (that is, what carriers such as IXCs provide) to be mutually exclusive.[6] Indeed, the D.C. Circuit noted that conclusion in its discussion of the proper classification of ISPs and ISP-bound calls noted above.

Q. What would be the effect upon Internet users if ISPs were required to pay for the incoming calls they receive?

A. Most ISPs today employ a flat-rate type of pricing plan whereby users pay a fixed monthly charge for unlimited access to the Internet. According to industry statistics, the average dial-up Internet user spends approximately 25 hours per month on the Internet. As shown in Table 1, if BellSouth's current intrastate switched access charges in Florida were to apply for each of these 1500 minutes per month, assuming an average call duration of 30 minutes, the ISP would be required to pay some $7.14 for each customer to receive calls for which those customers had already paid in their local telephone service rate. Obviously, ISPs would be forced to flow-through these additional costs to their Internet user customers, effectively increasing the cost of Internet access from the roughly $20 per month that typically applies today to as much as $27 per month. Moreover, once faced with usage-based call termination charges, the ISPs may find it far more difficult to offer flat-rate Internet access, and would be forced to adopt measured-use pricing, something that would fundamentally alter the manner in which the Internet is

6.*Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report to Congress, 13 FCC Rcd 11501, 11536-11540 (1998).

used.

| Table 1<br><br>Calculation of Potential Impact on Internet Users<br>of Application of BellSouth Florida's Intrastate Switched Access Charges<br>to ISP-bound calls | | |
|---|---|---|
| Average monthly connect time of Internet user, hours | | 25 |
| Average duration of Internet calls, minutes | | 30 |
| Total minutes per month: | | 1500 |
| BellSouth-Florida's Intrastate SWAC:<br>Source: BellSouth-Florida Access Services Tariff, Section E.6<br>(BellSouth SWA Service) | | |
| Local Switching LS2 (Feature Groups C and D): | | |
| Per access minute | $ | 0.001901 |
| Tandem switching, per access minute: | $ | 0.00050 |
| Tandem switched transport, per access minute: | | |
| Facilities Termination (fixed charge) per access minute of use: | $ | 0.00036 |
| Per Mile per access minute of use: | $ | 0.00004 |
| Assumed transport mileage | | 50 |
| Total monthly charges if SWAC applied to ISP-bound traffic terminated by CLEC: | | |
| LS2 charges | $ | 2.85 |
| Tandem switching charges | $ | 0.75 |
| Tandem transport charges | $ | 3.54 |
| Total monthly charges: | $ | 7.14 |
| Note: This assumes that call is handed off to a CLEC for termination, so it includes (only) originating local switching, plus transport and tandem swithcing elements. | | |

Q. Some ILECs have contended that ISPs provide an interexchange function in terminating calls to the Internet, and that therefore the toll model is the most

appropriate compensation arrangement from an economic standpoint. Do ISPs provide an interexchange function?

A. No. As the DC Circuit Court of Appeals recognized, ISPs do not provide a telecommunications service, and in particular do not provide an interexchange carrier function either. When a customer dials an ISP, the call is delivered to the location where the ISP maintains a bank of devices called "Remote Access Servers," or RAS's. These devices include both modems and basic authentication capability (that is, matching the dial-up caller's user name and password to ensure that the caller may properly access the ISPs' services). The RAS's are connected to the ISP's own host computers and routers that provide the gateway to the larger Internet itself. If the ISP is served by the same carrier as the caller (e.g., BellSouth), then the call is processed entirely on that ILEC's network; if the ISP uses a different carrier (e.g., a CLEC), then the call is handed-off by the ILEC to the CLEC at their agreed-upon "point of interconnection." In either case, the call itself is physically "terminated" at the point at which the terminating carrier — ILEC or CLEC — switches the call on its way to the ISP's CPE (in this case, the RAS/modem). This is no different than how call termination works for any other customer.

This shows that there is no merit to the ILEC suggestion that an end user's call to an ISP does not really "terminate" with the ISP, but instead in some

mystical sense "continues" on into the Internet. Customer-originated data no doubt are processed and forwarded by the ISP to web sites hosted on physically distant computers, but that activity entails the ISP performing its information services, not a telecommunications carrier performing any telecommunications functions. Put bluntly, however one might fairly characterize what it is that "continues" on into the Internet, it is certainly not the end user's "call." That call "terminates" (in the sense of the FCC's rules) at the end office switch serving the ISP, and "terminates" (in a more colloquial sense) at the ISP's CPE (again, the RAS/modem combination).

Consider the following as a simplified example. I dial a local number to reach an airline reservation desk. I talk to the reservationist and describe the trip that I want to take. The reservationist then punches some keys on a computer terminal or work station and looks at her screen to see if the flights I want are available. She then tells me what she sees on the screen. Technically, the reservationist is performing what amounts to modem functions. She translates my voice instructions into keystrokes for entry into the computer, and translates the screen display into spoken words that are communicated to me over the phone. Under the so-called "one call" theory (which holds that ISPs are performing an interexchange function because the call actually terminates on the remote web site rather than at the local ISP's modem bank), this call to the airline reservation desk would be no different than a call to the Internet. In fact, under this theory, a call to any business

that uses out-of-state information sources in telephonic transactions with its customers would also satisfy this same "one call" theory. The sole difference between these examples and the Internet is that Internet calls involve data whereas these others involve voice communication. Since the public switched telephone network (PSTN) is entirely indifferent as to whether it is carrying voice or data traffic (i.e., there is no difference in the manner in which the call is handled or in its cost), there is no basis for any price discrimination on the basis of the content of an individual call, i.e., voice vs. data.

ISP-bound dial-up calls terminate at the ISP's modem, not at Internet websites; in fact, as Mr. Fred Goldstein explained in his testimony on behalf of Global NAPs in Docket 991267-TP, more than 90% of the time that an Internet user is connected to his or her ISP, there is not even any data flow beyond the ISP actually taking place. Hence, even under a "one call" theory, the call would still be terminated at the ISP's modem bank in excess of 90% of the total time that the call is "up." As the DC Court of Appeals recognized in its March ruling to remand the FCC's Declaratory Ruling on ISP-bound traffic, ISPs are users of telecommunications services, similar to other businesses that utilize inbound calling services, such as call answering bureaus, mail-order shopping services, and other telecommunications-intensive business enterprises.

Q. ILECs have argued that the ISP, not the end user, is the "cost-causer" in the case of ISP-bound calls. Do you agree?

A. No. Under that theory, any business that advertises its telephone number encouraging prospective customers to call would be considered to have "caused" the incoming call to be placed. The originating caller is the cost-causer because the originating caller is exercising free will in deciding to place the call. The ISP is offering Internet access service, and is providing that service via dial-up telephone calls placed to it by its customers. That is no different than any other business that engages in transactions or provides services over the phone.

The exception to this is found in the case of 800-type services, where the called party has explicitly decided that it will pay for the cost of the calls it receives. However, 800 service is an option that is selected by a particular firm to encourage calls that might not otherwise take place if the charge were imposed upon the caller.

**Under the sent-paid framework, explicit reciprocal compensation payments must be made for call termination when traffic flows are significantly out of balance. (Issues 3 and 4)**

Q. ILECs typically portray their reciprocal compensation payments to CLECs for the termination of ISP-bound traffic originated by ILEC end users as

"costs" that are being imposed by CLECs upon ILECs. Do you agree with that characterization?

A. No, I don't. As I explained, reciprocal compensation payments represent "remittances" that are collected by the carrier whose customer originates the call and that are then paid to the carrier that terminates the call. A far more accurate characterization of reciprocal compensation payments is that of a "competitive loss" to the originating carrier to the extent that carrier could have itself furnished the call termination, but did not because the call recipient had selected an alternative service provider.

Q. Should the ILEC be insulated from such competitive losses?

A. Clearly not. The loss of call termination business constitutes a competitive loss to the incumbent. However, a careful examination of the circumstances associated with this particular competitive loss will reveal that it resulted from mis-assessments of the market and mispricing of services by the incumbents, and is certainly not the "fault" of CLECs who made entirely legitimate market responses to the pricing signals that they were receiving from BellSouth and Verizon.

Q. Please explain.

A. Call origination and call termination are separable activities each one of which confronts its own set of market conditions. There is nothing in the 1996 federal *Telecommunications Act* nor in any other competitive telecom policy framework of which I am aware that requires that CLECs become mere clones of the incumbents, that the nature and mix of the services they provide mirror precisely those being offered by the ILECs. Indeed, unless CLECs were somehow compelled to purchase and deploy the same technologies that the ILECs use, one would expect the different cost and other characteristics of the (generally newer) technology being deployed by the CLECs to lead them to focus on those portions of the overall market that their new technology allows them to serve most efficiently. As a result, it would be remarkable if CLECs ever adopted a competitive strategy of simply cloning the ILEC's operations.

The relevant distinction here is between call origination and call termination. In a competitive local telecom market, carriers can compete for call termination business without having to necessarily compete for the corresponding call origination business. If a CLEC is able to furnish the call termination service more efficiently than the ILEC, the goals of competition are served when customers requiring this service are induced to switch from the ILEC to a CLEC.

Under a system of explicit reciprocal compensation payments and as long as the ILEC's rates are based upon the ILEC's costs, there is no logical connection between the traffic flow and associated compensation due in one direction, and the traffic flow and compensation that might occur in the reverse direction. Assuming that ISP-bound calls are subject to reciprocal compensation at all (which is taken up below), then in each direction, compensation must be paid for the work performed by the terminating carrier. As a result, the volume of traffic that may or may not flow in the reverse direction is not relevant to the matter of the terminating carrier's entitlement to reciprocal compensation payments for its work in completing calls.

