Exhibit No:
Issues: Switched Access, Special Access, SS7 and LIDB
Witness: Sandra Douglas
Type of Exhibit: Direct Testimony
Sponsoring Party: Southwestern Bell Telephone Company
Case No: TO-2001-467

SOUTHWESTERN BELL TELEPHONE COMPANY

CASE NO. TO-2001-467

DIRECT TESTIMONY

OF

SANDRA DOUGLAS

Dallas, Texas
June 28, 2001

NP

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Investigation of the State of Competition in the Exchanges of Southwestern Bell Telephone Company.	)	Case No. TO-2001-467

AFFIDAVIT OF SANDRA M. DOUGLAS

STATE OF TEXAS)
) SS
CITY OF DALLAS)

I, Sandra M. Douglas, of lawful age, being duly sworn, depose and state:

1. My name is Sandra M. Douglas. I am presently Area Manager - State Access for Southwestern Bell Telephone Company.
2. Attached hereto and made a part hereof for all purposes is my direct testimony.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Sandra M. Douglas

Subscribed and sworn to before this 12th day of June, 2001.

K Diane Cooper
Notary Public

My Commission Expires: 8-10-03

K. DIANE COOPER
MY COMMISSION EXPIRES
August 10, 2003

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CASE NO. TO-2001-467
SOUTHWESTERN BELL TELEPHONE COMPANY
DIRECT TESTIMONY OF SANDRA DOUGLAS

INTRODUCTION

Q. What is your name and business address?

A. My name is Sandra Douglas. My business address is 311 S. Akard, Dallas, Texas.

Q. By whom are you employed and what is your current position?

A. I am employed by Southwestern Bell Telephone Company ("SWBT"). My current title is Area Manager – State Access Issues and I am responsible for monitoring state access issues for Arkansas, Connecticut, Illinois, Indiana, Kansas, Michigan, Missouri, Nevada, Ohio, Oklahoma, Texas and Wisconsin.

Q. Have you prepared a schedule that provides information regarding your employment and educational background?

A. Yes. Both my employment history and educational background are provided in Schedule 1.

Q. Have you previously testified before this Commission?

A. No. However, I have testified before the Connecticut Department of Public Utility Control in a docket concerning The Southern New England Telephone Company's Switched Access charges.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to discuss the competitive landscape surrounding SWBT's Special Access, Switched Access, Common Channel Signaling/Signaling System 7 ("SS7") and Line Information Database ("LIDB") services filed in SWBT's Tariff PSC Mo – No 36. Moreover, I will show that there are several forms of "non-traditional" access competition that are outside the jurisdiction of the Missouri Public Service Commission ("Commission"), but should nonetheless be considered real forms of competition. My testimony will demonstrate that the Commission should elect to move SWBT toward regulatory parity with SWBT's competitors by confirming that Special Access, Switched Access, SS7 and LIDB services face effective competition.

Q. What products and services will you be discussing in your testimony?

A. I will be addressing SWBT's Special Access, Switched Access, SS7 and LIDB services.

Q. Please briefly describe Special Access service.

A. Special Access service includes a number of separate services sharing common characteristics. The major characteristic of Special Access is it is a dedicated non-switched service used to connect one or more end user

customer premises with an interexchange carrier's ("IXC's") location, which is referred to as a point of presence ("POP"). Special Access services connecting one customer location to an IXC are referred to as point to point configurations, whereas Special Access services connecting multiple end user locations with an IXC via a hub are referred to as a multi-point configuration. Special Access services are used to carry voice and data applications and, at higher speeds, video.

SWBT offers eight categories of Special Access services in Tariff PSC Mo – No 36. These are metallic, telegraph grade, voice grade, wideband analog, wideband data, MegaLink Data (DS1), High Capacity (DS3) and DovLink.

A more detailed description of Special Access service is provided in Schedule 2.

Q. Please briefly describe Switched Access service.

A. Switched Access service enables IXCs to provide long distance service to end users by connecting to SWBT's network. There are three major components in Switched Access service. They are common line, local switching and transport.

Common line refers to the line between an end user's home or business and SWBT's end office serving that customer.

Local switching refers to the end office functions necessary to originate or terminate a long distance call.

Transport refers to the facilities required to carry the call from SWBT's end office to the IXC's serving wire center. Transport may be tandem routed or directed routed. Tandem routed transport occurs when an IXC has chosen to route traffic from the IXC's serving wire center to a SWBT end office via an access tandem instead of directly routing to SWBT's end office. Direct routed transport occurs when an IXC has chosen to route traffic from the IXC's serving wire center directly to SWBT's end office.

An IXC can choose from three types of Switched Access service. These are referred to as:

- Feature Group A ("FGA");
- Feature Group B ("FGB"); and
- Feature Group D ("FGD").

A more thorough description of Switched Access service is provided in Schedule 3.

Q. Please briefly describe SS7 service.

A. SS7 provides a dedicated two-way signaling path between a customer and SWBT's Signal Transfer Point ("STP") and provides access to SWBT's SS7 network. Where available, SS7 signaling is used with Switched Access FGD service to carry the signals associated with a call on a transmission path that is separate from the path of the call. In addition, SS7 is utilized to access SWBT's LIDB and Switched Access 800 Number Portability Access Service ("NPAS"). There are four rates associated with SS7 service: STP Access Connection, STP Access Link, STP Port Termination and the Customer Signaling Point Code[1].

Q. Please briefly describe LIDB service.

A. LIDB provides the customer the ability to query billing validation data in SWBT's database in support of alternate billing services, such as calling card, collect and third number billing. Alternate billing services allow telecommunications companies to bill calls to an account that might not be associated with the originating line. There are two charges associated with LIDB. One charge is designed to recover the costs of the query and the other is designed to recover the costs of transporting the query[2].

[1] P.S.C. Mo. No. 36, section 20.
[2] P.S.C. Mo. No. 36, section 21.

GENERAL OVERVIEW OF THE COMPETITIVE MARKET

Q. Has the Commission previously found any of SWBT's Special Access services to be competitive?

A. Yes. Pursuant to Section 392.370.1 RSMo, in Case No. TO-93-116 the Commission determined SWBT's Megalink Data and High Capacity services were transitionally competitive. As explained more fully in Mr. Hughes' testimony, SWBT agreed to extend the transitionally competitive designation to January 10, 1999. Under Section 392.370.1 RSMo these Special Access services were automatically classified as competitive on January 10, 1999, the end date of the transitionally competitive classification. In this proceeding, SWBT requests that the Commission confirm that all Special Access services have a competitive classification.

In addition, Section 392.200.8 RSMo allows SWBT to utilize customer specific pricing ("CSP") on Special Access services, which further indicates the state legislature recognized Special Access service is sufficiently competitive to allow SWBT pricing flexibility.

Q. Please describe the types of competition that exist for SWBT's Switched Access and Special Access services.

A. As described in the direct testimony of Mr. DeHahn, competition for non-switched dedicated services began developing in the 1980s. Over the past almost twenty years, this competition has become well established.

Based on information available today, it is clear there continues to be numerous types of competition for Switched Access and Special Access services, many of which completely bypass the portions of SWBT's traditional network used to provide access. These are:

- Facilities based competitive local exchange carriers ("CLECs") which own or lease their own transport facilities;
- Switched based CLECs which own their own end office equivalent switch;
- Interconnection trunks which enable the CLEC to interconnect with an IXC to provided Switched Access and/or Special Access services;
- Unbundled Network Elements ("UNEs") which are used in conjunction with the CLECs' equipment to enable the offering of service;
- UNE-Platform ("UNE-P"), which is a subset of UNE, and allows CLECs to charge IXCs Switched Access to originate and terminate long distance calls to the CLECs' end users without providing any equipment to provide end to end service;
- Alternative transport providers which sell the equivalent of Switched Access transport and Special Access directly to CLECs, IXCs, etc.;
- IXCs that provide their own Special Access connections to end user customers;
- Providers of collocation hotels which connect IXCs, CLECs and large end users via a fiber ring either owned by the provider or leased from a fiber provider;

- Private networks owned by network providers or large businesses themselves that provide connectivity to IXC POPs;
- Wireless provider plans which offer unlimited regional and nationwide long distance calling; and
- the Internet which allows end users the ability to communicate via email, Voice over Internet calling or an Internet based Virtual Private Network ("VPN"), all of which are exempt from access charges.

Lastly, the pricing structure in place for SWBT's Switched Access local transport rates provides an incentive for customers to look to alternative transport providers for the transport piece of Switched Access service (i.e., the transport of calls between the end user's end office and the IXC's serving wire center). Unlike SWBT, competitors can provide transport on a flat-rated basis[3] thereby allowing customers to reduce their average transport minute of use ("MOU") cost by directing the maximum amount of traffic over a single trunk.[4]

Q. Are all of the competitive alternatives to SWBT's access services subject to oversight by this Commission?

[3] Report and Order, In the Matter of Southwestern Bell Telephone Company's tariff sheets designed to restructure local transport rates, Case No. TR-95-342, Effective March 16, 1996, in which the Commission rejected SWBT's filing because the Interconnection Charge was not cost supported.

[4] MO PSC's CLEC Applications, Tariffs and Interconnection Agreements, section 3.40, "the Commission has approved tariffs of competitive local exchange carriers who do utilize local transport restructuring".

A. No. There are many forms of access competition that are not regulated by the Commission. One non-traditional form, which is outside of the Commission's purview, is large, end-user businesses that have established their own private networks. In developing their own networks, large end users can connect directly to an IXC and bypass SWBT's network. In doing so, SWBT does not charge access charges, switched or special, to the IXC.

Wireless providers, Internet service providers and suppliers of collocation hotels are not required to file tariffs with this Commission and may price their service in any manner the market dictates.

Q. Please describe the CLEC facilities-based competitive market for Switched Access usage service.

A. As shown in Mr. Arvin's direct testimony, there are approximately 31 facilities-based CLECs which have service areas within SWBT's Missouri service area. Facilities-based CLECs may bypass part or all of SWBT's Switched Access service to originate and terminate long distance calls using facilities it owns or has leased from another carrier. Another type of facilities-based competition involves purchasing SWBT's UNE-P services. UNE-P enables a CLEC to provide local service to end users customers and includes the right to receive access on interexchange calls to or from the CLEC's customers. The CLEC in turn is allowed to charge the IXC its

equivalent of SWBT's Switched Access charges or may choose another rate structure.

The Association for Local Telecommunications Services ("ALTS"), which is an industry association whose mission is to promote facilities-based telecommunications competition, issued its annual report, *The State of Local Competition 2001*, in February of this year[5]. ALTS reported there were "almost 1,000 voice switches[6] in operation as of 3Q00"[7]. According to the National Exchange Carrier Association ("NECA") Tariff FCC No. 4 which was effective May 1, 2001 several competitors within Missouri have been assigned Common Language Location Identifier ("CLLI") codes and indicate they are capable of providing FGA, FGB and/or FGD (1+ dialing). Therefore, in addition to providing alternatives for local service, CLECs are able to provide and charge for the equivalent of SWBT's local switching charge. Schedule 5 is a list of CLECs from NECA's Tariff FCC No. 4 that have a CLLI code and provide one or more of the Switched Access feature groups. Schedule 6, which is being filed as highly confidential, lists the CLECs that have purchased UNE-P services from SWBT and the exchange in which each CLEC is providing facilities based UNE-P service.

Q. Please describe the CLEC facilities-based competitive market for

[5] See Schedule 4.
[6] Voice switches also have the ability to do data.
[7] See Schedule 4, page 24.

Switched Access transport and Special Access services.

A. As previously stated, there are approximately 31 facilities-based CLECs which have service areas within SWBT's service area in Missouri. Facilities-based CLECs may bypass part or all of SWBT's Switched Access transport service to originate and terminate long distance calls, in addition to providing Special Access service.

