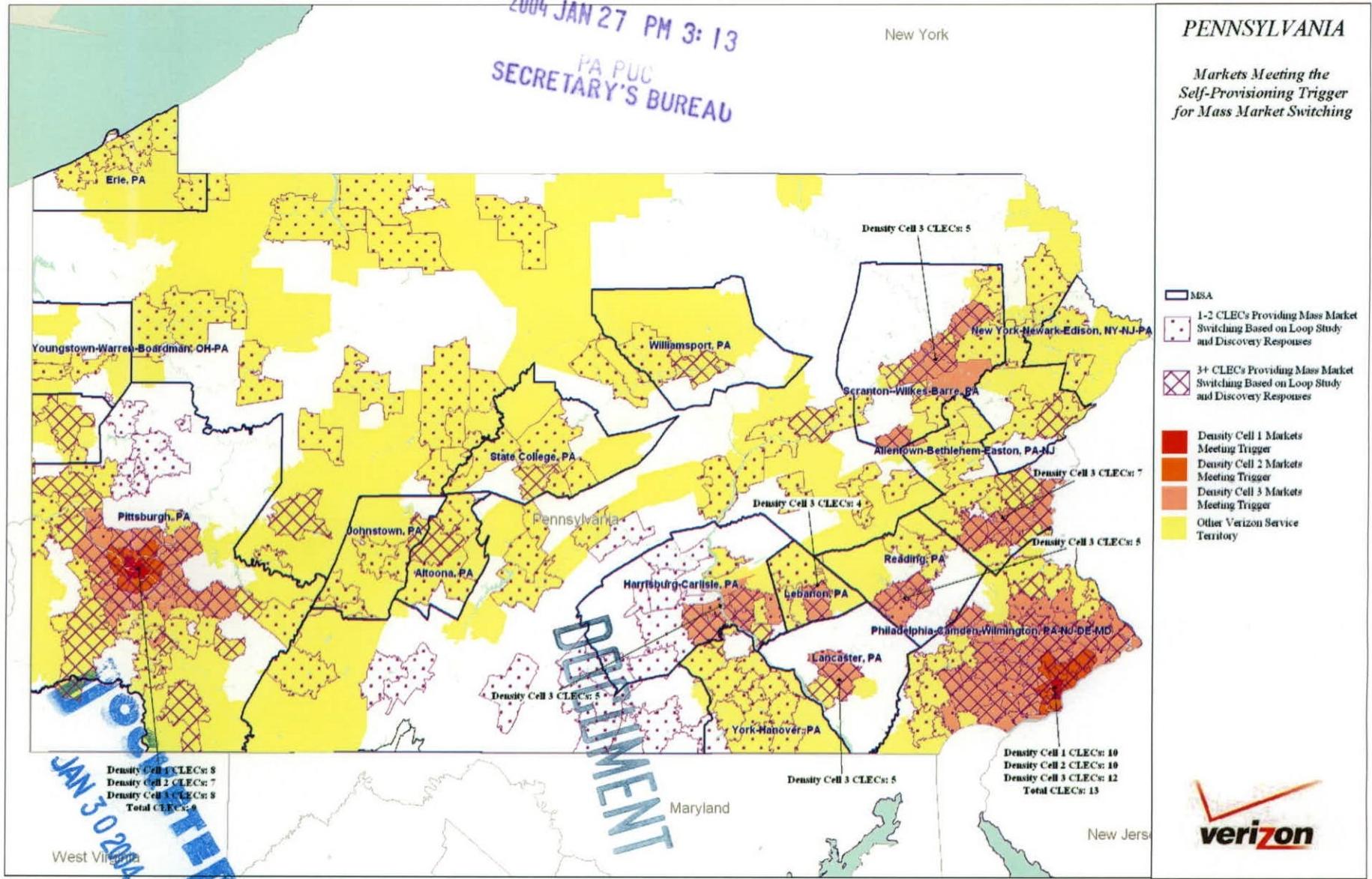


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**PENNSYLVANIA**

*Markets Meeting the Self-Provisioning Trigger for Mass Market Switching*

- MSA
- 1-2 CLECs Providing Mass Market Switching Based on Loop Study and Discovery Responses
- 3+ CLECs Providing Mass Market Switching Based on Loop Study and Discovery Responses
- Density Cell 1 Markets Meeting Trigger
- Density Cell 2 Markets Meeting Trigger
- Density Cell 3 Markets Meeting Trigger
- Other Verizon Service Territory

Density Cell 1 CLECs: 8  
 Density Cell 2 CLECs: 7  
 Density Cell 3 CLECs: 8  
 Total CLECs: 23

Density Cell 1 CLECs: 10  
 Density Cell 2 CLECs: 10  
 Density Cell 3 CLECs: 12  
 Total CLECs: 32

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# GLOSSARY OF TERMS

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## Access

The ability of one company to connect to or use another company's communications services or facilities.