Q. Has BellSouth itself supported the application of explicit reciprocal compensation payments for termination of local traffic in the past?

A. Yes. BellSouth's various interconnection agreements with CLECs have typically provided for reciprocal compensation. Moreover, it is my understanding that BellSouth continues to apply reciprocal compensation principles in dealings with CLECs that are providing POTS-type services (i.e., "plain old telephone service") as distinct from those CLECs that are specializing in terminating ISP-bound traffic.

Q. Has BellSouth generally opposed "bill-and-keep" arrangements in favor of reciprocal compensation payments based upon actual traffic flows in each direction?

A. Yes, that is my understanding. In opposing "bill-and-keep," BellSouth and other ILECs apparently believed that they would be net recipients of interchanged traffic, i.e., that there would be more traffic flowing from CLECs to ILECs than from ILECs to CLECs. That determination was a business judgment that appears to have been wrong. In assessing the market outcome, BellSouth appears to have failed to recognize the fact that (a) call origination and call termination are different services, and that (b) CLECs could be selective in the mix of customers they elected to pursue and to serve. When CLECs faced much higher reciprocal compensation rates than the CLECs themselves proposed in negotiations, they elected to "sell" rather than to "buy" at that price, and solicited customers — including ISPs as well as others — with relatively high inward calling requirements. Thus, ILECs such as BellSouth lost the opportunity to serve these high-volume call termination customers by mispricing their services, and it would be entirely inappropriate for the Commission to now engage in what amounts to nothing short of a bail-out of those ILEC business errors. *In competitive markets, competitors live or die by their own business judgments and decisions, and it is not the role of regulators to backstop these market choices by after-the-fact protective measures.*

Q. Was there anything unreasonable or inappropriate about this deliberate attempt on the part of some CLECs to seek out particular types of customers with unusually high inward calling needs and thereby to become net recipients of terminating traffic?

A. No, not at all. In fact, this outcome is fully consistent with the proper functioning of a competitive market. In this instance, the ILEC, as the dominant player in the market, established and held out a price at which it was willing to either buy or sell call termination service. If a competitor was able to furnish the same service at a lower cost than the price signals it was receiving from the dominant ILEC, both the CLEC and the economy overall are well served by the CLEC pursuing this market opportunity.

In dictating the reciprocal compensation rate, the ILEC was engaging in a form of economic negotiation sometimes described as "I cut, you choose/you cut, I choose." Suppose that Bob and Bill are trying to evenly divide a chocolate cake between them. Under "I cut, you choose," Bob, for example, would cut the cake into what he believed were two equal pieces, and Bill would then have the right to select which piece he would get. Obviously, in such a process, Bob has a powerful incentive to make his slice as close to a 50/50 split as possible since, if the two pieces are unequal, Bill will then have the right to select the larger piece. Note also that under this type of negotiation arrangement, it doesn't actually matter which party does the

slicing and which does the choosing, since both would share the identical incentive no matter which role each assumes.

The establishment of a symmetric reciprocal compensation rate by the ILEC that the CLEC is then free to either pay to the ILEC or have the ILEC pay to it should provide the ILEC with precisely the same incentive to "get it right" as Bob has in slicing the chocolate cake. So it is therefore entirely reasonable and correct to assume that in setting their existing reciprocal compensation rates, BellSouth and Verizon attempted to get as close to their actual costs as possible, since the risk of being wrong (too high or too low) would necessarily cost these companies money. In fact, BellSouth and Verizon would have deliberately set their price in excess of cost only if they believed that CLECs would be *unable* to achieve a net traffic flow in their favor. That error would be in the nature of a bad business judgment which, like other management decisions, firms must live with in competitive market environments. Of course, in the instant situation, it would appear that both BellSouth and Verizon engaged in precisely this market behavior, mistakenly believing that CLECs could not be so selective as to focus their initial marketing efforts upon customers with high-volume inward calling requirements.

Q. But what if the ILECs had deliberately overstated their costs and thereby quoted excessive prices for call terminations?

A. In setting their call termination reciprocal compensation rates, the ILECs were well aware that the price would apply in both directions, and therefore should have had the incentive to set a price level that was at or very close to the actual costs involved in providing call termination functions. But if, for example, BellSouth or Verizon had deliberately established an excessive price, that action would necessarily have been driven by an erroneous business judgment as to competitors' ability to be selective in seeking out and serving customers with high inward calling needs. In competitive markets, there are often serious consequences of mispricing one's product or service, and competitors are certainly entitled to take full advantage of the conditions they confront in developing their business strategies and in defining the market segments that they will serve.

In the instant situation, however, the specific reciprocal compensation rates that had been dictated by the ILECs were proffered as being cost-based; indeed, they were required by law and by regulation to be cost-based. Section 252(d)(2) of the *Telecommunications Act of 1996* sets forth the specific relationship between the reciprocal compensation rate and the underlying costs of terminating calls:

> Section 252(d)(2) CHARGES FOR TRANSPORT AND TERMINATION OF TRAFFIC-

> (A) IN GENERAL- For the purposes of compliance by an incumbent local exchange carrier with section 251(b)(5), a State commission shall not consider the terms and conditions for reciprocal compensation to be just and reasonable unless-
>
> (i) such terms and conditions provide for the mutual and reciprocal recovery by each carrier of costs associated with the transport and termination on each carrier's network facilities of calls that originate on the network facilities of the other carrier; and
>
> (ii) such terms and conditions determine such costs on the basis of a reasonable approximation of the additional costs of terminating such calls.

It was thus entirely reasonable and appropriate, then, for regulators and for competitors to rely upon BellSouth's and Verizon's respective representations with respect to their costs for terminating local traffic. When ILECs attempt to introduce "new" cost studies in support of a changed agenda that produce dramatically different results than those proffered by the very same companies a few years ago, the new results must necessarily be viewed with extreme skepticism.

Even worse, some ILECs are now attempting to manufacture a distinction between traffic that CLECs hand off to them and traffic that they hand off to CLECs, and based thereon to establish differential prices whose effect is to eliminate the existing symmetry in the treatment of reciprocal compensation. Specifically, ILECs are seeking to differentiate between the cost associated with traffic that CLECs terminate to them and the cost associated with traffic that they terminate to CLECs. Not surprisingly, the ILECs' new "cost

studies" produce dramatically higher values for the former than for the latter. Both of these results purport to be based upon these companies' own costs, but in fact as I explain elsewhere in my testimony, there is substantial reason to expect that, all else being equal, CLEC costs may actually be higher than an ILEC's costs for providing the equivalent call termination service.

**Under an explicit reciprocal compensation regime, the appropriate compensation for calls terminated by one of two interconnected carriers is entirely independent from the volume of traffic and associated compensation flowing in the reverse direction. (Issues 3 and 4)**

Q. ILECs often portray situations in which traffic flows are significantly out of balance as somehow inconsistent with the intent of opening local markets to competition, and argue that CLECs with heavily-lopsided inbound traffic are somehow taking advantage of a "loophole" in the ILEC's tariff. Do you agree with such contentions?

A. No. As I have noted above, in a competitive local telecom market, carriers can compete for call termination business and, if one carrier is able to furnish the call termination service more efficiently than the ILEC, the goals of competition are served when customers are induced to switch from the ILEC to a CLEC for this service.

Under a system of explicit reciprocal compensation payments and as long as the ILEC's rates are based upon the ILEC's costs, there is no logical

connection between the traffic flow and associated compensation due in one direction, and the traffic flow and compensation that might occur in the reverse direction. In fact, if the symmetric reciprocal compensation rate is set at the ILEC's cost, then only those CLECs that are able to provide call termination services more efficiently than the ILEC will elect to engage is this particular market segment. On the other hand, inasmuch as the *Telecommunications Act* and resulting FCC regulations required that the reciprocal compensation rate be set at the ILEC's cost, CLECs acted reasonably in assuming that the rate confronting them in their respective interconnection agreements did in fact represent the ILEC's cost. If the CLEC found that it was able to furnish high-volume call termination services at a lower cost, then it acted legitimately in making the necessary investment in switching and related equipment and in developing a business plan premised on the reciprocal compensation price that was dictated to it by the ILEC. The volume of traffic that may or may not flow in the reverse direction - i.e., from the CLEC to the ILEC, is irrelevant.

In this regard, it is important not to confuse what CLECs have done under the initial pricing conditions established by the ILECs with long-term CLEC behavior and incentives. As noted above, ILECs originally represented that their call termination costs were relatively high; now they are claiming that their call termination costs are relatively low. The law provides that state regulators such as the Florida PSC will, ultimately, have the final say. But

once a rate is set, CLECs will assess for themselves whether the technology available to them on the market makes it easier for them to compete for call origination business, call termination business, or some mix. So if one believes that the initial call termination rates established by the ILECs were too high (based upon the ILECs' own costs), then the solution to the "problem" of CLECs focusing upon call termination functions is not to ban payment for those functions but, rather, to allow the normal process to work to bring the call termination rates down to an appropriate level. As noted above, however, because CLECs will be deploying different technology than the ILECs use, no matter how precisely one sets the call termination price, there is no reason to think that any particular CLEC, or CLECs as a group, will ever try to closely match the mix of service offerings that characterize the ILECs' operations. For this same reason, any regulatory policy designed to encourage CLECs to match the ILECs' service mix, or to penalize them for failing to do so, will necessarily result in a loss of economic efficiency. Such a policy amounts to regulators trying to micro-manage the business plans of individual CLECs to ensure that they do not compete in the most efficient way possible. The only beneficiary of such a misguided policy would be the ILECs.