If you compare ALTS's list of network members to the Commission's list of CLECs operating in Missouri several of the same names appear on both lists. For example, 2nd Century Communications, Inc., Birch Telecom of Missouri, Inc., Gabriel Communications of Missouri, Inc. (NuVox), KMC Telecom III, Inc., and McLeod USA Telecommunications Services are all listed as facilities based providers that offer service throughout Missouri.

In addition to providing alternatives for local service, CLECs are able to provide and charge for Switched Access transport and Special Access. These CLECs also have the option of interconnecting with an IXC or an alternative access provider to completely bypass SWBT's network and can act as a reseller for other CLECs. For example, AT&T offers physical network interconnection arrangements in section 10 of its Tariff PSC Mo No 14.

Another type of facilities based competition is based on collocation.

Collocation refers to a carrier placing equipment in SWBT's EOs that enables the origination and termination and/or transport of switched end users' local and long distance calls, as well as dedicated non-switched services. Collocated CLECs are free to choose which services they wish to offer. In fact, one of the fastest growing areas is broadband, which enables the provisioning of end-to-end Internet service. ALTS reported that as of 3Q00 data local exchange carriers ("DLECs")...led the way in central office collocations"[8] in 2000.

Q. Please describe other forms of facilities based competition which compete with Switched Access transport and Special Access services.

A. There are several forms of alternative transport. These are:

- metropolitan fiber rings;
- collocation hotels;
- collocation and interconnection; and
- satellite.

Q. Please describe the Switched Access transport and Special Access competition from metropolitan fiber rings.

A. There are several operational or planned local fiber network providers in

[8] ALTS Report, *The State of Local Competition 2001*, page 35.

Missouri. Table 6 of the Competition for Special Access Service, High Capacity Loop and Interoffice Transport (Special Access Report)[9] shows Metromedia Fiber Networks, American Fiber Systems and Telseon are wholesale fiber suppliers in St. Louis; American Fiber Systems is a wholesale fiber supply in Kansas City; and Looking Glass has received approval from the Commission to operate as a public utility in Missouri and to offer facilities that enable the bypass of SWBT's Switched Access transport and Special Access services. Metropolitan fiber rings can be comprised of dark fiber or fiber that is equipped with the electronics necessary to light the fiber. For example, as shown in Schedule 7, American Fiber Systems is an independent provider of dark fiber for carriers and service providers in mid-sized U.S. cities states and will "design, build, lease and maintain high-capacity, high-bandwidth dark fiber-optic networks...completely connected to a city's most important points of communications presence". These communications points of presence include ILECs, CLECs, wireless providers, cable companies, large end users, ISPs and IXC "carrier hotels". These types of networks are in a position to completely bypass SWBT's network.

In addition to selling dark fiber, companies, such as Looking Glass, plan to develop metropolitan rings using their own fiber that will provide transport

[9] United States Telecom Association ("USTA") comments submitted to the FCC on April 5, 2001, In the Matter of Implementation of the Local Compensation Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98.

and collocation to other carriers and large business customers. Looking Glass is able to do this by also providing the optical electronics necessary to light the fiber. In addition to owning its own network, Looking Glass will interconnect with SWBT via collocation and Unbundled Network Elements ("UNEs")[10].

Companies such as Looking Glass enable collocators, IXCs, ISPs, large end users, wireless providers and collocation hotels to interconnect with each other without utilizing SWBT's network.

Q. Please describe the Switched Access transport and Special Access competition from competitors' collocation offerings.

As shown on Schedule 5, several CLECs offer Switched Access transport and Special Access collocation, both physical and virtual, as well as route diversity. These CLECs may have built their own networks or leased a portion of another's network, but in either case, are able to bypass SWBT's Switched Access transport and Special Access services.

Q. Please describe the Switched Access transport and Special Access competition from collocation hotels.

A. Missouri has seen an increase in the number of alternative collocation

[10] Information obtained for Looking Glass Networks, Inc. from website www.lglass.net.

providers, which are also referred to as collocation hotels. Collocation hotels facilitate bypass of SWBT's Switched Access transport and Special Access networks by providing a single location for IXCs, CLECs, wireless providers, ISPs and large end users to interconnect. As of April 5, 2001 Axon Telecom ("Axom"), E-COLO.com and Layerone had operational collocation hotels in the St. Louis area and Axon and E-COLO.com had operational collocation hotels in the Kansas City Area[11]. Schedule 8 and Schedule 9 provide maps downloaded from Axon's website that show the area of coverage in the St. Louis and Kansas City metropolitan areas, respectively.

Q. Please describe the Switched Access transport and Special Access competition from interconnection.

A. Another item contributing to competition in Missouri are interconnection trunks used by facilities-based CLECs to connect their switching facilities to SWBT's EOs or tandem. Interconnection trunks can be used to bypass SWBT's switched and non-switched services.

Q. Please describe the Switched Access transport and Special Access competition from satellite.

A. Satellite technology is used as an alternative transport medium for broadband. For example, it enables delivery of high-speed access to

[11] Schedule 2 of USTA's Special Access Report.

IXCs' points of presence and direct access to large end users, thus bypassing SWBT's network.

Q. To whom are these various alternative transport providers marketing?

A. Although SWBT does not know the details of each competitor's marketing plans, SWBT did find the target audience for selected alternative transport and collocation hotels was end users, IXCs, wireless carriers and other CLECs, all of whom are potential customers for SWBT's Switched Access transport and Special Access services. (See Schedule 10.)

Q. Can you provide examples of these marketing efforts?

A. Schedule 11 provides copies of Looking Glass's solicitation for lists of buildings and property owners; Telseon's promotion that is available until June 30, 2001; an article describing Yipes's marketing efforts and a March 6, 2001 article announcing Telseon's plans to expand service to long-haul carriers. Schedule 11 also contains an article which was carried in the January 11, 2001 St. Louis Post Dispatch that discusses MCI/WorldCom's plan to build a network services facility in St. Louis. The city of Overland approved $80 million in taxable industrial revenue bonds to finance the project.

Q. Please describe how wireless service offerings compete with Switched Access transport and usage.

A. Wireless carriers have begun to offer free and flat rated regional and nationwide long distance calling which provides an incentive to end users to use their wireless phones to complete long distance calls. When cellular phones are used to complete calls that would be interLATA in nature on a landline, SWBT's Switched Access minutes of use are reduced. As more and more cellular plans offer nationwide coverage, SWBT's Switched Access minutes of use will continue to be eroded.

Q. Please describe how Voice over IP offerings compete with Switched Access transport and usage.

A. In paragraph 345 of the *Access Reform Order*[12] the FCC reaffirmed its decision that Internet Service Providers ("ISPs") should continue to be exempt from access charges. As technology has improved, ISPs are able to transmit voice calls over the Internet, as well as video free from Switched Access charges. In addition, ISPs' end users are able to use e-mail to communicate rather than making a long distance call. For example, I regularly communicate with my family and friends in St. Louis via the Internet rather than call long distance. And e-commerce allows end users to conduct transactions over the Internet rather than calling a

[12] First Report and Order, In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing and End User

business's order center. I regularly use the Internet to make purchases and check account balances rather than calling an 800 number.

Specific examples of Voice over IP offerings, which are provided in Schedule 12, are:

- Net2Phone announced the launch of its broadband voice technology and services designed to bring IP telephony access over cable, DSL and DS1 while bypassing the end user's personal computer entirely on June 6, 2001;
- Dialpad, which is listed as an ISP in Missouri, states it has terminated over 1.6 billion MOUs since its launch in 1999;
- Cisco launched several new IP telephony products in April 2001; and
- This month Intel will release an IP telephony product that allows IP phones to be connected to a PBX.

Q. Please describe the types of competition that exist for SS7 and LIDB.

The competition for SS7 and LIDB is also significant. For example, Illuminet offers SS7 signaling connectivity on a nationwide basis as well as nationwide transport of SS7 messages. TSI Telecommunications Services Inc. offers both SS7 and LIDB on a nationwide basis; and IDN, LLC offers SS7 and LIDB transport, as well as 800 transport. Schedule 13 provides more detailed information on these three competitors.

Common Line Charges (*Access Reform Order*), CC Docket Nos. 96-262, 94-1, 91-213 and 95-

SWITCHED ACCESS USAGE AND TRANSPORT COMPETITION

Q. Are CLEC's Switched Access rates in SWBT's exchanges capped at SWBT's rates?

A. Yes. Section 3.40 of the PSC's CLEC Applications, Tariffs and Interconnection Agreements[13] states the following:

> "Rates for Switched Access services are required to be "cost based". Pursuant to Case No. TO-99-596, intrastate Switched Access rates in Missouri are capped at a rate no higher than the incumbent(s)..."

Q. Are CLEC's required to match SWBT's Switched Access rate structure?

A. No. According to Section 3.40 of the Commission's CLEC Applications, Tariffs and Interconnection Agreements[14], CLECs are not required to mirror ILECs' Switched Access rate structures. Specifically the Commission's rules state:

> ILECs "in Missouri have not restructured local transport and do not use rate elements such as interconnection charges and entrance facilities. However, the Commission has approved tariffs of competitive local exchange carriers who do utilize local transport

72, released May 16, 1997.
[13] See Commission's website – Application for certificate of service authority for CLEC service.
[14] Id.

restructuring. In such instances, the Staff will make calculations to ensure that the competitor's restructured rates are no greater in the aggregate than an incumbent's rates utilizing the equal charge method of providing Switched Access. In such instances the Staff will question any competitive rate element which appears to be residually priced."

Schedule 14 compares SWBT's Switched Access rates and structure to several CLEC tariffs.

CONCLUSION

Q. Please summarize your testimony.

A. SWBT's Switched Access, Special Access, SS7 and LIDB services face numerous forms of competition from other companies which provide services that are substitutable for or functionally equivalent to SWBT's Special Access, Switched Access, SS7 and LIDB services. Therefore, these SWBT services should be designated as competitive and removed from Missouri's price cap regulation. The most significant competition is in the metropolitan areas, which have already seen the establishment of alternative transport via metropolitan fiber rings, collocation hotels, numerous competitive facilities based providers, and service offerings via viable network alternatives.

Furthermore, under the rules that existed prior to price cap regulation in Missouri, some of SWBT's Special Access services became competitive in 1999. In addition, Missouri statute permits CSP pricing for Special Access services. Special Access service is clearly competitive and when SWBT offers such service, it should enjoy the same freedoms as those experienced by competitors.

Q. Does this conclude your testimony?

A. Yes it does.

SUMMARY OF EMPLOYMENT AND EDUCATIONAL BACKGROUND

Q. PLEASE OUTLINE YOUR WORK EXPERIENCE AT SWBT.

A. In 1979 I accepted the position Staff Assistant-Cost Studies and in 1981 the position of Staff Manager-Cost Studies where I assisted in the preparation of cost studies for special assembly requests and vintage PBX systems, respectively.

In 1983 I was appointed Manager-Rates and was responsible for developing SWBT's initial local transport rates filed with the Federal Communications Commission (FCC).

In 1985 I was appointed Manager-Separations where I was responsible for traffic studies for the state of Missouri.

In 1988 I was appointed Manager-Rates and was responsible for developing the local switching rates for SWBT's annual rate of return filing with the FCC. Subsequent to the introduction of price cap regulation I assumed responsibility for development of cost and rate support for new switched access services, including LIDB, SS7, 800 Database and Open Network Architecture (ONA).

In 1995 I was appointed to the position of Area Manager-Product Management where I was responsible for FGA services.

In 1996 I was employed by GTE Long Distance (GTE LD) where I was responsible for developing and conducting variance analysis on GTE LD's cost budget regarding access services. In addition, I supported contract negotiations with potential vendors supplying underlying service.