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## Access Charges

Fees paid by long distance carriers to local exchange carriers for calls that originate or terminate on their local network.

DOCUMENT

## ADM

Add Drop Multiplexer. In OSS, a multiplexer that allows a signal to be added into or dropped out of a SONET span.

## Advanced Intelligent Network (AIN)

A term indicating a network architecture concept with three basic elements: 1) Signal control points (SCPs), which are computers that hold databases in which customer-specific information is used by the network to route calls stored; 2) Signal switching points (SSPs), which are digital telephone switches that can communicate with SCPs and obtain customer-specific instructions as to how a call should be completed; and 3) Signal transfer points (STPs), which are packet switches that shuttle messages between SSPs and SCPs.

## Analog

In telecommunications, a continuous electrical transmission of voice, data, or video that is comparable (analogous) to the original signal. In short, transmissions that are not digital.

## ANSI

American National Standards Institute. Voluntary organization composed of members that coordinate standards-related activities.

## ASP

Application service provider.

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**Asymmetric Digital Subscriber Line (ADSL)**

A transmission technology that allows interactive voice, data, and video to be transmitted over conventional copper wire networks. This is widely viewed as an interim technology that will precede the wide-scale deployment of broadband fiber-optic or coaxial cable networks. ADSL has the theoretical capacity of 1.54 megabits per second. Asymmetric refers to Internet traffic that requires high one-way bandwidth. ADSL is the "flavor" of DSL necessary for line sharing between voice and DSL.

**Asynchronous Transfer Mode (ATM)**

High-speed digital data switching and transmission technology that allows the simultaneous transmission of voice, data, and video over a single network. Information is organized into standard 53-byte cells, the first five bytes of which are reserved for the address of the information packet, which allows ATM to be very efficient and to achieve high throughput levels for all types of transmissions.

**Backbone network**

The main artery or link for a private or public network. Typically the backbone carries the lion's share of traffic (data, voice, video, or some combination), is capable of carrying significant bandwidth, and is the network to which small/remote networks/links are attached.

**Bandwidth**

The transmission capacity of an electronic line used to send data from one point to another or the width of a communications channel. For digital devices, the bandwidth is usually expressed in bits per second (bps) or bytes per second. For analog devices, the bandwidth is expressed in cycles per second, or Hertz (Hz).

**Basic Rate Interface (BRI)**

Targeted primarily to residential customers, uses two bearer channels (64 Kbps) and one D channel (16 Kbps) to deliver service to the desktop.

**Bit**

A bit is the basic unit of information in the binary system that is the basis of digital computing. In contrast, a voice telephone signal over a copper wire is analog, reflecting a continuous range of vocal tone (frequency) and volume (amplitude).

**Bits Per Second (BPS)**

A measure of bandwidth speed quantified by the number of bits per second.

**BLEC**

Building local exchange carrier.

**Broadband**

A high-speed, high-capacity transmission medium that can carry signals from multiple independent network carriers on a single coaxial or fiber optic cable by establishing different bandwidth channels. Broadband technology can support a wide range of frequencies and is used to transmit data, voice and video over long distances and simultaneously.

Broadband communications systems can transmit large quantities of voice, data, and video by way of digital or analog signals. Examples include DS-3 fiber-optic systems, which can transmit 672 simultaneous voice conversations, or a broadcast television station, which transmits high-resolution audio and video signals into the home.

**Buffer**

A protective coating applied directly on the fiber.

**Cable**

One or more fibers enclosed in protective coverings.

**Carriers' Carrier**

A telecommunications company that acts as a wholesaler by providing service to other telecommunications companies over its own network facilities. Most companies that own and operate their own telecommunications networks act as both wholesalers and retailers in order to maximize the use of their networks.

**CATV**

Cable television.