**ISP-bound traffic is technically indistinguishable from other data and voice local traffic, and should not be singled out for discriminatory treatment with respect to an ILEC's reciprocal compensation arrangements. (Issues 3 and 8)**

Q. Is there any technical basis for differentiating ISP-bound and "ordinary" traffic, as some ILECs have contended?

A. No, there is not. Fundamentally, the cost characteristics of local traffic do not depend upon the *content* of the call or the purpose or use motivating the call (e.g., to connect to and transmit data to/from an ISP vs. a voice call to a friend or to a nearby retail or service establishment). The factors affecting the cost of processing a call through an ILEC's local network, or of processing a call from an ILEC's customer to the point of interconnection with a CLEC, depend solely upon the PSTN resources that are utilized by the call — primarily switching and transport — which are affected, to varying degrees, by the call's duration, the number of switching operations involved in processing the call, the distance over which the call travels, and the extent to which the use of these resources affects their peak-demand capacity at the time that the call is in progress.

For this reason, calls to ISP modem lines with numbers that are included within the calling party's local calling plan are technically indistinguishable from "ordinary" end-user to end-user local calls, whether completed entirely on the ILEC's network or involving a hand-off by the ILEC to a CLEC for termination.

There is no technical difference between the way ordinary end-user to end-user calls are handled vs. the manner in which an end-user to ISP call is handled where the call is originated by an ILEC customer and terminated to a CLEC customer. Routing a call from an originating end user to an ISP's incoming modem line is technically identical to routing a call from the same end user to any local telephone number served by the incumbent or other LEC. As shown in Figures 3 and 4, the switch serving the recipient end user's line receives the incoming call on a trunk from another switch (either another end office switch or a tandem switch), identifies the appropriate line to "ring" (i.e., the line on which to signal an incoming call), and then proceeds to generate an "incoming call" signal to the recipient access line.

When the incoming call is answered (whether by a person picking up a handset, an answering or fax machine going "off-hook" in response to the ringing signal, or by a modem automatically going "off-hook") the "incoming call" signal is immediately terminated and a direct (circuit-switched) connection between the calling and called parties is established. This same sequence of events takes place when someone in Tallahassee or a nearby suburb calls the Commission, his or her local bank, or places any other local call, *including a call to an ISP POP whose number is within the originating party's local calling plan*. In terms of the use of local network resources, it is also essentially the same thing that happens when an incoming long distance

call reaches the switch serving the called customer. On a technical basis, there is no reason to distinguish among any of these types of PSTN traffic.

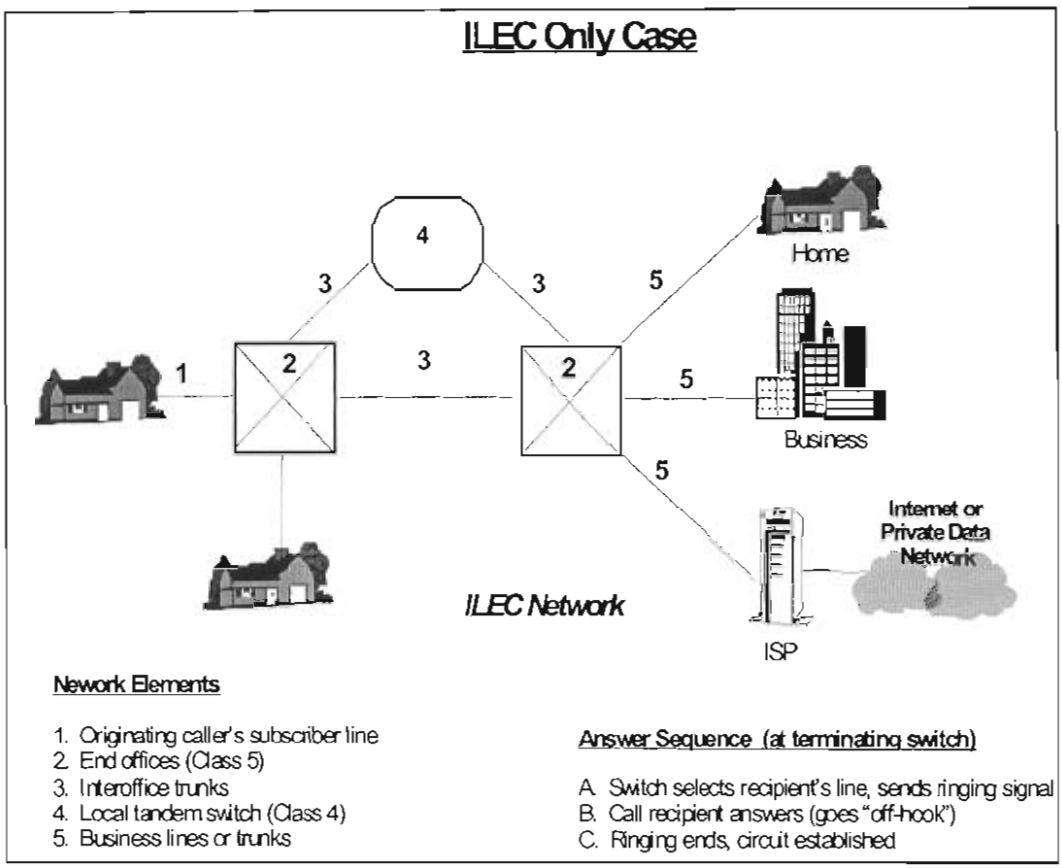


**Figure 3.** Routing a call to an ISP is technically identical to routing a call to any other local telephone number (Case1: ILEC customer calls an ISP served by the ILEC).

As shown in Figure 4, where the call is directed to a customer (end user or ISP) served by a CLEC, the originating LEC (typically an ILEC) routes the call from the originating Class 5 end office to a Class 4 tandem office from which it and other calls from other Class 5 end offices that are bound for the same CLEC are aggregated and routed to the CLEC's Point of

Interconnection ("POI") with the ILEC. The CLEC then routes the call from the POI through its network to its ISP customer.

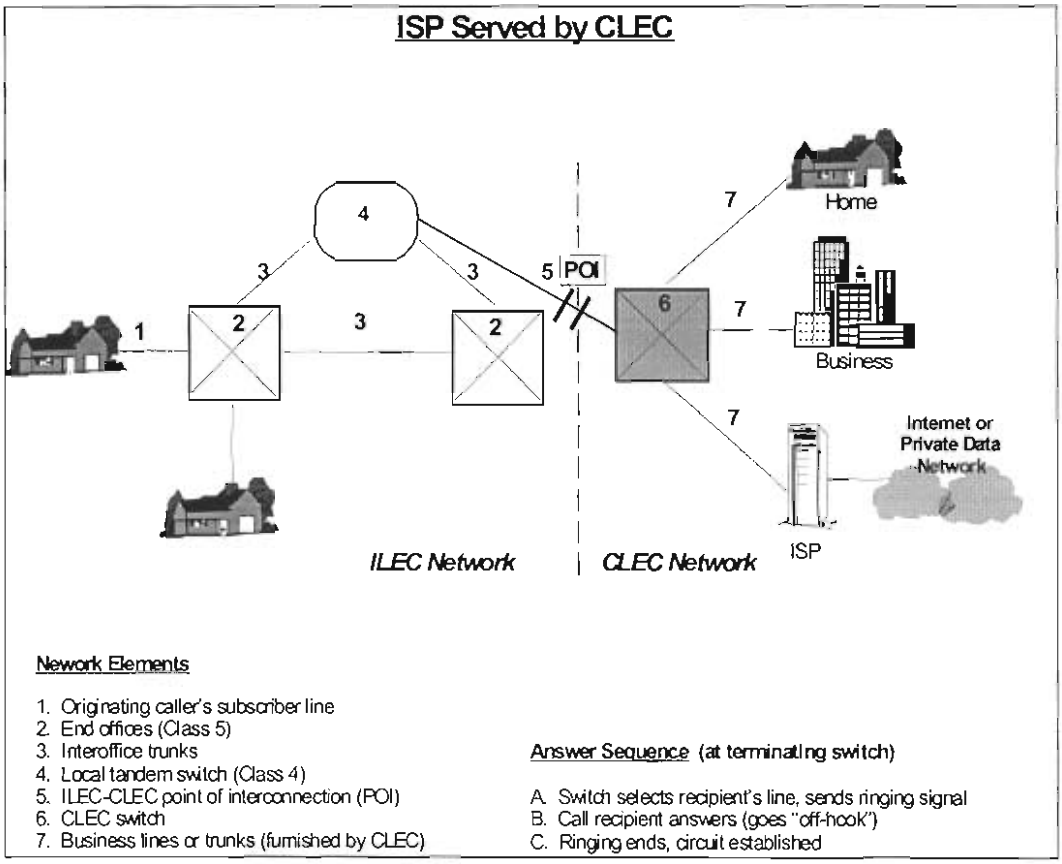


**Figure 4.** Routing a call to an ISP is technically identical to routing a call to any other local telephone number (Case 2: ILEC customer calls ISP served by a CLEC).