In 1997 I was again employed by SWBT as Area Manager-Rates responsible for the federal price cap filings for SWBT, Pacific Bell Telephone Company, Nevada Bell Telephone Company and for federal switched access tariff filings. In September 1999 responsibility for the federal switched access tariffs were moved to another position and I accepted the additional responsibility of federal price cap filings for The Southern New England Telephone Company and the Ameritech Operating Companies.

In October 2000 I was appointed to my current position, Area Manager-State Regulatory.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I received a Bachelor of Science Degree in Accounting from Maryville University, St. Louis, MO in December 1994. I completed the Uniform Certified Public Accounting (CPA) examination in May 1995. I am currently a member of the Missouri Society of Certified Public

Accountants. Additionally, I have attended numerous training courses and seminars since my employment at Southwestern Bell Telephone Company (SWBT) in the areas of accounting, cost development, computer software, separations and federal regulations.

SPECIAL ACCESS SERVICE

Special access service is a dedicated service, which can be used to connect two end user locations (point to point) or to connect multiple end user locations (Multipoint). In access one point in a point to point connection or a Multipoint location will be and interexchange carrier's ("IXC's") location, which is referred to as a point of presence ("POP").

The point to point or Multipoint connection is used to carry voice and data applications. As the voice or data traverse the network, SWBT does not interact with the voice or data. In other words, a customer's special access service is similar to a pipe and voice or data travels through the pipe with no intervention by SWBT.

At the end user's location in a point to point circuit or at multiple locations in a Multipoint arrangement, the customer provided equipment is located for the purpose of shipping the information or receiving the information.

Special access connections can be either analog or digital. Analog connections are differentiated by spectrum and bandwidth. Digital connections are differentiated by bit rates. The basic services are called:

- Metallic
- Telegraph
- Voice Grade

- Wideband Analog
- Wideband Data
- MegaLink Data
- High Capacity
- DovLink

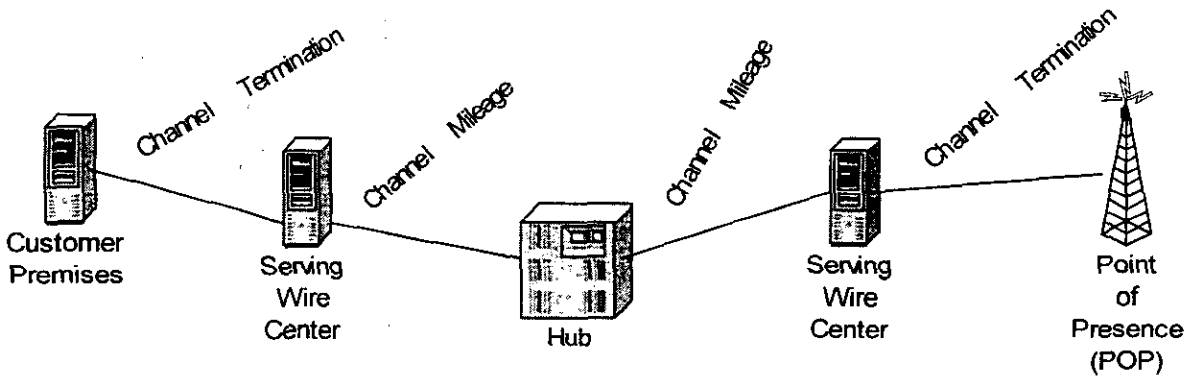
Each service consists of a basic channel, channel interfaces and optional features and functions.

Two-Point Service (Point to Point)

A two-point service connects one customer premises, either directly or through a Hub where multiplexing, Network Reconfiguration Service or Transport Resource Management Service functions are performed.

The following diagram depicts a basic point to point special access circuit.

Point to Point Special Access Circuit

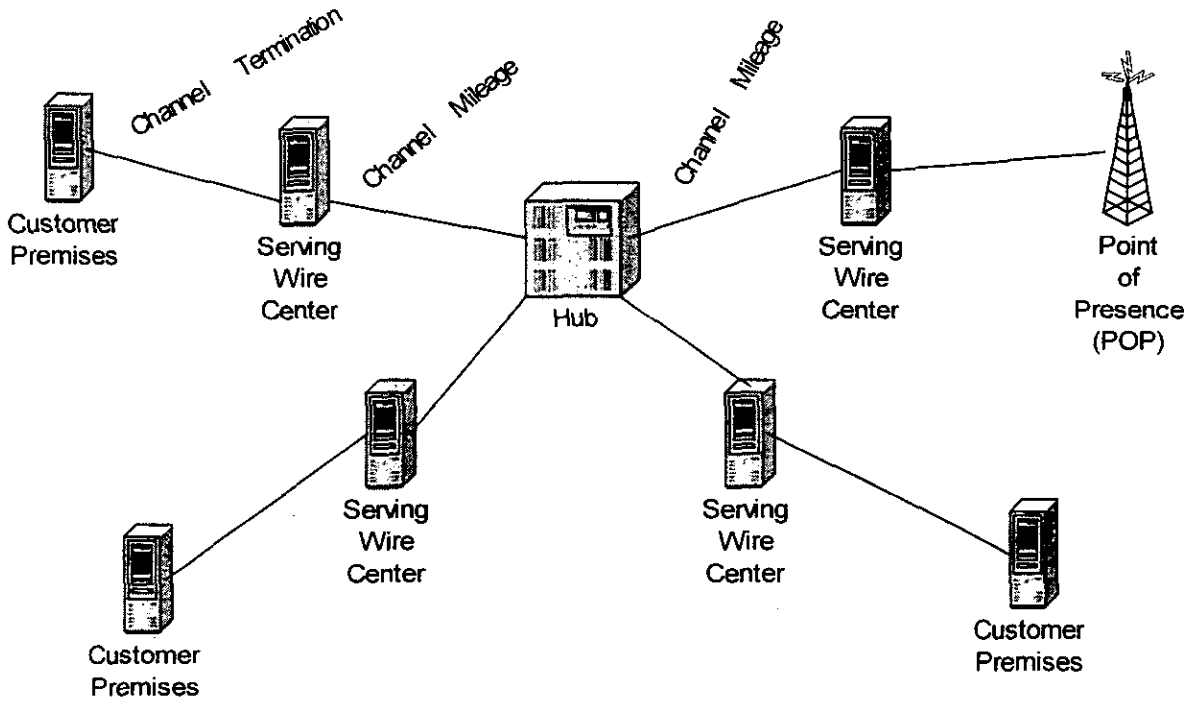


Multipoint Service

Multipoint service connects two or more customer premises with an IXC through a hub.

A simple diagram of a Multipoint service follows:

Multipoint Special Access Service



Metallic

A metallic channel is an analog channel, which is capable of transmitting data at rates up to 30 baud. Metallic channels are provided on a point to point basis or on a mutli point basis between an end user's premises and a hub. Metallic service has been used by customers for alarm, metering, supervisory control and signaling communications.

Metallic is not an option when interoffice facilities exceed five miles in length per channel or if a customer requires a transmission speed greater than 30 baud[1].

Telegraph

A telegraph grade channel is an analog connection that is capable of transmitting binary signals at rates up to 150 baud. Telegraph grade channels are provided on a point to point basis or on a Multipoint basis between an end user's premises and a hub. Telegraph grade service has been used by customers for teletypewriters, data, metering, supervisory control and signaling purposes.

Telegraph grade service is not an option if a customer requires transmission speeds greater than 150 baud[2].

Voice Grade

Voice grade service provides an analog two wire or four wire circuit to connect two or more locations. Voice grade service provides a 300 to 3000 Hertz bandwidth channel. Voice grade service is used by customers who want a few private voice lines between locations or customers who exchange large amounts of data between locations where speed, accuracy and reliability are not overriding considerations.

[1] P.S.C. Mo. No. 36, Section 7.2.1.
[2] P.S.C. Mo. No. 36, Section 7.2.2.

Voice grade service is not recommended if speed, accuracy or reliability of data are a primary concern. Voice grade service is not an option if a customer requires transmission speeds greater than 19.2 Kilobits per second[3].

Wideband Analog Service

Wideband analog service provides an analog channel with a bandwidth measured in kilohertz for the transmission of a wideband signal. The actual bandwidth is a function of the channel interface ordered by the customer[4].

Wideband Data Service

Wideband data service provide an analog channel for transmission of synchronous serial data at speeds up to 230.4 kilobits per second or asynchronous serial data at speeds up to 230.4 kilobits per second. The actual bit rate is a function of the channel interface selected by the customer. This service does require a specific piece of equipment, a 303 Data Station, to enable connection between the customer's equipment and the channel[5].

MegaLink Data Service (DS1)

MegaLink data channels provide for the duplex four-wire transmission of synchronous serial data up to 64 kilobits per second. The bit rate is a function of the channel interface selected by the customer. MegaLink data channels are

[3] P.S.C. Mo. No. 36, Section 7.2.3.
[4] P.S.C. Mo. No. 36, Section 7.2.5.
[5] P.S.C. Mo. No. 36, Section 7.2.6.

provisioned using SWBT provided timing. This service was classified as transitionally competitive by the Commission effective January 10, 1993[6].

DS1 service, which is also referred to as High Capacity service, is a 24 channel digital connection that can transmit at speeds up to 1.544 Megabits per second. A DS1 connection can be multiplexed down to 24 individual channels for use with Voice Grade Service. DS1 service can be provided on a point to point basis between two locations or between an end user location and a hub. DS1 service is a high performance service that is reliable and accurate. DS1 is used by customers to transmit voice, data and video.

High Capacity Service (DS3)

High capacity service provides for the transmission levels up to 44.736 megabits per second. The actual bit rate and framing format is a function of the channel interface selected by the customer. A high capacity facility can be multiplexed down to 28 DS1 channels or 672 circuits (28 DS1s * 24 channels). High capacity service can be used in a point to point connection or in a multi point connection between a customer premises and a hub and is used to transmit data, voice and video.

High capacity service also enables the provision of more advanced services such as Network Reconfiguration Service[7] or Transport Resource Management

[6] P.S.C. Mo. No. 36, Section 7.2.7.

Service[8]. Network Reconfiguration Service enables customers to reconfigure their dedicated networks by accessing a SWBT database. Transport Resource Management Service provides advanced customer network management capability by enabling customers to manage modify their bandwidth and multiplexing options via a workstation located on the customer premises or by calling SWBT directly.

This service was designated as transitionally competitive by the Commission on January 10, 1993[9].

DovLink Service

DovLink channels are provisioned to provide either synchronous or asynchronous data at speeds of 2.4, 4.8 or 9.6 kilobits per second. DovLink service is provided as a derived channel of a voice grade facility. The customer must provide a data voice multiplexer at its premises.

DovLink is provided where suitable facilities are available[10].

Hubbing and Multiplexing

SWBT has designated certain locations as hubbing locations. Hubbing is necessary for multipoint connections. Hubbing provides a centralized location for

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[7] P.S.C. Mo. No. 36, Section 19.1.
[8] P.S.C. Mo. No. 36, Section 19.2.
[9] P.S.C. Mo. No. 36, Section 7.2.8.
[10] P.S.C. Mo. No. 36, Section 7.2.9.

multiplexing or other features. Multiplexing allows a customer to convert a higher speed facility to a lower speed or a lower speed facility to a higher speed facility. For example, a customer may have MegaLink data channels (DS1s) from three different locations to the hub. At the hub location, these DS1s could be multiplexed up to a single high capacity service (DS3) for delivery to the interexchange carrier ("IXC"). Multiplexing also enable conversion of digital signals to voice frequency and visa versa.[11]

Shared Use

Shared use enables a customer to combine special access service and switched access service over the same facility through a common interface. The facility is ordered as special access service, such as high capacity service. The customer may then designated individual channels on the facility to be used for switched access service[12].