**Centrex**

A service provided by LECs and CLECs that offers features similar to those of a private branch exchange (PBX), except that the equipment is located at the LEC central office and not at the premises of the customer. These features include direct dialing within a given phone system, direct dialing of outbound calls, and automatic identification of incoming calls. This is a value-added service that carriers can provide to a wide range of customers who do not have the size or the funds to support their own on-site PBXs.

**Channel**

A telecommunications path of a specific capacity and speed between two locations in a network.

**Circuit Miles**

The number of pole miles, the distance between electrical poles carrying electrical lines, times the amount of circuits that it is carrying.

**CLEC (Competitive Local Exchange Carrier)**

A LEC that provides switched local services in competition with the incumbent LEC or "ILEC" (frequently an RBOC) as an alternative for local transport of private line, special access and interstate transport of switched access telecommunications services.

**Client**

Usually a PC that communicates over a network with its peers, other clients, and with a larger computer, called a server, which typically stores data that many workers need to use. The client has just one user, the server many.

**CO (Central Offices)**

The central switching facilities of a LEC.

**Coaxial Cable**

A type of cable used for the broadband transmission of data and video, most commonly used by cable television service providers. The cable is composed of a center copper conductor, an insulating shield, an outer layer of copper or aluminum, and a protective covering.

**Collocation**

The ability of a CLEC to connect its network to the access lines at an ILEC's central office without being connected to the ILEC's switch. Physical collocation occurs when a CLEC places its network connection equipment (digital loop connectors and fiber optic transports) inside the ILEC's central offices. Virtual collocation is an alternate form of collocation in which the ILEC permits the CLEC to connect to its central office on comparable terms, even though the CLEC is not physically located inside the central offices.

**Collocated Switched Access Transport**

A dedicated high capacity line carrying switched transmissions of multiple end users from the company's facilities to and from the company's collocation points with the ILEC to the public switched network at a usage sensitive rate.

**Common Carrier**

A company subject to government regulation that furnishes the public with telecommunications services and facilities (such as a telephone or telegraph company).

**Competitive Access Provider (CAP )**

Competitive access providers, the precursors to CLECs before the Telecommunications Act of 1996. CAPs provided private-line local transport and special access telecommunications services as an alternative to the local exchange carrier but were not permitted to offer local dial tone, long distance, or other regulated telecom services. CAPs operate in direct competition with ILECs but typically focus their services on high-revenue clients in business, government, and industry.

**Compression**

Any process that transforms a transmission signal to a more compact form (fewer bits) for easier and faster transfer and then restores the signal after transfer.

**Conductor**

Any substance, usually a wire or cable, that can carry an electrical current.

**Coupler**

An optical device that splits or combines light from more than one fiber.

**Customer Premises Equipment (CPE)**

Any telephone equipment that resides on the customer's premises.

**Digital Access Cross Connect System (DACCS)**

A digital switching device for routing and switching T-1 lines, and DS-0 portions of lines among multiple T-1 ports. DACCS combine signals from different sources and different bandwidths (e.g., video, telephone, high-bandwidth T-3, or low-bandwidth T-1) for transmission across a single communications channel.

**Dark Fiber**

Fiber optic cable that is not in use (*i.e.*, carrying light). If provided or sold, the recipient/buyer is expected to install equipment to transmit information (*i.e.*, "light") the cable.

**Dedicated Line**

Telecommunications lines used exclusively by designated customers along a specified route (includes such services as POP-to-POP special access, end user to LXC special access private lines, collocated special access, and collocated switched access transport). For example, a dedicated line may run directly from a customer to their long distance carrier's local point of presence, thus avoiding LEC access charges.

**Digital**

A method of storing, processing, and transmitting data through the use of electronic or optical pulses that represent the binary code digits, 0 and 1, or bits. Digital transmission and switching technologies offer a minimum threefold speed and capacity advantage over analog techniques, allowing much more efficient and cost-effective transmission of voice, video, and data.

**Digital Access Cross Connect System (DACS)**

DACS combine signals from different sources and different bandwidths (e.g., video, telephone, high-bandwidth T-3, or low-bandwidth T-1) for transmission across a single communications channel.

**Digital Loop Carrier (DLC)**

Network transmission equipment used to provide pair-grain on a local loop.

**Direct Inward Dialing (DID)**

A service feature that allows inward-directed calls to a PBX to reach a specific PBX extension without human intervention.