If the ISP is served directly by the ILEC, calls would be routed either from the originating Class 5 end office to a tandem office, and then to the terminating Class 5 end office from which the ISP's service is furnished, i.e., to which the ISP's access lines are connected, or directly to that end office via

a Class 5-to-Class 5 interoffice trunk (Figure 3). Where a high volume of traffic exists between the originating and terminating end offices, the use of direct interoffice trunk routing that bypasses the tandem may in some cases be more efficient. The matter of direct vs. tandem routing is an economic decision for the ILEC to make based upon the volume and variability of the traffic, and the relative costs of direct trunking and tandem switching in each instance.

Q. Does the customer who originates calls to an ISP's modem bank perceive any distinction between these calls and "ordinary" voice calls?

A. No. From the consumer's perspective, an ISP-bound call is dialed just like any other local call. Also from the consumer's perspective, an ISP-bound call is covered under whatever local calling plan the consumer has chosen from his or her LEC. If the ISP's phone number is outside the consumer's local calling area, then toll charges apply (although, in this case, the consumer would be highly reluctant to call that ISP, and would likely look for another one with a locally dialable number). If it is within the consumer's local calling area but the consumer has elected to take measured local service, then measured local service rates apply. From the consumer's perspective, there is no distinction between a local call placed to an ISP and a local call placed to a neighbor; both are dialed in the same manner, priced in the same manner, and are included or not included in the consumer's local calling area on

exactly the same basis. In economic terms, ISP-bound calls -- specifically the portion of the call that is carried over the local public switched telephone network from the originating caller to the ISP -- are "local" in nature and are fully embraced within the applicable state tariffs covering local exchange service.

Q. When an ISP-bound call is originated by a retail subscriber of BellSouth or Verizon and routed to the central offices serving their own ISP affiliates, do they treat the call as local for rating purposes, as long as the dialed number is included in the originating caller's local calling plan?

A. Yes, they do. In fact, the ISP affiliates of BellSouth and Verizon, BellSouth.net and Verizon Online, routinely advertise the availability of toll-free local calling on the Web pages that market their Internet services to retail users. BellSouth.net's website has a page that allows a user to find which of its dial-in numbers may be within the user's local calling area. The Verizon Online website has a page which allows a user to enter his or her home NPA-NXX (i.e., first six digits of the telephone number) or a state and obtain a listing of the nearest dial-up access numbers. A representative web page for Florida is provided in Exhibit __ (LLS-3) to my testimony.[7] As shown therein, before listing the dial-up access numbers, Verizon Online

7.Source: http://cgi.gte.net/dialin/results.asp (for Florida), accessed 11/17/2000.

directs potential ISP users to confirm the local treatment of the called number:

> In order to confirm that a number is local to you, please refer to the front pages of your local telephone book where the area codes and first three digits within your calling area are listed. Also, check with your local telephone company to find out if there is an extended calling plan available in your area that will allow you to connect locally to a nearby Verizon Online access number.
>
> **Note:** Be sure to check with your local phone company to make sure the numbers you choose are local, toll-free call from your area. Simply call the operator and ask whether the numbers are local or toll call.

Clearly, if the Commission were to treat as non-local (and thus exclude from reciprocal compensation) the ISP-bound calls originated by BellSouth and Verizon subscribers that are routed to ISPs served by CLECs, but allow local rating of such calls routed to ISPs served by the two ILECs, then the ILECs and their ISP affiliates would be afforded an enormous and unwarranted market advantage relative to the CLECs and their ISP customers.

**There is no practical means for reliably differentiating between "ordinary" calls and those that are terminated to ISPs. (Issues 6 and 8)**

Q. As a practical matter, do means exist today to reliably and accurately distinguish ISP-bound calls from other local data and voice calls?

A. No, in fact, I am not aware of any ILEC proposing a method that could reliably and accurately distinguish ISP-bound calls from other forms of local

traffic, despite ILECs' vigorous attempts to exclude ISP-bound calls from their reciprocal compensation obligations. Some ILECs have attempted to apply indirect methods to identify ISP-bound traffic after the fact, using billing records, analysis of call holding times and/or other means, but these approaches inject an unacceptably high degree of speculation and uncertainty into the results they can produce.

Moreover, the fact that modem pools may be shared among multiple subscribers, including ISPs and non-ISP businesses, means that ILEC attempts to identify all ISP-bound calls by associating telephone numbers with ISPs will necessarily fail.

Q. What sort of traffic other than that bound for ISPs would share these modem pools?

A. These modem pools might, for example, also provide connectivity to corporate networks for use by telecommuting employees, access to specialized online service providers that do not involve the Internet, and various other types of dedicated data traffic.

Q. What would be required in order to establish an ISP-bound traffic identification system that would be sufficiently robust to support an exclusion of ISP-bound calls from reciprocal compensation?

A. The most basic requirement for such a system is that it must have a high degree of accuracy, i.e., it would have to minimize both false positives (calls identified as ISP-bound which in fact are not) and false negatives (calls identified as other than ISP-bound, which in fact are ISP-bound calls). Both types of errors must be avoided, particularly in a context in which inter-carrier payments for call termination would depend upon whether or not the call was classified as ISP-bound. Second, the identification process should produce repeatable results, meaning that the classification of any given call should come out the same each time the identification process would be applied to it. Third, the process should be verifiable, so that the affected CLEC (as well as third parties such as the Commission) could review the accuracy of the ILECs' call classification results and propose corrections if necessary.

Q. Would an identification method that concluded that particular telephone numbers terminate to an ISP based upon statistical sampling, or that relied upon assumptions that all calls possessing particular traffic characteristics are ISP-bound, be adequate to identify ISP-bound calls for inter-carrier compensation purposes?

A. No, neither method would be adequate for that purpose, because neither system could guarantee that the calls terminated to specific CLEC-served telephone numbers (and thus, specific CLEC customers) would be correctly

identified as ISP-bound . This is particularly clear in the latter case, because there is no combination of traffic characteristics (i.e., call duration, time-of-day, distance) that will uniquely mark a call as ISP-bound. For example, several ILECs have claimed that ISP-bound calls tend to have longer average call durations than non-ISP bound calls, but this is also likely to be true for other types of voice calls, such as second-line usage by teenagers, or for dial-up data calls by telecommuters that access a corporate computer network rather than the Internet. In fact, it is a logical fallacy to extrapolate from a group's average characteristics to the characteristics of individuals comprising that group. Thus, an identification method that assumed that all calls over 60 minutes in duration were ISP calls would be akin to inferring from the fact that, on average men are taller than women, to the conclusion that every person over six feet tall must be a man.

Moreover, an ILEC's failure to correctly classify ISP versus non-ISP usage could have unintended adverse effects on end users. Assume that a CLEC provided local exchange service to a mix of ISP and non-ISP business customers using a total of 100 telephone numbers, 80 of which terminate onto ISP modem banks, and 20 of which terminate to ordinary business telephones or FAX machines. Suppose that the ILEC devised an ISP-bound traffic identification mechanism that correctly identified 75 of the ISP-terminated telephone numbers, but mis-classified the remaining five as non-ISP terminating numbers, and also mis-classified three of the 20 non-ISP numbers

as terminating at an ISP. If the ILEC were to cease paying reciprocal compensation for calls to the telephone numbers that the ILEC identified as ISP, then the CLEC might be forced to attempt to recover its costs of call termination directly from those customers. In that case, the ILEC's identification errors would produce a situation of unfair (and potentially unlawful) price discrimination: the CLEC customer(s) subscribing to the three telephone numbers mis-classified as ISP would pay more to the CLEC than similarly-situated, but correctly classified CLEC customers, and the CLEC customer(s) subscribing to the five telephone numbers that were ISPs, but mis-classified as non-ISPs, would pay less to the CLEC than their ISP competitors. While I do not recommend the segregation of ISP-bound calls or treating those calls any differently than other local traffic subject to reciprocal compensation, any workable system would have to ensure that individual calls and/or telephone numbers were in all cases correctly identified as ISP-bound or not.

Q. Some ILECs have proposed a method of differentiating ISP-bound for "ordinary" traffic based upon the ratio of originating to terminating usage. Is that an appropriate method?

A. No, it is not. Under this theory, where a CLEC, for example, has a volume of terminating traffic that exceeds its originating traffic by more than a given multiple, the "excess" terminating traffic is "assumed" to be ISP-bound.

CLECs that specialize in serving customers with high inward calling requirements do not limit their customers to ISPs. Other examples of customers with disproportionate inward calling demand are voice mail providers, taxicab dispatchers, pizzarias, paging carriers, and unified messaging service providers. Most, if not all, of calls to these types of customers are indisputably local even by the ILECs' own definitions, yet adoption of an arbitrary inward/outward ratio as a means for separating ISP-bound calls from other calls would almost assuredly capture this type of inward traffic as well.

Q. Even if it could be done, is that any basis for differentiating between ISP-bound and other types of calls?

A. No, there is not. The ILECs' costs to transport calls from their point of origin to the hand-off point is not affected in any manner by the nature of the call (voice vs. data, ISP-bound vs. "ordinary" local calling) or by its content (Internet data vs. ordinary voice conversation). Any such attempt would constitute a gross and unreasonable discrimination against ISP-bound calls, and should not be accepted by this Commission.

**The Commission should defer consideration of whether inter-carrier compensation for ISP-bound traffic should apply to carrier and ISP arrangements other than circuit-switched technologies. (Issue 7)**

Q. Staff has raised the issue of whether inter-carrier compensation for ISP-bound traffic should be limited to carrier and ISP arrangements which involve circuit-switched technologies. Should the Commission impose any such limitation at this time?