Rates and Charges

There are two types of rates applicable to special access service. These are monthly rates and nonrecurring rates. Monthly rates are assessed each month either on a one for one basis or on a per mile basis. Nonrecurring charges are one time charges that generally apply at the time of installation of the channel or the features or functions.

[11] P.S.C. Mo. No. 36, Section 7.3.7.
[12] P.S.C. Mo. No. 36, Section 7.3.8.

SWITCHED ACCESS SERVICE

Switched access refers to the line of services SWBT sells to interexchange carrier ("IXC") customers who wish to access SWBT's public switched network. It enables long distance calls to originate or terminate from an end user's premises.

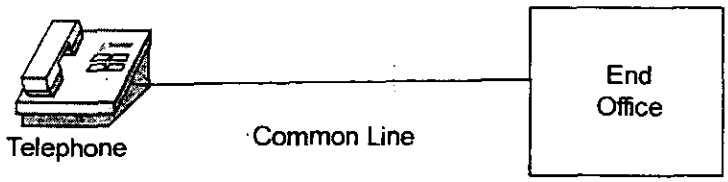
Switched access has four categories of service which are designated by feature group. Feature groups are differentiated by their technical characteristics and figures and how an end user accesses each of these services. The four categories of feature groups are: Feature Group A ("FGA") which is a line side connection; Feature Group B ("FGB") which a trunk side connection accessed via the 950 access code; and Feature Group C ("FGC") and Feature Group D ("FGD") which are both trunk side connections that allow 1+ dialing of long distance calls.

Switched access service has three major components. These are the common line, the end office and transport.

Common Line

The common line refers to the telephone connection between an end user's home or business and SWBT's end office ("EO").

A simple diagram of the common line and its relationship to the end office is depicted as follows:



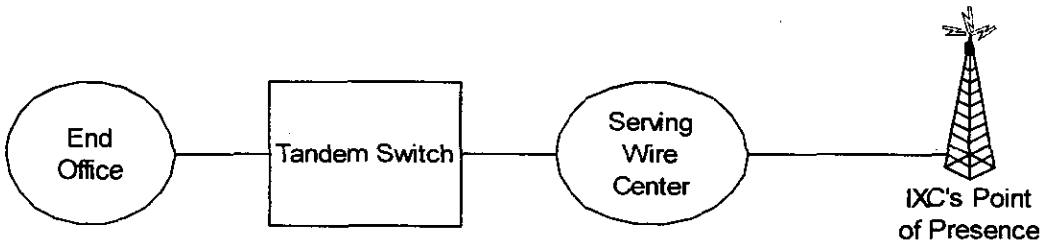
End Office

The end office refers to the functions required to originate or terminate a long distance call from or to an end user's line.

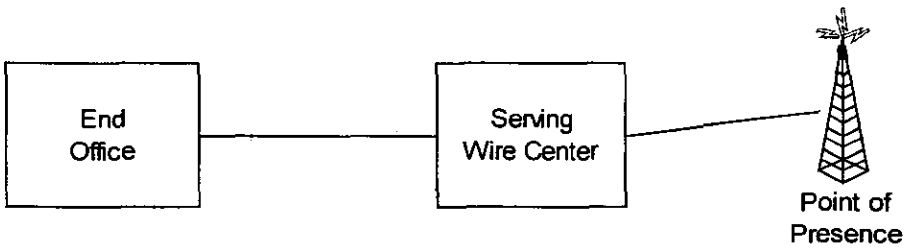
Transport

Transport refers to the network facilities required to route a call from the EO to an interexchange carrier ("IXC"). Transport is the mechanism used to move a call or move a customer's voice and data from point A to point B. Although the rates and charges assessed by SWBT for transport do not recognize the routing options available in SWBT's network, there are two types of transport - tandem routed transport and direct routed transport.

If a customer selects tandem routed transport SWBT will provision a trunk from the IXC's serving wire center to SWBT's tandem and another trunk from SWBT's tandem to the EO. A simple diagram *of tandem routed transport* is depicted as follows:



If a customer selects *direct routed transport*, SWBT provisions a trunk from the IXC's service wire center to SWBT's EO, which is illustrated as follows:



FGA

FGA service is a line side service that is associated with a seven digit telephone numbers[1]. FGA can be used to originate and terminate telephone calls.

The end user reaches an IXC by dialing the seven digit local telephone numbers associated with the FGA line. The IXC must designate which FGA office in the LATA from which SWBT should provision service.

[1] In those instances where ten digit dialing is required, the ten digit FGA number would have to be dialed.

FGB

FGB service is trunk side service which is used to provide Message Telecommunications Service ("MTS")-like service. FGB service is associated with a uniform access code. The access code is 950 and is similar to a NXX. Historically, FGB service was the trunk side service IXCs utilized until FGD service became available in an EO. FGB, which continues to be purchased, may be used to originate and terminate traffic.

FGC

FGC service was the predecessor to FGD service.

FGD

FGD service is a trunk side service which is used to provide MTS service to all IXCs in the same manner. It enables all IXCs to provide 1+ dialing for long distance calls to end users. The majority of switched access usage provided by SWBT is provided via FGD service.

Major Components of Switched Access Service

As stated previously, there are three major components:

- the Common Line;
- the End Office; and
- Transport.

The Federal Communications Commission ("FCC") established this basic structure when AT&T divested itself of the Bell Operating Companies ("BOCs"). This structure was adopted by the Commission. In the early 90s, the FCC did restructure transport into a combination of usage sensitive and flat rated charges. The new structure, referred to as local transport restructure, was never filed in SWBT's intrastate tariff. The continued use of usage sensitive rates for transport instead of the more cost based structure acts as an incentive for carriers to go to SWBT's competitors for transport.

Common Line

As previously stated, the common line, or local loop, is the wire that connects an end user's telephone to the telephone company's network, specifically, the EO. The Commission established the following rate structure for Carrier Common Line ("CCL"):

- CCL Premium Originating
- CCL Premium Terminating

These rates are assessed on a per minute of use ("MOU") basis and the tariff does distinguish between originating and terminating on an interLATA basis and an intraLATA basis.

The End Office

As stated previously, the end office ("EO") is the network point of origination or termination of calls. Every end user is connected to a single EO. EOs are

assigned NPAs (area codes) and NXXs. Each NXX can accommodate 10,000 lines (0000 to 9999). The combination of the NPA, NXX and line code is called a telephone number. For example, the NPA for this office is 214; the NXX is 858 and the line code is 2468, which produces a phone number of 214-858-2468.

Each end user must select a prescribed interexchange carrier (PIC) to allow for 1+ long distance dialing or the end user can choose to forego the convenience of 1+ dialing and not PIC a carrier. If an end user does not PIC a carrier, the end user then must use 10XXX plus the telephone number instead of 1+ the telephone number. In other words, more digits to dial.

Regardless of whether an end user has PICd or not PICd a long distance provider, the EO reacts the same. First, the end user picks up his telephone and begins dialing. As the end user is dialing, the EO is processing the digits dialed and determining where the call must go next in the telephone network.

If the call is to a different line served by the same EO, this is referred to as an intraoffice call, which is local and outside the scope of the intrastate access tariff. The EO recognizes the line being called is in the same location and simply attaches the two lines together.

If the call is to a line served by another EO that is within the local calling scope, the call is local and this is referred to as an interoffice call. The EO that serves

the originating end user recognizes the line being called is within the local calling scope and simply selects an outgoing trunk to the EO that serves the called end user.

If the call is a long distance call, whether it be a toll called served by a competitor or an intrastate, intraLATA call carried by an IXC, the EO checks to see if the originating line is prescribed or PICd. If the line is not PICd, the EO checks to see what the 10XXX code is. Upon determining the appropriate carrier, the EO forwards the call to an outgoing trunking that connects the originating caller's line with a long distance carrier's network.

If the call is incoming or terminating to an end user, the same functions have taken place but in the terminating direction the called end user's EO only needs to determine which line the call must terminate to.

The tasks being performed by the EO's -- translating the dialed number to enable it to be forwarded through the network; determining the line for termination of a call -- are referred to as switching. The call is switched from point to point within the network to enable a completed call. Hence the term switched access.

The Commission established the following rate structure for recovery of the end office function:

- Local Switching LS1 per MOU charge

- Local Switching LS2 per MOU charge

Transport

As stated previously, an IXC can choose either tandem routed or direct routed transport. Although the FCC has significantly restructured transport service, the SWBT's intrastate access tariff continues to reflect a per MOU structure. The per MOU charge is dependent on the mileage between the IXC and the end office. Currently, there are four mileage bands: 0 to1 miles, over 1 to 25 miles, over 25 to 50 miles and over 50 miles. In addition, an installation charge is assessed when an IXC orders new service.

Open Network Architecture ("ONA")

On May 8, 1990 the FCC issued its MO&O on Reconsideration, In the Matter of Filing and Review of Open Network Architecture Plans, CC Docket No. 88-2, Phase I. ONA was designed to unbundled the network. ONA was a new regulatory framework designed to govern BOC participation in the enhanced services marketplace and open up network-based opportunities for competing Enhanced Service Providers (ESPs)[2]. The new regulatory framework that the FCC is referring to is unbundled access. SWBT's intrastate access tariff does reflect the impact of ONA.

[2] See paragraph 2 of the MO&O, In the Matter of Filing and Review of Open Network Architecture Plans, CC Docket No. 88-2, Phase I, released May 8, 1990.

The analogy most often used during the time ONA was being implemented was a McDonald's Big Mac. The Big Mac is lettuce, pickles, onions, secret sauce and two all-beef patties on a sesame seed bun. One orders a Big Mac and McDonald's charges $2.00 (illustrative price). One orders a Big Mac with no onions and McDonald's charges $2.00. In other words, whether one orders the Big Mac that has everything on it or special orders the Big Mac without onions, McDonald's charges $2.00. This is bundled pricing and this is the same way bundled access works.

Using FGD as an example, assume a carrier orders FGD service. Under bundled local switching rates the carrier would expect to be charged LS2 premium rates for the local switching portion of switched access. The carrier is charged the same price as every other customer who orders FGD service, even if the carrier does not want all of the same features and functions as every other customer.

Back to the Big Mac...

Without the two all-beef patties, there would be no sandwich. Without the sesame seed bun, there would be no sandwich. Therefore, they are required ingredients of the sandwich. The FCC referred to these as Basic Serving Arrangements (BSAs). The lettuce, pickles and onions are not required components of a sandwich; therefore, they are Basic Service Elements (BSEs). Switched access is similar. For example, Automatic Number Identification

("ANI") is part of bundled FGD service. If a carrier does not want ANI, a special order must be placed but the carrier is still charged the bundled LS2 rate.

SWBT followed the FCC's logic most closely by actually naming the unbundled basic services as BSAs. For example, the unbundled version of FGA is BSA-and the unbundled version of FGD is BSA-D. Within the intrastate access tariff one will find the following rate elements in addition to bundled LS1 and LS2:

- Unbundled LS1 per MOU and
- Unbundled LS2 per MOU[3].

SWBT also offers BSEs. With the exception of features that were not previously available at the time of the ONA filings, most of the BSEs were unbundled from local switching.

As stated previously, local switching was the only real major rate element that was unbundled. Most of the features associated with transport were non-chargeable, therefore, very few BSEs were identified. The FCC found that special access was already unbundled sufficiently and required no additional unbundling.

OTHER FCC ACTIVITY IMPACTING SWITCHED ACCESS SERVICE

Local Transport Restructure

[3] P.S.C. Mo. No. 39, Section 6.11.2.

On October 16, 1992 the FCC issued its Report and Order and Further Notice of Proposed Rulemaking, In the Matter of Transport Rate Structure and Pricing, CC Docket No. 91-213. The FCC ultimately ordered the local exchange carriers ("LECs") to restructure transport. This is referred to as local transport restructure ("LTR").

The per MOU transport charge that had existed in the federal access charges was replaced by a combination of usage sensitive and flat rated elements. The Commission further differentiated between tandem routed and direct routed traffic.

If a carrier chooses direct routed transport, the applicable rate elements are:

- DS0 (Voice Grade), DS1 or DS3 switched access monthly recurring charges (MRCs) for the trunk between the SWC and EO
- DS0, DS1 or DS3 switched access mileage, as measured on the V&H[4] coordinates of the SWC and EO
- Entrance Facility MRC
- Multiplexer, if required

If the carrier chooses tandem routed transport, the applicable rate elements are:

- Tandem switching per MOU
- Tandem switched facility per MOU

[4] V = Vertical and H = Horizontal. Similar to longitude and latitude but on a smaller scale.

- Tandem switched facility per minute per mile; mileage measured according to the V&H coordinates of the EO and tandem or EO and SWC, depending on which billing option the carrier chose
- Residual Interconnection Charge (RIC)

As one may note from above, carriers ordering tandem switched transport were given the choice of two billing options at the time of the initial transport restructure. One option allowed tandem switching to be measured from the EO to the serving wire center. The other option, which was never ordered in SWBT prior to July 1, 1998, allowed carriers to be charged direct trunked transport from the tandem to the serving wire center and tandem switched transport from the EO to the tandem. The FCC stated very clearly that this two part structure was interim and would be revised. The *Access Reform Order* did exactly that.

Access Reform

On January 1, 1998 the FCC further refined the local switching recovery mechanism by establishing the EO ports in the *Access Reform Order*. The EO ports are either shared or dedicated. The rate elements available in SWBT's Tariff FCC No. 73 are:

- Shared EO Trunk Port per MOU
- Dedicated EO Trunk Port per month

In addition to establishing the EO trunk port rate elements in the *Access Reform Order*, the FCC also allowed establishment of a separate call set-up charge. Establishing a call set-up charge is similar to unbundling local switching. It is assumed that the interstate cost of setting up a call is already recovered in existing local switching rates. Therefore, if a company chooses to establish a distinct call set-up rate element, local switching should be reduced at an amount equal to the amount that will be recovered from the call set-up charge to ensure revenue neutrality. SWBT has not chosen to offer a separate call set-up charge at this time.

In the *Access Reform Order* the FCC order the LECs to eliminate the unitary rate structure. In English this means LECs could no longer offer carriers two billing options on tandem switched transport. The remaining option, which currently exists in all of the SBC Companies' federal access tariffs, charges the tandem switching rate elements from the EO to the tandem and the direct trunked transport rate elements from the tandem to the SWC.

In addition to eliminating the unitary rate structure, the *Access Reform Order* also incorporated additional restructuring. As with local switching, ports were unbundled from direct trunked transport and tandem switched transport. In addition, multiplexers at the tandem were unbundled. Lastly, the FCC determined that host/remote traffic, which was being handled differently by

different LECs should be assessed its own separate rate elements. This lead to the addition of the following rate elements in transport:

- Dedicated tandem trunk port;
- Shared tandem trunk port;
- Multiplexer;
- Host/Remote; and
- Host/Remote per minute per mile, measured based on the V&H coordinates of the host and remote locations.

The Association of Local Telecommunications Services (ALTS)

The State of Local Competition 2001

Extracted from ALTS's website.

SCHEDULE 4

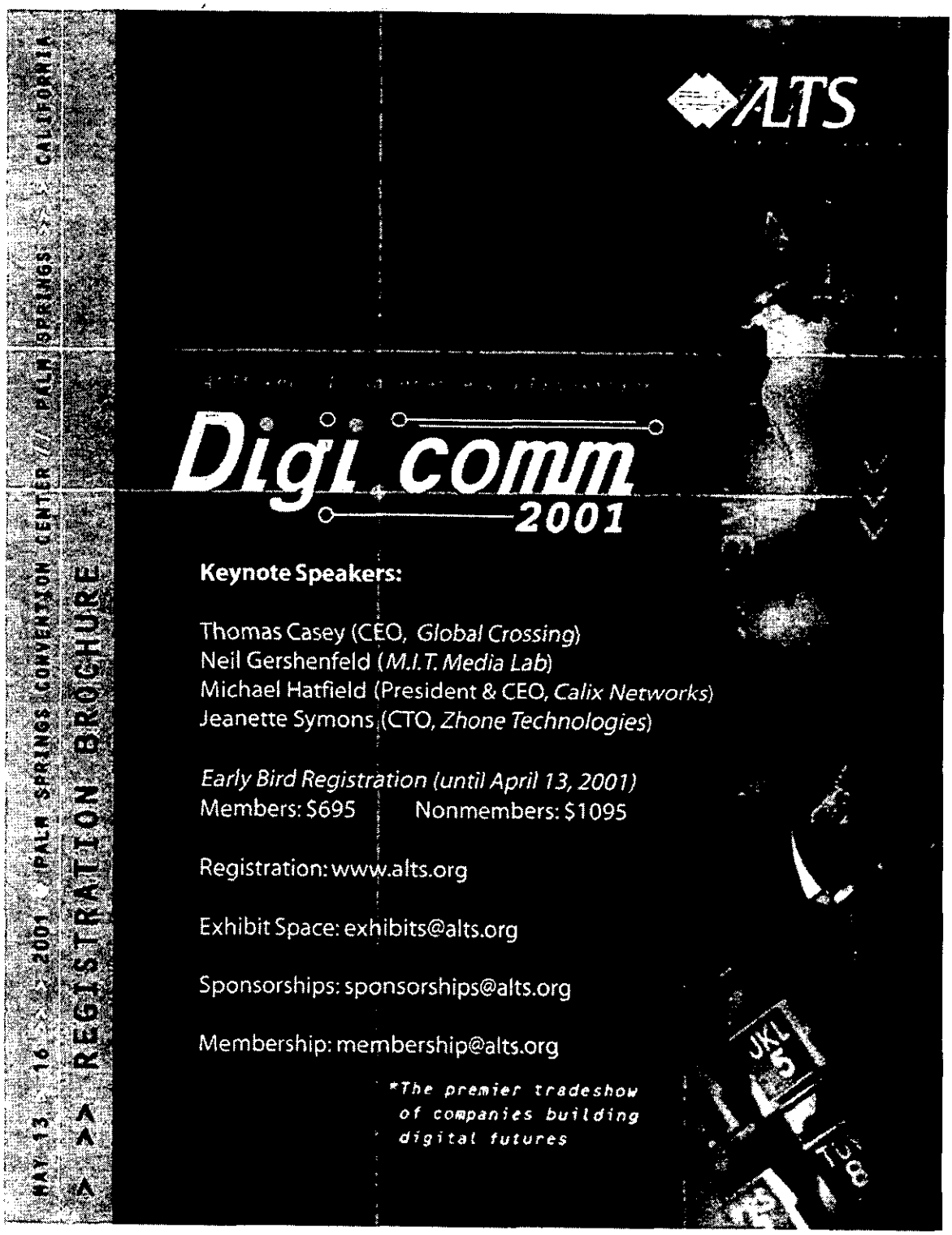
The State of Local Competition 2001

February 2001

The Association for Local Telecommunications Services

FOCAL

TSI



ZHONE

Lucent Technologies
Bell Labs innovations

ALTS' Annual Report on the State of the Local Telecom Industry, 2001

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ALTS *Association for Local Telecommunications Services*

Report Editor: David A. Wolcott

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ALTS *Association for Local Telecommunications Services*

Cover Art: DeLancey Printing

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Association for Local Telecommunications Services (ALTS)

ALTS is the leading national industry association whose mission is to promote facilities-based local telecommunications competition. Created in 1987, ALTS is headquartered in Washington, DC and now represents more than 200 companies that build, own, and operate competitive networks – CLECs that are facilities-based. ALTS was founded to harness the shared energy and vitality of the new local competitors and to help ensure that the 1996 Telecom Act is fully implemented and enforced.

Companies Building Digital Futures...

ALTS *Association for Local Telecommunications Services*

February 20, 2001

An Open Letter From John Windhausen, Jr.
President, ALTS

Re: **ALTS' ANNUAL MESSAGE ON THE STATE OF COMPETITION IN LOCAL TELECOMMUNICATIONS**

The competitive landscape in local telecommunications has changed dramatically for the better, and consumers are the big winners. For years, telecommunications consumers demanded new high-speed Internet connectivity, responsive customer service, and lower prices. In passing the Telecommunications Act of 1996, Congress answered the call by opening the local telephone market to competition and creating a new breed of telecommunications company, known as CLECs (Competitive Local Exchange Carriers).

Five years after the passage of the Act, the United States has reasserted its position as the world leader in communications and information technology. Our nation's longest economic expansion in history could not have happened as quickly without the faster, cheaper and more efficient technologies built by America's competitive local exchange carriers.

Substantial Evidence That The Act Is Working

Clearly, Congress had the right idea. The emergence of competition in the local telephone marketplace has generated enormous investment in new technologies and consumer services. Consumers are now beginning to enjoy unprecedented access to high-speed, low-cost Internet access services. Today, over one-half of the U.S. can now receive Digital Subscriber Line (DSL) service – the newest and cheapest broadband technology. Schools, small businesses and consumers are already taking advantage of this low-cost technology. Once the remaining barriers to competition are removed, residential consumers will find that high-speed Internet connections and competitive voice services will be as affordable and as easy to install as a telephone.

ALTS has assembled this second Annual Report on the State of Local Competition to document our tremendous progress since 1996. As the Report demonstrates, the competitive telecommunications industry has grown in almost every way imaginable – access lines, miles of new networks constructed, revenues, market share, and customers served. To highlight just one statistic, CLECs now claim over 8% of the local telecommunications market with over 16 million access lines in service.

The new competitive telecom companies have invested massive amounts of capital in new networks that have made access to the Internet faster and more reliable, helping to enable our 'New Economy'. These new local telecom companies have created almost 100,000 high-tech jobs and invested $56 billion in new infrastructure to serve the booming demand for voice and data services.

Challenges to the '96 Act Remain: Threats to Nascent Competition

Notwithstanding the tremendous progress made by CLECs, the competitive industry continues to face enormous challenges. The incumbent telephone companies continue to make it extremely difficult for competitors to interconnect with their networks, despite numerous federal and state orders requiring the ILECs to open their networks to competition. Furthermore, building owners often resist competitors' requests to provide broadband wireless and wireline services to commercial tenants and apartment-dwelling families. Finally, many cities make competitors' lives miserable by imposing enormous franchise fees and onerous regulations that are unnecessary and anti-competitive

Thus, despite our significant growth, competitors remain far behind the behemoth Bell Companies in revenues, customers, and lobbying resources. **The incumbent local exchange companies, the "ILECs", still serve about 92% of the local telephone market.** Rather than compete against each other outside their home territories, the Baby Bells have merged into even larger companies.

In short, while we have made great strides in serving the needs of consumers, we could have done so much more if the marketplace had been fully and irreversibly opened to competition. For these reasons, ALTS will focus in the coming year on opening the local market even further. We will begin by attempting to improve the level of cooperation from incumbent telephone companies, building owners and cities. We will continue to develop stronger ties with the consumers who demand our services and work together to remove the last remaining barriers to competitive service.

Looking Forward

A year from now, I hope to report significant progress on all these fronts. Ultimately, I believe the irresistible force of consumer demand – demand for the fruits of competition in telecommunications – will prevail over monopoly obstruction, which once appeared immovable. Our success in bringing competition to local markets will translate into tremendous benefits for every American and extend our nation's global leadership in telecommunications.

Sincerely,

John Windhausen, Jr.