A. No, there is no need to do so. The interconnection requirements of Section 251 of the *Telecommunications Act of 1996*, and the corresponding reciprocal compensation obligations set forth therein and in Section 252, apply to the "transmission and routing of telephone exchange service and exchange access," which traditionally has been achieved through circuit-switched technologies. That said, the reciprocal compensation provisions in Section 251(b)(5) apply generally to the "transport and termination of telecommunications." Alternative technologies based on non-circuit switched architectures, such as packet-switching and ATM Frame Relay, generally are used today to provide computer-to-computer data connectivity rather than telephone exchange service or exchange access, and in fact often function separate and apart from the public switched telephone network (other than reliance in some cases on local loop facilities).[8] On the other hand, services based on these technologies almost certainly fall within the broad definition of "telecommunications." Whether services based on these

8.For example, when a line sharing arrangement is used to provide Digital Subscriber Loop (DSL) service for access to the Internet, the DSL capability is provided over the end user's existing copper loop, but it bypasses the PSTN and instead connects to the Internet via a packet-switching network.

technologies would fall within the FCC's narrowing regulation, to the effect that Section 251(b)(5) only applies to "local" telecommunications, is not clear.

In any event, in practical terms it appears that, to the extent that ISP-bound traffic is handled via non-circuit-switched arrangements, these arrangements have not generally been of the sort that would call for inter-carrier compensation, and ILECs and CLECs are not making inter-carrier payments relative to this traffic today. While non-circuit switched technologies can in principle be used to provide telephone exchange and exchange access services (e.g., via IP telephony), such use is negligible today and would have no bearing on inter-carrier compensation relative to ISP-bound traffic, since it would be a very inefficient and unlikely event for an end user to use IP telephony over their non-circuit-switched arrangement (e.g., a DSL service) to reach an ISP.

In these circumstances, there is no reason for the Commission to take action at this time. To the contrary, it would be preferable to wait to see if this issue ever arises as a practical matter. If it does, the Commission can make a determination (assuming that the FCC has still not addressed the problem by then) based on a clearer factual understanding of the particular serving arrangements within which reciprocal compensation would arguably apply in a non-circuit-switched context.

## CLEC COSTS OF LOCAL TERMINATIONS

**CLEC transport and switching networks differ materially from ILEC networks both with respect to their architecture and their design. (Issues 4 and 6)**

Q. What are the major architectural features of ILEC and CLEC local networks?

A. Local telephone networks are comprised of three principal components:

- *Subscriber loops* — dedicated facilities interconnecting the local exchange carrier wire center with the subscriber's premises;
- *End office switches* — the switching systems at which individual subscriber loops terminate and which interconnect subscribers with each other and with interoffice and interexchange network facilities; and
- *Interoffice network* — trunking and switching facilities that provide interconnections among end offices and between end offices and other telecommunications carriers.

The principal architectural differences between ILEC and CLEC networks arise largely in the relative *mix* of these various network components.

Q. Please explain.

A. ILEC networks have been built up over more than a century and generally consist of a large number of end offices that are physically located in relatively close geographic proximity to the subscribers they directly serve. For example, BellSouth currently operates 215 local, end office ("Class 5") switches in its Florida service areas,[9] at which subscriber loops are terminated and connected. When a call involves customers served by different end offices (for example, customers located in different communities), completion of the call requires that it be routed between the two end offices over an interoffice trunk. In order to avoid deploying dedicated interoffice trunks between every possible pair of ILEC end offices, in most cases individual end offices are connected (via interoffice trunks) to an intermediate switching point known as a "tandem" office. The tandem switch (sometimes referred to as a "Class 4" switch in the North American network hierarchy) can then interconnect any of the individual end offices to which it is directly trunked. Where the end offices involved in a particular call are trunked to (subtend) *different* tandem switches, the call is completed via an interoffice trunk between the two tandems. In certain situations in which particularly high volumes of traffic exist within pairs of end offices, direct interoffice trunks may be used to connect the two end office switches involved.

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9.FCC ARMIS Database, Report 43-07, Table I: Switching Equipment, for BellSouth-Florida (COSA "BSFL"), row 111 (year-end 1999 local switches in BellSouth's Florida serving area equals 215). Source: http://gullfoss.fcc.gov:8080/cgi-bin/websql/prod/ccb/armis1/forms/output.hts, accessed 11/17/00.

Q. Why might not a CLEC network adopt this same type of design?

A. The differences between ILEC and CLEC network architectures are best explained in terms of the relative economics of switching, transport, and location.

Q. Are switching, transport, and location economic substitutes for one another?

A. In some cases, yes. Let's start with switching and transport. One way of looking at the principal network components is in terms of their primary functions of switching and transport. Subscriber loops support a transport function, carrying traffic between the customer's premises and the serving wire center; interoffice trunks also provide a transport function, carrying traffic from one switch to another. Switching and transport facilities are often economic substitutes for one another; for example, as I described above, by introducing a tandem switch to interconnect a number of individual end offices, one avoids the need to deploy direct interoffice trunks between every possible pair of end offices on the ILEC's network. Similarly, by deploying end office switching facilities in close geographic proximity to the individual subscriber, it is possible to concentrate traffic on a smaller complement of transport facilities than would be possible if, for example, individual switches are used to serve subscribers located across a large geographic area.

The specific mix of switching vs. transport facilities in a network thus depends heavily upon the relative cost of each and the overall scale of operations of the network. ILECs such as BellSouth serve millions of individual subscribers statewide and can thus afford to deploy relatively efficient, large-scale switching systems in close geographic proximity to their customers. CLECs typically serve a customer population that is a minute fraction of the size of the ILEC's customer base. In order to achieve switching efficiencies, CLECs will typically deploy a relatively small number of large switches, and so must transport their customers' traffic over relatively large distances.

This switching vs. transport trade-off has always been present in telecom network design: you can generally reduce switching costs by concentrating demand in a small number of large switches, but by so doing you increase the transport capacity that is required to connect the switches to customers over greater distances. In recent years, however, the scales have been tipped — *shoved* would probably be a better word — decidedly in the direction of substituting transport for switching. Transport costs have become far less distance-sensitive and, with the use of high-capacity fiber optics, massive amounts of capacity can be deployed at little more than the cost of more conventional transport capacity sizes. ILECs have been consolidating multiple switches into large main frame/remote configurations. In the case of

CLECs, the substantially smaller scale of their customer base and traffic load makes any other approach infeasible as an economic matter.

Q. How does location affect this mix?

A. In two ways. First, as just noted, by locating switching facilities near to pre-existing customer locations, a LEC may avoid expensive and relatively inefficient transport (individual customer loops). (Of course, a proliferation of switches requires more interoffice transport facilities, but these are much more efficient than loops). Second, when a carrier is serving a customer base that is itself growing or facing rapidly changing needs, a carrier can work with its customers to collocate the carrier's network equipment with the customers' own facilities. This activity, in effect, substitutes the cost of space for the collocated equipment for the cost of transport facilities between the switch and the customer.

Q. How might a typical CLEC network be designed?

A. I would hesitate to say that there is such a thing as a "typical" CLEC. But one network design favored by CLECs with actual or planned deployment of fiber outside plant would be to use Unbundled Network Element (UNE) loops leased from ILECs and CLEC-owned subscriber loop facilities collected at centralized locations in each community in which the CLEC

offers service. At these collection points, the traffic is concentrated onto high-capacity transport facilities (that may be leased from the ILEC or from other carriers or owned by the CLEC itself) for the sometimes long trip to the CLEC switch. There are several different types of concentration arrangements that may be used, depending upon the aggregate amount of traffic that is involved. For relatively low-volume situations, passive multiplexing of the individual subscriber loops onto specific dedicated channels in the high-capacity "pipe" may be most efficient; in other cases, small stand-alone switches or Remote Service Units (RSUs) subtending the distant Host Switch may be deployed. Where the CLEC's customers are concentrated within a small, relatively confined area (e.g., within a shopping mall), a small PBX-like switch may be used to interconnect individual end users with a common pool of facilities for the trip to the CLEC central office switch.

**The differences between ILEC and CLEC network architectures, as well as the substantially smaller scale of CLEC operations, are key sources of cost differences between the two types of carriers. (Issues 4 and 6)**

Q. Is it reasonable to expect that a CLEC's costs will differ, with respect to both level and structure, from the cost conditions confronting an ILEC?

A. Indeed, yes. There are in fact two principal sources of cost variation as between a CLEC and an ILEC with respect to the provision of local exchange

service and, in particular, the costs of transporting and terminating local calls: *scale* and *facilities mix*.

*Scale*. The overall cost of constructing and operating a telecommunications network are heavily impacted by the overall volume of traffic and number of individual subscribers that the network is designed to serve; that is, telecom networks are characterized by substantial *economics of scale and scope*. As I have previously noted, CLECs serve a far smaller customer population and carry far less traffic than do ILECs. Because they are necessarily forced to operate at a far smaller scale, CLEC networks may exhibit higher average costs than ILEC networks. These higher average costs may be combated in some cases if a CLEC is able to achieve *economies of specialization*, i.e., focusing upon a narrow range of customers and services, but serving those customers extremely efficiently. From this perspective, CLECs that have concentrated their marketing efforts thus far on customers that receive calls may be attempting to achieve economies of specialization, precisely to offset the cost disadvantages associated with relatively small scale and limited scope.

Q. Are there other ways in which a CLEC's relatively small scale of operations may affect the level of its costs?

A. Yes. The effects of these scale and scope economics are further compounded by the fact that ILECs are able to purchase switching, transport and other network components at a far more favorable price than their much smaller CLEC rivals. For example, testimony offered by SBC in the 1998 Connecticut DPUC proceeding to consider the Joint Application of SBC and SNET for approval of their merger[10] indicated that following the merger SNET's costs of equipment purchases would decrease substantially due to the increased purchasing power of SBC relative to that of a stand-alone SNET. Specifically, SBC indicated that it expected cost savings synergies from the merger "particularly from using SBC's scope and scale to drive costs out of the business." SBC stated that it has "learned from the SBC/Pacific Telesis merger that scope and scale, especially in the purchasing area, are tangible and significant."[11] SBC's Chief Financial Officer also stated that "we know that SNET pays over 20 percent more for purchases of switching and transport equipment than we do at SBC."[12] SBC also indicated that the savings experienced in contract negotiations to date for the combined SBC/Pacific Telesis "tend to support the consultants' estimates" during the

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10. *Joint Application of SBC Communications, Inc. And Southern New England Telecommunications Corporation for Approval of a Change of Control*, Connecticut Department of Public Utility Control Docket No. 98-02-20.

11. *Id.* SBC Response to MCI-4, Exhibit A, "Introduction and Opening Comments of Don Kiernan," January 5, 1998, SBCSNET004573.

12. *Id.*

SBC/PTG merger discussions of procurement savings (expense and capital) in the 7%-10% range.[13]

Of course, a stand-alone SNET, with some 2.3-million residential and business access lines in Connecticut, is itself still much larger than many CLECs. Accordingly, it is entirely reasonable to expect that, without the volume discounts available to a large ILEC such as SBC, Verizon, or BellSouth, a CLEC will experience higher capital-related costs.

A CLEC's capital-related costs will also tend to exceed the corresponding ILEC items due to the substantially greater level of risk that investors reasonably ascribe to CLECs. CLECs can thus expect to confront higher costs of debt and equity capital as well as the need to recover their capital investments over a somewhat shorter period of time than would be required for an ILEC with more stable and predictable demand.

*Mix.* All else being equal, it would not be surprising to see a CLEC's network as consisting of relatively less switching and relatively more transport than would an ILEC network. While switching costs are sensitive both to the

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13. *Id.* SBC Response to OCC-12. However, according to a study conducted by SBC, procurement savings had originally been estimated at only 3% for the SBC-PacTel merger. *See* California Public Utilities Commission, 96-05-038, *In the Matter of the Joint Application of Pacific Telesis Group ("Telesis") and SBC Communications Inc. ("SBC") for SBC to Control Pacific Bell*, Decision 97-03-067, March 31, 1997, at 30.

number of call set-ups as well as to aggregate call duration, transport costs tend to vary primarily with duration. Accordingly, it is reasonable to expect that CLEC local usage costs will exhibit proportionately greater duration-sensitivity and proportionately less set-up sensitivity than do ILEC usage costs.

**The appropriate inter-carrier compensation for the termination and transport of ISP-bound local calls, as well as other forms of local traffic, is a symmetric rate based upon the ILEC's prevailing TELRIC cost level, which creates incentives for continual reductions in the costs of call termination services and harms neither ILECs nor end users. (Issues 3, 4, 5 and 6)**

Q. When the FCC devised its rules for reciprocal compensation between ILECs and CLECs for the exchange of local traffic, what principle did the FCC adopt concerning the use of a symmetric rate?

A. In the *First Report and Order*[14] establishing the FCC's rules for reciprocal compensation for the exchange of local traffic, the FCC determined that the rates applied for reciprocal compensation purposes should be presumptively

14. *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996,* CC Docket No. 96-98, First Report and Order, 11 FCC Rcd 15499 (1996) (*Local Competition Order),* aff'd in part and vacated in part sub nom., *Competitive Telecommunications Ass'n v. FCC,* 177 F.3d 1068 (8th Cir. 1997) and *Iowas Utils. Bd. V. FCC,* 120 F.3d 753 (8th Cir. 1997), aff'd in part and remanded, *AT&T v. Iowa Utils. Bd.,* 119 S. Ct. 721 (1999).

symmetric and based upon the ILEC's costs, unless a CLEC believes that its own costs are greater. The specific rule implementing this requirement is 47 CFR ' 51.711(b), which provides that:

> A state commission may establish asymmetrical rates for transport and termination of local telecommunications traffic only if the carrier other than the incumbent LEC (or the smaller of two incumbent LECs) proves to the state commission on the basis of a cost study using the forward-looking economic cost based pricing methodology described in Secs. 51.505 and 51.511, that the forward-looking costs for a network efficiently configured and operated by the carrier other than the incumbent LEC (or the smaller of two incumbent LECs), exceed the costs incurred by the incumbent LEC (or the larger incumbent LEC), and, consequently, that such that a higher rate is justified.

The rules in Section 51.505 and 51.511 referenced therein define the "forward-looking economic cost" that is to be the basis for pricing, in terms of the FCC's "total element long run incremental cost" (TELRIC) methodology plus a reasonable allocation of forward-looking common costs. Thus, the FCC allows a CLEC to rebut the presumptive symmetric rate by filing its own TELRIC-based cost study if the CLEC believes its transport and termination costs are *higher* than the ILEC's.[15] The FCC did not contemplate the filing of separate CLEC cost studies in the event a CLEC's costs were lower than the ILEC's.

15. See also the *Local Competition Order* at para. 1089 for elaboration of this point.

Q. Is it appropriate to apply the same type of presumptive symmetry framework to the rates for the inter-carrier compensation for transport and termination of ISP-bound local calls, even if the Commission decides to treat ISP-bound calls separately from other forms of local traffic for reciprocal compensation purposes?

A. Yes, it is. Whether or not the Commission determines that the FCC's reciprocal compensation rules are directly applicable to local (or for our present purposes, at least toll-free) ISP-bound calls, their underlying economic justification applies with undiminished force.

First, Section 252(d)(2)(ii) of the Telecommunications Act requires that inter-carrier charges for the transport and termination of traffic must reflect "a reasonable approximation of the additional costs of terminating such calls." As a forward-looking, long run incremental costing methodology, the TELRIC-based approach, as defined by the FCC and implemented by the CPUC, satisfies this requirement. During the FCC's consideration of this issue, some ILECs, including Verizon's parent company GTE Service Corporation (GTE), argued that application of a symmetric reciprocal compensation rate based upon the ILEC's costs would violate this provision of the Act.[16] The FCC correctly rejected those arguments, since Section 252(d)(2)(ii) does not require precise identification of each carrier's call

16. *Local Competition Order* at para. 1072.

termination costs, but instead a reasonable approximation which is afforded by the ILEC's forward-looking cost level.[17]

Second, adopting a symmetric rate based upon the ILEC's TELRIC cost level minimizes the ILEC's incentives for strategic gaming of its termination rate. If the ILEC's claimed costs are overstated, the resulting symmetric rate would create opportunities for CLECs to pursue customers with high volumes of inbound traffic, and thereby become net recipients of (overstated) termination charges. If the ILEC understates its costs, CLECs could pursue outbound traffic-oriented customers, and thus pay (understated) termination charges.[18] The FCC concluded similarly that "symmetrical rates may reduce an incumbent LEC's ability to use its bargaining strength to negotiate excessively high termination charges that competitors would pay the incumbent LEC and excessively low termination rates that the incumbent LEC would pay interconnecting carriers."[19] Clearly, the FCC intended that, by requiring symmetry, the result would approximate the classic "you cut, I choose/I cut, you choose" form of negotiation that I described earlier in my testimony, which provides both parties with the incentive to "divide the pie" equally between them.

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17. *Id.* At para. 1085.

18. In fact, it appears that ILECs pursued the first strategy during their initial arbitrations with CLECs, thereby stimulating CLEC's targeting of in-bound calling services markets.

19. *Local Competition Order* at para. 1087.

The ILEC's TELRIC cost level represents the ILEC's avoided cost of termination, which would otherwise be incurred by the ILEC; consequently, if it is used to establish a symmetric termination rate, the ILEC should be indifferent as an economic matter to whether it or a CLEC completes the ISP-bound calls. That is, if the ILEC is the net recipient of traffic, it will be compensated for its work at a rate than accurately reflects the actual costs it incurs; conversely, if the CLEC is the net recipient, then the ILEC will avoid costs precisely in proportion to the quantity of traffic that is delivered to the CLEC for termination.

In addition, use of a symmetric rate based upon the ILEC's TELRIC cost level creates incentives for all carriers, including CLECs, to find innovative ways to reduce their costs below that level. The FCC also recognized the possibility that CLECs' own termination costs may be lower than the level implicit in the symmetric rate, finding that (id., para. 1086) "a symmetric compensation rule gives the competing carriers correct incentives to minimize its own costs of termination because its termination revenues do not vary directly with changes in its own costs". Nothing in the FCC's rules suggested that the symmetric reciprocal compensation rate would subsequently be adjusted based upon the CLEC's (lower, more efficient) costs, as BellSouth and Verizon are here seeking to accomplish.

Thus, the FCC correctly viewed the possibility of CLECs lowering their own termination costs below the symmetric rate (and thereby receiving payments higher than their forward-looking economic costs) as a positive development and a consequence of competition and innovation.