John Windhausen, Jr.
President
ALTS

ALTS Network Members

2nd Century Comm.
Actel Integrated Comm.
Adelphia Business Solutions
Advanced Radio Telecom
Advanced TelCom Group
Allegiance Telecom
ALLTEL Communications
Arbros Communications
Avista Communications
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Broadslate Networks
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Broadwing
Cablevision Systems
Carolina Broadband
Cavalier Telephone
Cbeyond Communications
ChoiceOne Communications
CityNet Telecom
Comcast Telecommunications
Communications Design
Communications Products
CompleTel
Con Edison Communications
Connect Communications
Connect South
Conversent Communications
CoreComm Ltd.
Covad Communications
CTC Communications
DialTek
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Eagle Communications
Electric Lightwave
En-Touch Systens
FairPoint Communications
FBN Indiana
FiberNet Telecom
Florida Digital Network
Focal Communications
Gabriel Communications
Global NAPs
ICG Telecom Group
Intermedia Communications
IP Communications
KMC Telecom
Local Telephone Data Service
McLeodUSA
Metromedia Fiber Network
Network Access Solutions
Network One
Network Plus
Network Telephone
New Edge Networks
NewSouth Communications
North American Telecom
NorthPoint Communications
OpTel
Pac-West Telecomm
Pae Tec Communications
Penn Telecom
RCN
Reliant Energy HL&P
Rhythms NetConnections
SCC Communications
TalkingNets
TelePacific Communications
Teligent
TESS Communications
Time Warner Telecom
TXU Communications
Universal Access
US LEC
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Virtual Hipster Corporation
Western Wireless
Winstar Communications
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Access Lan
Accordion Networks
Adesta Communications
Advanced Fibre Comm.
Advanced Switching (ASC)
Alcatel
Allied Capital
Amber Networks
American Management Sys. (AMS)
AssetDepot.com
AterWynne LLP
Atlantic-ACM
B2B Connect
Beacon Networks
BizSpace, Inc.
Broadband Gateways
BroadSoft
Calix Networks
Casey, Gentz & Sifuentes
Cathey Hutton & Associates
Cisco Systems
Cole, Raywid & Braverman
COLO.com
Comdisco
CommTech Corporation
CompassRose International
Convergent Networks
Copper Mountain Networks
CopperCom
Coreon, Inc.
Corning, Inc.
Cygent
Daniels & Associates
Davis Wright Tremaine
Dickstein, Shapiro, Morin & Oshinsky
DSET Corporation
Dun & Bradstreet
Dynegy Connect
EDSL Networks, Inc.
Eftia-OSS Solutions, Inc.
Encompass Global Technologies
Ensemble Communications
Fiber Technologies
Fiberworks, Inc.
GE Capital Corp.
General Datacomm, Inc.
Geyser Networks
Henkels & McCoy, Inc.
Hitachi Telecomm (USA), Inc.
Holland & Knight LLP
HyperEdge
iMagicTV
IMCI Technologies
Innovative Systems
Intertech Management
Jenkens & Gilchrist
Jetstream Communications
John Staurulakis, Inc.
Katz, Kutter, Haigler, Alderman
Kelley Drye & Warren
LeBoeuf, Lamb, Greene & MacRae
Lemay-Yates Associates
LighTrade, Inc.
Linguateq, Inc.
LiveVault Corporation
Lucent Technologies
Lynch Associates
Macrologic, Inc.
Management Recruiters of Stamford
Mandl & Mandl LLP
Marconi Communications
Martin & Associates, Inc.
MaxBill
Mayan Networks
Media Venture Partners
MetaSolv Software, Inc.
NCH Communications
Network Engineering Consultants
Neustar
New Paradigm Resources Group (NPRG)
Nichols & Pena, LLP
NightFire Software
Norris, McLaughlin & Marcus, P.A.
Nortel Networks
Norwest Equity Partners
Nossaman Guthner Knox & Elliot LLP
OAN Services
Occam Networks
O'Keefe Ashenden Lyons & Ward
Parker Poe Adams & Bernstein
Pivotech Systems, Inc.
Pliant Systems, Inc.
Precision Software
PriceWaterhouseCoopers
Quintessant Communications
Ryan, Russell, Ogden & Seltzer
SALIX Technologies
Santera Systems
Schiff Hardin & Waite
Sedona Networks
Siemens ICN
Smith, Gambrell & Russell, LLP
Sonus Networks
Sphera Optical Networks, Inc.
Swidler & Berlin
Syndeo Corporation
Tachion Networks, Inc.
TD Madison & Associates
Technologies Management, Inc.
Tekelec
Telcordia Technologies, Inc.
Telica
Telsource Corporation
The Management Network Group
TollBridge Technologies, Inc.
Trendium, Inc.
TSI
Turnstone Systems
Tyco Electronics Corporation
Verizon
VINA Technologies
Vocal Data, Inc.
Vroom Technologies
Walters & Joyce, P.C.
Warren Morris & Madison
Willkie Farr & Gallagher
Yale Properties USA

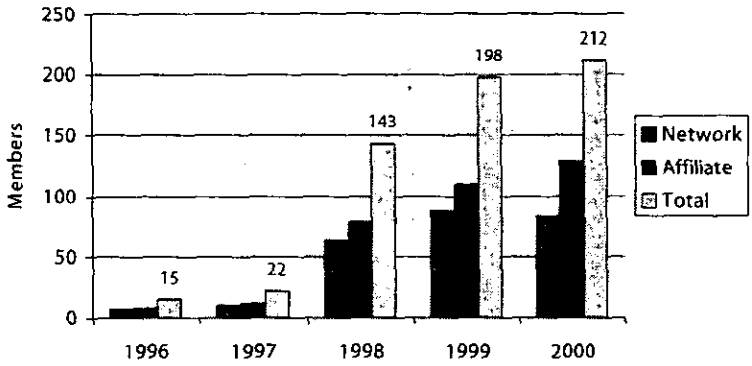
The CLEC Industry:
Metrics & Overview

The Association for Local Telecommunications Services

Companies Building Digital Futures...

ALTS Membership Trends

1996 - 2000



ALTS' membership 'took off' after the passage of the 1996 Telecom Act. However, CLEC consolidation, bankruptcies and insolvency are likely to cause a drop in ALTS' membership in 2001. ALTS expects membership to rebound in 2002 as the industry matures and as ALTS strengthens its membership outreach.

CLEC Industry Metrics

CLEC Access Lines: 16,162,223
Total U.S. Access Lines: 196,000,000
Market Share: 8.2%
Route Miles: 218,445
Buildings Served: 1,146,882
Voice Switches: 991
Data Switches: 2,071
Employees: 94,494

Source: New Paradigm Resources Group (NPRG); Credit Suisse First Boston (CSFB), FCC

Note(s): Facilities and employee data based on 3Q00 company reports. Employee total does not include ALLTEL, AT&T or WorldCom

Five years after the passage of the Act, CLECs now hold over 8% of all local access lines, up from 5.6% one year ago. Network route-miles, the infrastructure upon which the New Economy will depend, have increased from 78,506 in 1997 to over 200,000 miles today. Starting with just 331 data switches in 1997, CLECs now have over 2,000 installed as America enters the digital broadband age. Most notable is the CLEC investment in human capital with CLECs creating almost 100,000 skilled, high-tech jobs.

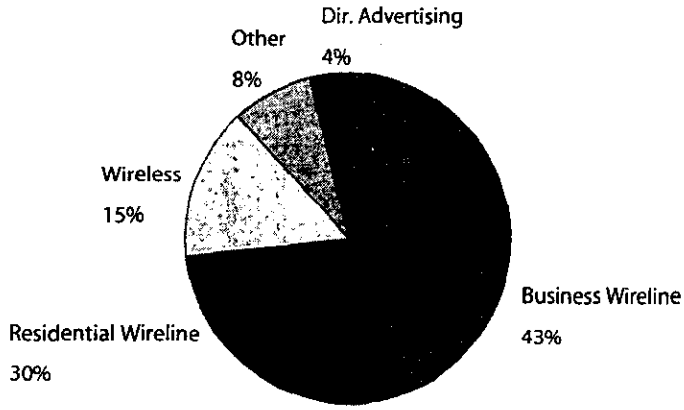
Association for Local Telecommunications Services

ALTS

Companies Building Digital Futures...

U.S. Communications Market

CLEC Addressable Market Opportunity



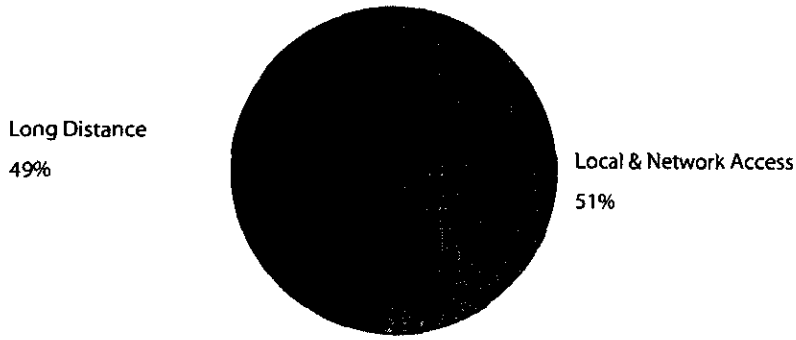
$285 Billion

Source: Bear Stearns

The U.S. communications market has seen remarkable growth since the 1984 divestiture and the passage of the 1996 Act. With the demand for communications more insatiable than ever, the U.S. market has reached a value of $285 billion today. High-volume business customers account for 43% of the market with residential users accounting for 30% of the market. Wireless, also a nascent industry, today accounts for 15% of the market.

U.S. Business Wireline Market

CLEC Addressable Market Opportunity



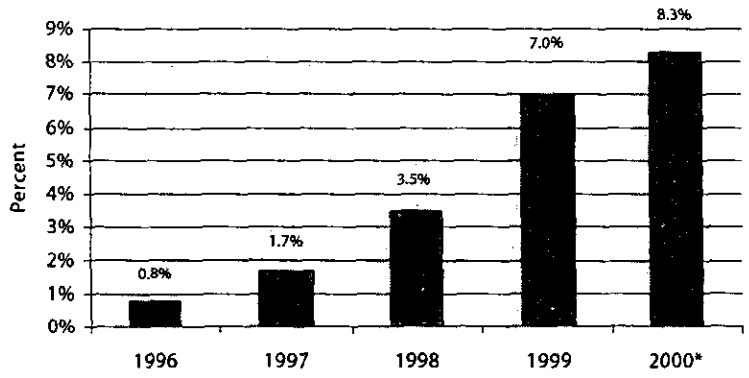
$122 Billion

Source: Bear Stearns

The business wireline market is one of the most attractive markets for many CLECs. To raise capital and build their networks, CLECs must target customers that offer the greatest rate of return. This strategy is consistent with how the Bell system originally erected its network, first to serve highly concentrated areas while letting independent telcos serve the more rural areas. Such high-volume clients enable CLECs to take advantage of geographic concentration and network scalability. As the industry matures, we will see a greater push into residential markets further expanding the benefits of competition.

Companies Building Digital Futures...

CLEC Market Share: Revenue

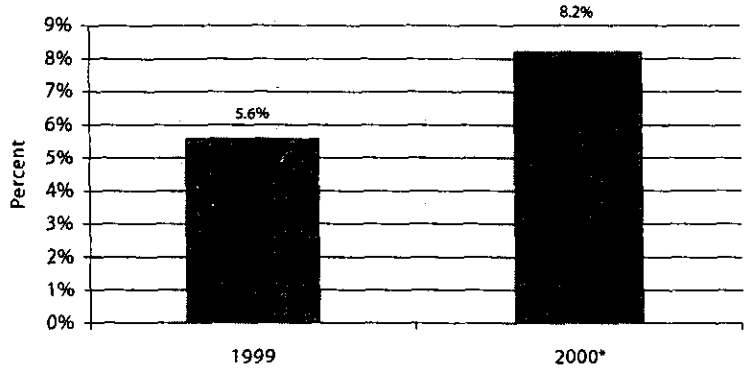


Note: (*) 2000 data based on 3Q00 company reports & 4Q00 estimates.