Q. Some ILECs have contended that CLECs' costs of terminating ISP-bound calls are substantially less than those confronting ILECs because CLECs have been able to acquire specialized switches that are designed specifically to handle high inward calling volumes. Under those circumstances, would it be reasonable for CLEC termination charges to be set below those being imposed by ILECs?

A. No, it would not. As I have just explained, the FCC established the requirement for symmetric termination rates for reciprocal compensation fully recognizing that some CLECs may achieve a lower cost level than the ILEC's, and thus be rewarded with higher profits. To the extent that certain CLECs are deploying advanced switching technologies designed to efficiently provide high-volume inward calling services, they simply are responding to the economic incentives created by the FCC's symmetry rule, and by succeeding in this market, they are showing that the rule is in fact promoting competition.

## CONCLUSION

Q. What are your principal recommendations to the Commission in this proceeding?

A. As my testimony demonstrates, there is no sound economic or policy foundation to support introducing a distinction between local voice traffic and ISP-bound traffic for reciprocal compensation purposes. Moreover, I have explained that as a practical matter, there is no means today to reliably and accurately distinguish ISP-bound calls from other local data and voice calls. Consequently, the Commission should refrain from attempting to establish such a distinction, and instead should make a finding that ISP-bound traffic that terminates to a number within a subscriber's local calling plan is subject to reciprocal compensation pursuant to Sections 251 and 252 of the *Federal Telecommunications Act of 1996*.

In addition, the Commission should determine that the appropriate inter-carrier compensation for the termination and transport of ISP-bound local calls, as well as other forms of local traffic, is a symmetric rate based upon the ILEC's prevailing TELRIC cost level, because a symmetric rate creates incentives for continual reductions in the costs of call termination services and harms neither ILECs nor end users.

By adopting these recommendations, together with findings consistent with the remaining issues discussed in my testimony, the Commission can best facilitate continued growth in local exchange competition, the ISP marketplace, and the availability of the Internet to Florida's citizens and businesses.

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

A. Yes, it does.

## Statement of Qualifications

## DR. LEE L. SELWYN

Dr. Lee L. Selwyn has been actively involved in the telecommunications field for more than twenty-five years, and is an internationally recognized authority on telecommunications regulation, economics and public policy. Dr. Selwyn founded the firm of Economics and Technology, Inc. in 1972, and has served as its President since that date. He received his Ph.D. degree from the Alfred P. Sloan School of Management at the Massachusetts Institute of Technology. He also holds a Master of Science degree in Industrial Management from MIT and a Bachelor of Arts degree with honors in Economics from Queens College of the City University of New York.

Dr. Selwyn has testified as an expert on rate design, service cost analysis, form of regulation, and other telecommunications policy issues in telecommunications regulatory proceedings before some forty state commissions, the Federal Communications Commission and the Canadian Radio-television and Telecommunications Commission, among others. He has appeared as a witness on behalf of commercial organizations, non-profit institutions, as well as local, state and federal government authorities responsible for telecommunications regulation and consumer advocacy.

He has served or is now serving as a consultant to numerous state utilities commissions including those in Arizona, Minnesota, Kansas, Kentucky, the District of Columbia, Connecticut, California, Delaware, Maine, Massachusetts, New Hampshire, Vermont, New Mexico, Wisconsin and Washington State, the Office of Telecommunications Policy (Executive Office of the President), the National Telecommunications and Information Administration, the Federal Communications Commission, the Canadian Radio-television and Telecommunications Commission, the United Kingdom Office of Telecommunications, and the Secretaria de Comunicaciones y Transportes of the Republic of Mexico. He has also served as an advisor on telecommunications regulatory matters to the International Communications Association and the Ad Hoc Telecommunications Users Committee, as well as to a number of major corporate telecommunications users, information services providers, paging and cellular carriers, and specialized access services carriers.

Dr. Selwyn has presented testimony as an invited witness before the U.S. House of Representatives Subcommittee on Telecommunications, Consumer

Protection and Finance and before the U.S. Senate Judiciary Committee, on subjects dealing with restructuring and deregulation of portions of the telecommunications industry.

In 1970, he was awarded a Post-Doctoral Research Grant in Public Utility Economics under a program sponsored by the American Telephone and Telegraph Company, to conduct research on the economic effects of telephone rate structures upon the computer time sharing industry. This work was conducted at Harvard University's Program on Technology and Society, where he was appointed as a Research Associate. Dr. Selwyn was also a member of the faculty at the College of Business Administration at Boston University from 1968 until 1973, where he taught courses in economics, finance and management information systems.

Dr. Selwyn has published numerous papers and articles in professional and trade journals on the subject of telecommunications service regulation, cost methodology, rate design and pricing policy. These have included:

"Taxes, Corporate Financial Policy and Return to Investors"
*National Tax Journal*, Vol. XX, No.4, December 1967.

"Pricing Telephone Terminal Equipment Under Competition"
*Public Utilities Fortnightly*, December 8, 1977.

"Deregulation, Competition, and Regulatory Responsibility in the Telecommunications Industry"
*Presented at the 1979 Rate Symposium on Problems of Regulated Industries — Sponsored by: The American University, Foster Associates, Inc., Missouri Public Service Commission, University of Missouri-Columbia*, Kansas City, MO, February 11 — 14, 1979.

"Sifting Out the Economic Costs of Terminal Equipment Services"
*Telephone Engineer and Management*, October 15, 1979.

"Usage-Sensitive Pricing" (with G. F. Borton)
(a three part series)
*Telephony*, January 7, 28, February 11, 1980.

"Perspectives on Usage-Sensitive Pricing"
*Public Utilities Fortnightly*, May 7, 1981.

"Diversification, Deregulation, and Increased Uncertainty in the Public Utility Industries"
*Comments Presented at the Thirteenth Annual Conference of the Institute of Public Utilities*, Williamsburg, VA — December 14 — 16, 1981.

"Local Telephone Pricing: Is There a Better Way?; The Costs of LMS Exceed its Benefits: a Report on Recent U.S. Experience."
*Proceedings of a conference held at Montreal, Quebec — Sponsored by Canadian Radio-Television and Telecommunications Commission and The Centre for the Study of Regulated Industries, McGill University*, May 2 — 4, 1984.

"Long-Run Regulation of AT&T: A Key Element of A Competitive Telecommunications Policy"
*Telematics*, August 1984.

"Is Equal Access an Adequate Justification for Removing Restrictions on BOC Diversification?"
*Presented at the Institute of Public Utilities Eighteenth Annual Conference*, Williamsburg, VA — December 8 — 10, 1986.

"Market Power and Competition Under an Equal Access Environment"
*Presented at the Sixteenth Annual Conference, "Impact of Deregulation and Market Forces on Public Utilities: The Future Role of Regulation" Institute of Public Utilities, Michigan State University*, Williamsburg, VA — December 3 — 5, 1987.

"Contestable Markets: Theory vs. Fact"
*Presented at the Conference on Current Issues in Telephone Regulations: Dominance and Cost Allocation in Interexchange Markets — Center for Legal and Regulatory Studies Department of Management Science and Information Systems — Graduate School of Business, University of Texas at Austin*, October 5, 1987.

"The Sources and Exercise of Market Power in the Market for Interexchange Telecommunications Services"
*Presented at the Nineteenth Annual Conference — "Alternatives to Traditional Regulation: Options for Reform" — Institute of Public Utilities, Michigan State University*, Williamsburg, VA, December, 1987.

"Assessing Market Power and Competition in The Telecommunications Industry: Toward an Empirical Foundation for Regulatory Reform" *Federal Communications Law Journal*, Vol. 40 Num. 2, April 1988.

"A Perspective on Price Caps as a Substitute for Traditional Revenue Requirements Regulation"
*Presented at the Twentieth Annual Conference — "New Regulatory Concepts, Issues and Controversies" — Institute of Public Utilities, Michigan State University*, Williamsburg, VA, December, 1988.

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*IEEE Communications Magazine*, January, 1989.

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"A Public Good/Private Good Framework for Identifying POTS Objectives for the Public Switched Network" (with Patricia D. Kravtin and Paul S. Keller)
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*Boundaries between Regulation and Competition in Telecommunications and Energy"*, Williamsburg, VA, December 1992.

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*"Commercially Feasible Resale of Local Telecommunications Services: An Essential Step in the Transition to Effective Local Competition,"* (Susan M. Gately, et al) a report prepared by ETI for AT&T, July 1995.

"Efficient Public Investment in Telecommunications Infrastructure" *Land Economics*, Vol 71, No.3, August 1995.

"Market Failure in Open Telecommunications Networks: Defining the new natural monopoly," in *Networks, Infrastructure, and the New Task for Regulation*, by Werner Sichel and Donal L. Alexander, eds., University of Michigan Press, 1996.

Dr. Selwyn has been an invited speaker at numerous seminars and conferences on telecommunications regulation and policy, including meetings and workshops sponsored by the National Telecommunications and Information Administration, the National Association of Regulatory Utility Commissioners, the U.S. General Services Administration, the Institute of Public Utilities at Michigan State University, the National Regulatory Research Institute at Ohio State University, the Harvard University Program on Information Resources Policy, the Columbia University Institute for Tele-Information, the International Communications Association, the Tele-Communications Association, the Western Conference of Public Service Commissioners, at the New England, Mid-America, Southern and Western regional PUC/PSC conferences, as well as at numerous conferences and workshops sponsored by individual regulatory agencies.

## Summary of BellSouth and Verizon's Basic Local Exchange Offerings in Florida

**BellSouth**

BellSouth's residence customers in Florida obtain local exchange service under the Company's tariffs for flat-rate or measured rate exchange service. BellSouth's Individual Line Flat-Rate Residence Service provides for an unlimited number of originated messages within the customer's defined local calling area for a flat monthly rate ranging from $7.30 to $10.65 depending upon the customer's Rate Group.[20] Alternatively, residence customers may choose BellSouth's Individual Line Message Rate Residence Service where, for monthly charge ranging from $6.77 to $8.40, the customer receives a monthly per-line message allowance of 30 outgoing local messages,[21] after which a $0.10 per-message charge applies.[22]

BellSouth's business customers may subscribe to Individual Line Flat-Rate Business Service, which provides for an unlimited number of local messages for a flat monthly rate ranging from $19.80 to $29.10 depending upon the customer's Rate Group.[23] BellSouth also offers Business Individual Line Message Rate Service, at rates ranging from $14.71 to $21.69, which provides a monthly message allowance of 75 local messages, after which the per-message charge is $0.12.[24]

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20. See BellSouth Telecommunications, Inc. Florida, General Subscriber Service Tariff Page 17 (revision 2), Effective: January 15, 2000.

21. BellSouth Telecommunications, Inc. Florida, General Subscriber Service Tariff Page 28 (revision 4), Effective: July 20, 2000.

22. BellSouth Telecommunications, Inc. Florida, General Subscriber Service Tariff Page 28 (revision 4), Effective: July 20, 2000.

23. See BellSouth Telecommunications, Inc. Florida, General Subscriber Service Tariff Page 17 (revision 2), Effective: January 15, 2000.

24. BellSouth Telecommunications, Inc. Florida, General Subscriber Service
(continued...)

In some communities, BellSouth's customers are offered the option of including one or more additional exchanges in their flat-rate local calling area by paying a fixed monthly "Enhanced Optional Extended Area Service" ("EOEAS") charge for each such exchange they wish to reach on a flat-rate basis[25]. The flat-rate EOEAS charge is based upon two factors — the distance between the customer's home exchange and the EOEAS exchange, and the number of exchange access lines in the EOEAS exchange. Calls placed to other nearby exchanges, including exchanges for which EOEAS is available but that are not selected by a customer for inclusion in his or her EOEAS flat-rate calling area, are provided under so-called "Extended Calling Service" ("ECS"). ECS provides usage based pricing for customer dialed or operator assisted calls to selected exchanges within the customer's LATA.[26] Customers are charged at a fixed per-message (per-call) amount of $0.25 for residential subscribers or $0.10 and $0.06 for the initial and subsequent minutes of each call, respectively, for calls originated by business customers.[27] (Calls placed to all other points within the same LATA are rated as intraLATA toll.)

**Verizon**

Although the specific rates differ, the structure of Verizon's Florida local exchange rates is generally comparable to that used by BellSouth. Verizon's residential customers can subscribe to Flat-Rate Service with monthly rates varying between $9.51 to $11.81 depending upon the customer's Rate Group.[28] Residential Message-Rate Service is offered at between $6.01 and $7.00 per

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24. (...continued)
Tariff, Page 29 (revision four), Effective: July 20, 2000..

25. BellSouth Telecommunications, Inc. Florida, General Subscriber Service Tariff, Page 36 (revision seven) Effective: January 15, 2000.

26. BellSouth Telecommunications, Inc. Florida, General Subscriber Service Tariff, Page 41 (revision one), Effective October 16, 1996.

27. BellSouth Telecommunications, Inc. Florida, General Subscriber Service Tariff, Page 42 (revision 1) Effective October 7, 1997.

28. GTE (Verizon) Florida Incorporated, General Services Tariff, Page 1 (revision fifteen), Effective: February 4, 2000.

month, plus local usage charges.[29] Verizon's residential Measured-Rate Service includes a $9.57 usage allowance each month, with additional local messages charge at $0.10 each.[30]

For business customers, Verizon offers Measured-Rate Service for individual lines or trunks at a monthly rate of $17.67, with no monthly calling allowance and an additional local message charge of $0.10.[31] In addition to the basic service, Verizon offers ECS to business and residence basic exchange customers in all exchange services. Residence customers are charged $0.25 per call, whereas Business customers are charged $.04 per call "connection" and $.06 for each minute.[32]

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29. GTE (Verizon) Florida Incorporated, General Services Tariff, Page 2 (revision ten), Effective: May 28, 1996.

30. GTE (Verizon) Florida Incorporated General Services Tariff, Page 2 (revision ten), Effective: May 28, 1996.

31. GTE (Verizon)Florida Incorporated General Services Tariff, Page 1.1 original, Effective: November 7, 1995.

32. GTE (Verizon) Florida Incorporated General Services Tariff, Page 19 (revision 3), Effective: March 26, 1999.

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verizon online

Search Options | Sign Up With Us | My Account | Products & Services | Online Help

Home | Dial Access Numbers | Contact Us | Site Map | System Status

## Dial Access Numbers

### Find A Dial Access Number In Your Area

In order to confirm that a number is local to you, please refer to the front pages of your local telephone book where the area codes and first three digits within your calling area are listed. Also, check with your local telephone company to find out if there is an extended calling plan available in your area that will allow you to connect locally to a nearby Verizon Online access number.

**Note:** Be sure to check with your local phone company to make sure the numbers you choose are local, toll-free call from your area. Simply call the operator and ask whether the numbers are local or toll call.

| Telephone Number | City | State | Access Type |
|---|---|---|---|
| (305)292-1123 | Key West | FL | 33.6K,ISDN,V.90 |
| (305)351-0018 | Miami | FL | 33.6K,ISDN,V.90 |
| (305)358-6951 | Miami | FL | ISDN Only,, |
| (305)702-0000 | Miami | FL | 33.6K,V.90, |
| (321)268-8898 | Titusville | FL | 33.6K,ISDN,V.90 |
| (321)723-1352 | Melbourne | FL | 33.6K,ISDN,V.90 |
| (352)372-2840 | Gainesville | FL | 33.6K,ISDN,V.90 |
| (352)683-1313 | Weekiwachee Springs | FL | 33.6K,ISDN,V.90 |
| (352)690-1965 | Ocala | FL | 33.6K,ISDN,V.90 |
| (407)245-2969 | Orlando | FL | 33.6K,ISDN,V.90 |
| (407)847-0062 | Kissimmee | FL | 33.6K,ISDN,V.90 |
| (561)219-3713 | Stuart | FL | 33.6K,ISDN,V.90 |
| (561)237-0284 | Boca Raton | FL | 33.6K,ISDN,V.90 |
| (561)462-0023 | Fort Pierce | FL | 33.6K,ISDN,V.90 |
| (561)681-9557 | West Palm Beach | FL | 33.6K,ISDN,V.90 |
| (561)794-1140 | Vero Beach | FL | 33.6K,ISDN,V.90 |

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|---|---|---|---|
| (727)465-9301 | Clearwater | FL | 33.6K,ISDN,V.90 |
| (727)573-0863 | Pinellas Park | FL | 33.6K,V.90, |
| (727)827-0117 | St Petersburg | FL | 33.6K,ISDN,V.90 |
| (727)841-0743 | New Port Richey | FL | 33.6K,ISDN,V.90 |
| (813)247-7863 | Tampa | FL | 33.6K,ISDN,V.90 |
| (813)277-9634 | Tampa | FL | 33.6K,ISDN,V.90 |
| (813)775-2021 | Tampa | FL | 33.6K,ISDN,V.90 |
| (813)788-0518 | Zephyrhills | FL | 33.6K,ISDN,V.90 |
| (850)222-0763 | Tallahassee | FL | 33.6K,ISDN,V.90 |
| (850)453-9550 | Pensacola | FL | 33.6K,ISDN,V.90 |
| (850)872-1932 | Panama City | FL | 33.6K,ISDN,V.90 |
| (850)969-9884 | Pensacola | FL | 33.6K,ISDN,V.90 |
| (863)422-0113 | Haines City | FL | 33.6K,ISDN,V.90 |
| (863)665-1506 | Lakeland | FL | 33.6K,ISDN,V.90 |
| (863)679-9638 | Winter Haven/Lake Wales | FL | 33.6K,ISDN,V.90 |
| (904)255-6221 | Daytona Beach | FL | 33.6K,ISDN,V.90 |
| (904)312-0773 | Palatka | FL | 33.6K,ISDN,V.90 |
| (904)350-6641 | Jacksonville | FL | 33.6K,ISDN,V.90 |
| (904)445-8216 | Palm Coast | FL | 33.6K,ISDN,V.90 |
| (904)491-0939 | Fernandina Beach | FL | 33.6K,ISDN,V.90 |
| (904)752-6858 | Lake City | FL | 33.6K,ISDN,V.90 |
| (904)808-7328 | St Augustine | FL | 33.6K,ISDN,V.90 |
| (941)337-4228 | Fort Myers | FL | 33.6K,ISDN,V.90 |
| (941)362-4985 | Sarasota | FL | 33.6K,ISDN,V.90 |
| (941)429-0100 | North Port | FL | 33.6K,ISDN,V.90 |
| (941)746-8563 | Bradenton | FL | 33.6K,ISDN,V.90 |
| (941)948-8260 | Bonita Springs | FL | 33.6K,ISDN,V.90 |
| (954)486-4806 | Fort Lauderdale | FL | 33.6K,ISDN,V.90 |

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