Source: NPRG, FCC, Bear Stearns

As of the 4Q00, CLECs are estimated to hold 8.3% of the local telecommunications market in terms of revenue. In dollar terms, CLECs posted $39.1 billion in total revenue with $7.5 billion of such revenue derived from switched local access service. Due to the market slowdown, increased bankruptcies and a maturing market, 2000 represents the first year that CLECs will not have doubled their revenue market share.

CLEC Market Share: Access Lines



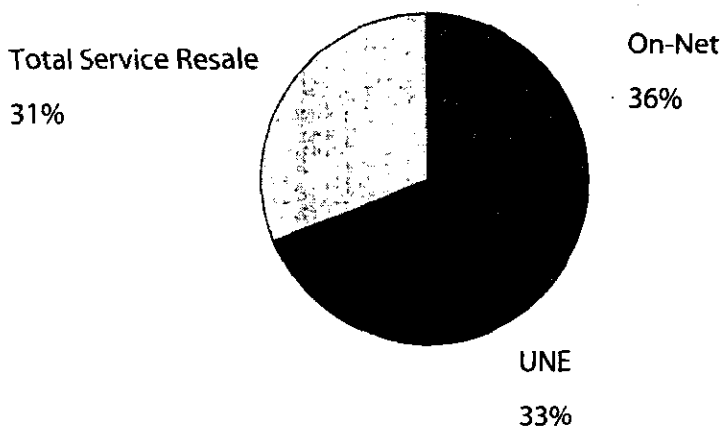
Note: (*) 2000 data based on 3Q00 company reports.

Source: NPRG

As of the 3Q00, CLECs held 8.2% of the local telecommunications market in terms of access lines. If the 2000 trend continues, CLECs can reasonably be expected to hold 9.3% of total access lines as of the 4Q00. In terms of access lines, 2000 also represents the first year that CLECs will not have doubled their market share. This trend is to be expected, however as many larger CLECs experienced financial difficulty in 2000 leading to lower access line growth.

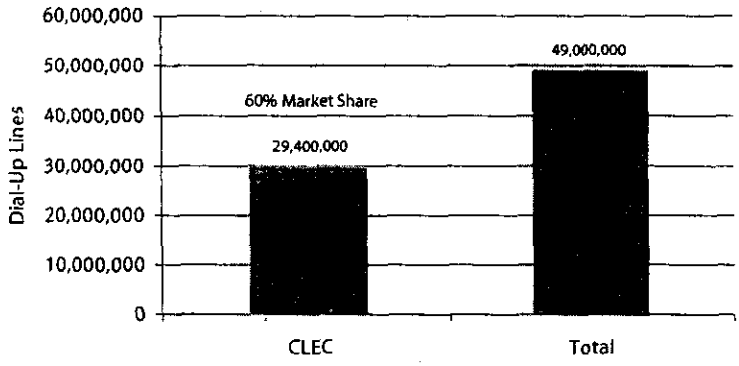
Companies Building Digital Futures...

2Q00 CLEC Line Mix



Source: Credit Suisse First Boston

Internet Dial-Up Lines Served by CLECs



Source: NPRG

Congress envisioned three methods by which carriers could enter the local market, (1) facilities-based entry, (2) unbundled network elements (UNEs), and (3) resale. ALTS represents CLECs that are facilities-based, CLECs that invest in their own facilities or use portions of the ILEC network (UNEs) in conjunction with their own equipment. As seen, carriers utilizing these two entry strategies account for almost 70% of local competition. The amount of resale competition is expected to decline as CLECs continue to build their networks.

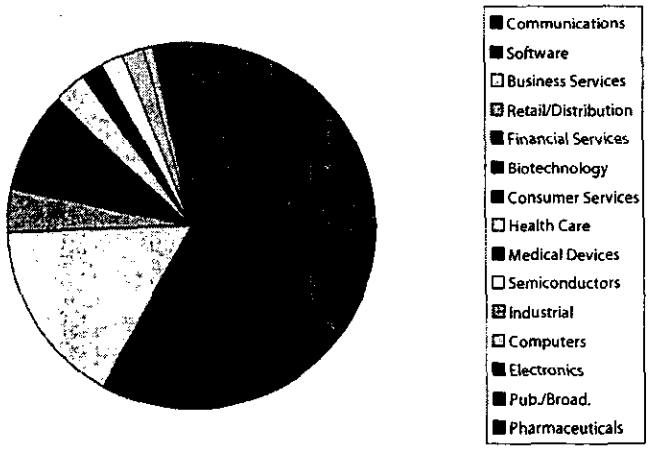
With the passage of the 1996 Act, Internet service providers (ISPs) found an industry group willing and able to supply the growing demand for increased connectivity and modernized facilities. Brad Jenkins, President of JPS.net, the largest ISP in northern California outside San Francisco, notes that without CLEC networks, ISP customers in "rural communities like... Laytonville, Mojave and Yosemite would pay per-minute charges to reach the nearest larger city."

The CLEC Industry:
Capital Formation

The Association for Local Telecommunications Services

Companies Building Digital Futures...

2000 (*Q1-Q3*) Venture Capital Spending by Industry

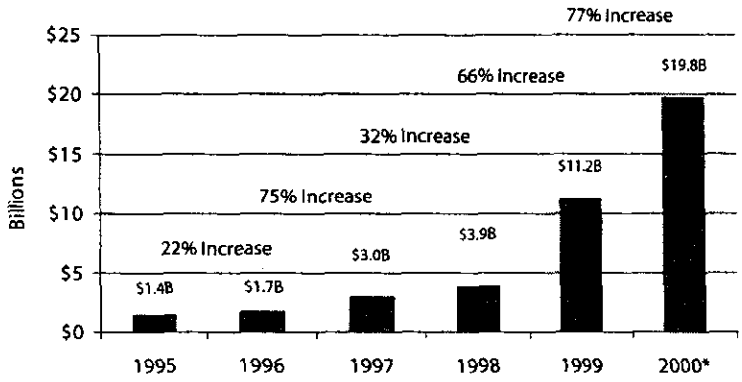


Source: PriceWaterhouseCoopers

Total 2000 (Q1 - Q3) VC Investment: $54.5B

Despite the slowdown in equity markets, investment in communications on the part of venture capitalists continued to grow unabated in 2000. For the first three quarters of 2000, $19.8 billion, or 36%, of the $54.5 billion total venture capital (VC) was directed towards the communications industry. This represents an increase from 30% for the same period in 1999 and an increase from 28% in 1998.

VC Dollars Spent in Communications



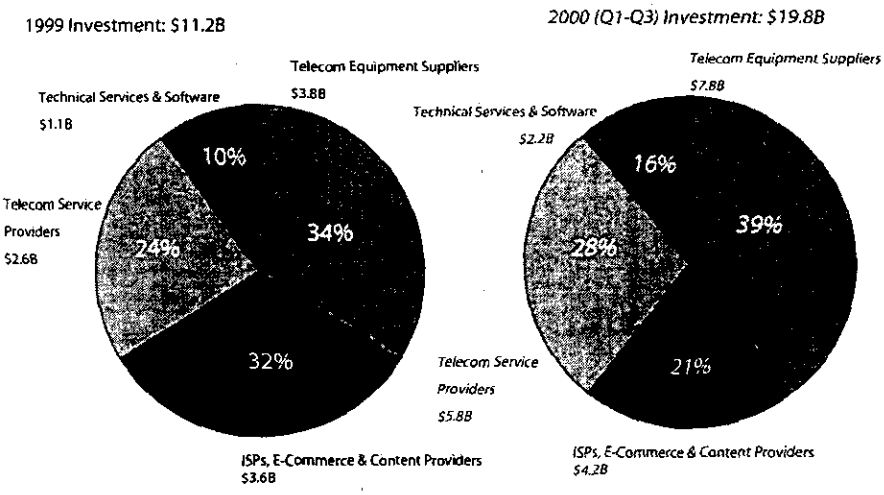
Note: (*) 2000 data represents 1Q00 - 3Q00.

Source: PriceWaterhouseCoopers

With the passage of the 1996 Act, the communications industry saw a massive influx in VC as innovation and entrepreneurialship took hold. With $1.4 billion of VC directed towards the communications industry in 1995, that figure reached almost $20 billion in the first three quarters of 2000 alone. Since 1995, growth rates for communications VC have consistently reached double-digits with the previous two years experiencing growth rates in excess of 50%.

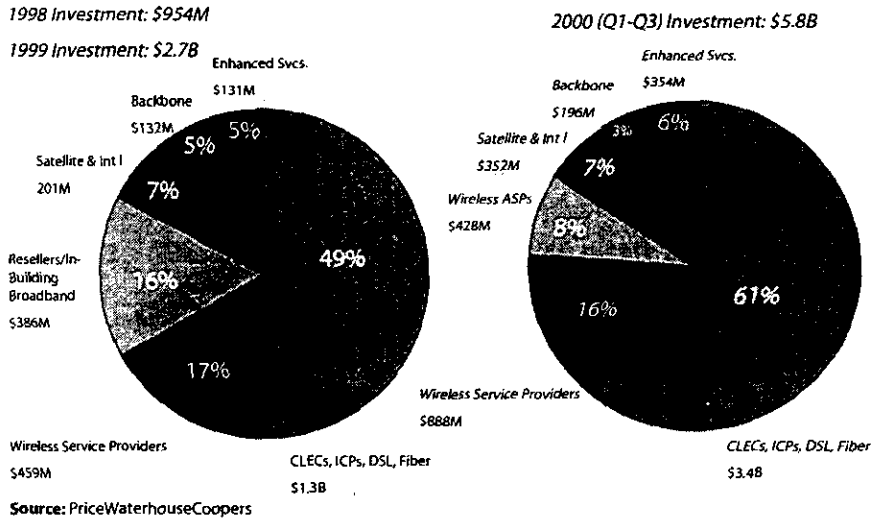
Companies Building Digital Futures...

VC Investments in the Communications Industry



Source: PriceWaterhouseCoopers

VC Investments in Telecom Service Providers



Source: PriceWaterhouseCoopers

For the first three quarters of 2000, $5.8 billion, or 28%, of the $19.8 billion total VC, or 'seed money', in the communications industry was directed at service providers, up from $2.6 billion in 1999. This represents an increase from 24% in 1999. Equipment suppliers, the companies that manufacture the facilities on which competition is built, secured the lion's share of VC investment. Equipment vendors secured $3.8 billion, or 34%, of communications VC in 1999 and $7.8 billion, or 39%, for the first three quarters of 2000. The recent financial problems plaguing CLECs have spread to this crucial sector as well with Barron's noting that "the elephant in the room that now threatens to bring down the economy is the telecommunications industry".

Companies competing for the local market led telecommunications service providers in VC investments. In the first three quarters of 2000, CLECs, ICPs, DSL and fiber companies received $3.4 billion, or 61%, of total service provider VC.

Companies Building Digital Futures...

Top 2000* VC Investments in the CLEC** Sector

Company	Service	Amount ($M)
Carolina Broadband *(Charlotte, NC)*	ICP	$409
Looking Glass Networks *(Oak Brook Terr., IL)*	Fiber optic network	$236
Velo.com *(Englewood, CA)*	Fixed local wireless	$234
Yipes *(San Francisco, CA)*	Fiber optic network	$217
NT Corporation *(Pensacola, FL)*	DLEC-DSL	$213
Cogent *(Washington, DC)*	All-optical network	$206
Formus Communications *(Reston, VA)*	Local broadband wireless	$175
Global Metro Networks *(Silver Spring, MD)*	Metro dark fiber networks	$155
Broadview Networks *(New York, NY)*	ICP	$150
KNOLOGY *West Point, GA)*	ICP	$150
Darwin Networks *(Louisville, KY)*	DLEC-DSL	$121
Grande Communications *(Austin, TX)*	ICP	$109
Aerie Networks *(Denver, CO)*	Broadband fiber optic	$105
@Link Holdings *(Louisville, CO)*	DLEC-DSL	$101
CityNet Corp. *(Silver Spring, MD)*	Broadband Wholesaler, CLEC	$100
airBand Communications *(Addison, TX)*	High-speed Broadband	$ 90
Flashcom *(Huntington Beach, CA)*	DLEC-DSL	$ 84
2nd Century *(Arlington, VA)*	ICP	$ 77
Digital Broadband *(Waltham, MA)*	DLEC-DSL	$ 75
TriVergent *(Greenville, SC)*	ICP-DSL	$ 67
STSN *(Salt Lake City, UT)*	Hotel In-Building Broadband	$ 65
New Edge Networks *(Vancouver, WA)*	DLEC-DSL	$ 63
Urban Media *(Palo Alto, CA)*	In-Building Broadband	$ 59
Net Rail *(Atlanta, GA)*	Internet Backbone Provider	$ 55
InternetConnect *(Torrance, CA)*	ISP-DSL	$ 53
Maverix.net *(Chicago, IL)*	DLEC-DSL	$ 43
BlueStar *(Nashville, TN)*	DLEC-DSL	$ 34
Total		**$3.4B**

Notes: (*) 2000 data represents 1Q00 - 3Q00. (**) includes CLECs, ICP, DSL & fiber.

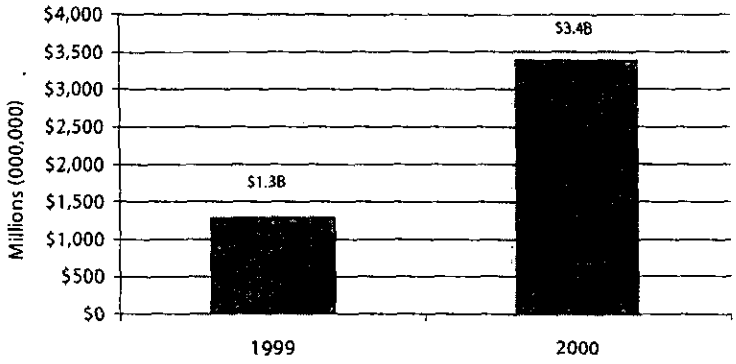
Source: PriceWaterhouseCoopers

While many of the capital markets were virtually closed to the CLEC industry, the VC segment continued to invest large amounts of capital in the CLEC sector. VC provides the critical seed money for new competitors to secure their first rounds of financing. As companies mature, much of the sources of funding shifts to the equity markets and strategic and institutional investors. In 2000, seizing the opportunity created by the overwhelming demand for broadband connectivity, VC investment flowed heavily into data and broadband providers. A total of $3.4 billion was poured into the CLEC, ICP, DSL and fiber industries. Of the top VC investments noted, 8 were directed at ALTS members: Carolina Broadband, Yipes Communications, CityNet Corp., 2nd Century Communications, Digital Broadband Communications, TriVergent (Gabriel Communications), New Edge Networks and Bluestar (Covad). Digital Broadband recently filed for Chapter 11 bankruptcy.

Companies Building Digital Futures...

Venture Capital Investments in the CLEC Sector*

*1999 vs 2000***



Notes: (*) includes CLECs, ICP, DSL & fiber. (**) 2000 data represents 1Q00 - 3Q00.

Source: PriceWaterhouseCoopers

As noted, the CLEC sector saw an increase in VC funding from $1.3 billion in 1999 to $3.4 billion for the first three quarters of 2000. This funding provides crucial cash to sustain and expand operations in such a capital-intensive market. Seeking to build networks that span all across the country, CLECs use this funding to compete for customers with the incumbents that begin with 100% market share.

Select Strategic Investments in the CLEC Sector

Date	Company	Investor	Amount ($M)
January 2000	Digex (Intermedia)	Compaq	$50
January 2000	Digex (Intermedia)	Microsoft	$50
January 2000	Intermedia	KKR	$200
February 2000	US LEC	Bain Capital, Thomas Lee Partners	$300
March 2000	CTC Communications	Bain Capital, Thomas Lee Partners, CSFB	$300
March 2000	CAIS Internet	3COM	$20
May 2000	CAIS Internet	Microsoft	$40
May 2000	XO Communications	Forstmann Little	$400
November 2000	Winstar	Microsoft, CPQ Holdings, CSFB & WCAS	$270
Total			***$1.63B***

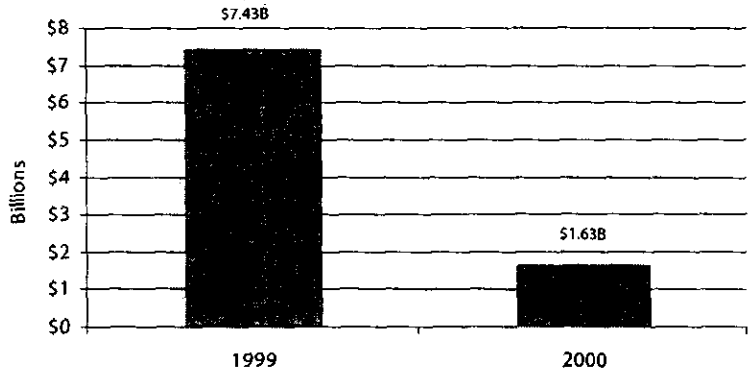
Source: Morgan Stanley Dean Witter

For the year-end 2000, the CLEC industry saw a marked decrease in strategic investments, or private funding. Morgan Stanley Dean Witter values the top investments in CLECs, or their subsidiaries, at $1.63 billion. Of the investments noted, 5 were directed at ALTS network members, (1) Intermedia, (2) US LEC, (3) CTC Communications, (4) XO Communications (*formerly NEXTLINK*), and (5) Winstar.

Companies Building Digital Futures...

Select Strategic Investments in the CLEC Sector

1999 vs 2000



Source: Morgan Stanley Dean Witter

As noted, the CLEC sector saw a marked decrease in strategic investments as this sector of the capital markets was virtually off-limits to CLECs. At year end 1999, CLECs secured $7.43 billion in strategic investments. In 2000, with financial markets souring and private investors shutting their doors, investment dropped to $1.63 billion.

Merger & Acquisition Activity in the CLEC Sector

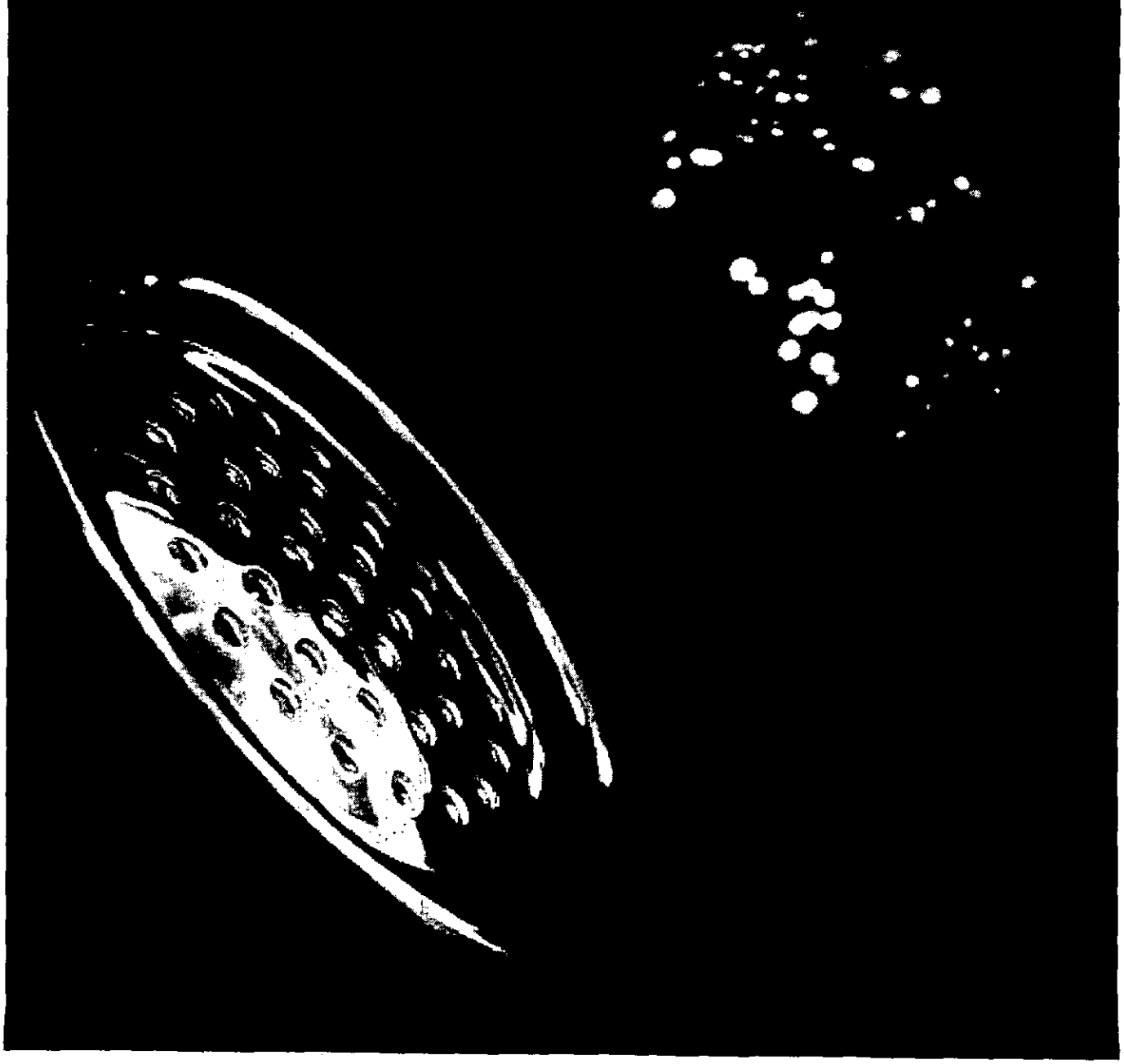
Date	Acquirer	Target	Firm Value ($B)
January 2000	XO Communications	Concentric Networks	$2.217
February 2000	Global Crossing	Ixnet	$3.672
February 2000	Global Crossing	IPC	$2.865
April 2000	McLeodUSA	Splitrock	$1.826
April 2000	CoreComm	ATX	$ .900
April 2000	Time Warner Telecom	GST	$ .690
April 2000	Advanced Radio Telecom	Broadstream	$ .365
April 2000	Mpower	Primary Network	$ .145
May 2000	Choice One	US XChange	$ .515
June 2000	Covad	Bluestar	$ .202
June 2000	Gabriel *(equal merger)*	TriVergent	
September 2000	WorldCom	Intermedia	$5.509
October 2000	McLeodUSA	CapRock	$ .532
December 2000	Hughes	Telocity	$ .180
Total			***$19.618B***

Note: Date indicates month that transaction was announced. Not all transactions have been completed.

Source: Morgan Stanley Dean Witter

Seeking to cover the broadest possible service area and to combine capital resources, a number of CLECs merged or were acquired in 2000. Of the transactions noted, 14 were ALTS members at the time of the announcement, (1) XO Communications, (2) McLeodUSA, (3) CoreComm, (4) Time Warner Telecom, (5) GST, (6) Advanced Radio Telecom, (7) Mpower, (8) Choice One, (9) US XChange, (10) Intermedia, (11) Gabriel, (12) TriVergent, (13) Covad, and (14) Bluestar.

The CLEC Industry:
Facilities, Labor & Revenue



The Association for Local Telecommunications Services