**Divestiture**

In 1982, the U.S. Department of Justice forced the breakup of the old Bell telephone system. The divestiture of AT&T established seven separate RBOCs and created two distinct segments of telecommunications service: local and long distance. This laid the groundwork for competition in the long distance industry but essentially created seven separate, regionally based local exchange service monopolies.

**Digital Signal 0 (DS-0)**

A circuit with a bandwidth of 64 kilobits per second, which is the capacity necessary to carry a single voice conversation. DS-0 is also known as one voice-grade-equivalent circuit (VGE).

**Digital Signal 1 (DS-1)**

A circuit with a bandwidth of 1.544 Mbps per second, (roughly 24 times that of DS-0). This bandwidth is used to transmit voice, video, and data on a larger scale than DS-0, but not to the degree of DS-3. A DS-1 is also known as a T-1. In Europe, it is known as an E-1.

**Digital Signal 3 (DS-3)**

A digital circuit with a bandwidth of 45 Mbps per second. This is the capacity necessary to carry 672 simultaneous voice conversations (roughly 28 times that of DS-1), video transmissions, or large amounts of data. A DS-3 is also known as a T-3.

**Digital Subscriber Line (DSL)**

Public network technology that delivers high bandwidth over conventional copper wiring at limited distances. There are four types of DSL: asymmetric digital subscriber line (ADSL), high data rate digital subscriber line (HDSL), symmetric data subscriber line (SDSL), and very high data subscriber line (VDSL).

**Downstream**

The direction of data flow on a data communications link, which occurs from the network down to the user. In the case of Internet access, it's the capacity or speed of data flowing from the Internet to the end user's PC or LAN.

**DSLAM**

Digital subscriber line access multiplexer.

**DWDM**

Dense wavelength-division multiplexing.

**Electronic Bonding**

Mandated by the FCC in a 1992 interconnection order as a means of communications and order provisioning between the CLECs as customers and the ILECs as suppliers of wholesale network elements and services. The implementation of electronic bonding is expected to accelerate the time required by the ILECs to provision orders generated by the CLECs.

**Electronic Data Exchange**

One way that unaffiliated companies can use their networks to link their businesses. While electronic mail between companies is common, electronic data exchange passes bigger bundles that replace large paper documents such as bills and contracts. Besides saving paper, computers could save time by taking over transactions like regular purchase orders that now require human intervention.

**End Office**

A central office at which user lines and transmission channels are interconnected.

**Enhanced Services**

Services offered over transmission facilities, which may be provided without filing a tariff. These services usually involve some computer related feature such as formatting data or restructuring the information.

**Eligible Telecommunications Carrier (ETC)**

A common carrier designated by a state public utility commission (PUC), that has two basic obligations: 1) to provide services supported by federal universal service mechanisms throughout its service area, and 2) to advertise the availability of its universal service and the charges throughout the service area.

**Ethernet**

A local area network (LAN) technology used for connecting computers, printers, workstations, terminals, etc. within the same buildings. Ethernet works over twisted wire or coaxial cables at speeds of up to 100 Mbps. Ethernet is the most popular LAN technology.

**Facilities-Based Carrier**

A telecommunications service provider that owns and operates its own facilities and networks, as opposed to a non-facilities-based carrier, which aggregates or resells another provider's service. NPRG considers a facilities-based carrier one that owns a Class 5 switch, an ATM or frame relay switch, a DSLAM, or transmission facilities.

**Feature Group D (FGD)**

The class of service associated with equal access arrangements. A trunk side connection provided by the ILEC, all facilities-based IXC's and resellers of significance pay a premium for FGD terminations.

**Federal Communications Commission (FCC)**

The FCC is the U.S. government agency that regulates the telecommunications industry.

**Fiber Miles**

The number of route miles existing in a telecommunications network multiplied by the number of fibers along that path.

**Fiber Optic Cable**

The medium of choice for telecommunications and CATV providers. Fiber is more protected from electrical interference and environmental factors that affect copper wiring and satellite transmission. A strand of fiber-optic cable is as thick as a human hair, yet is said to have more capacity than copper cable the size of a telephone pole.

**Fiber Optic Communications Technology**

Fiber-optic technology involves sending laser light pulses across glass strands in order to transmit digital information at the speed of light.

**Fire Wall**

One way to keep hackers out. Some networking devices can limit access to sensitive part of a network.

**Frame Relay**

A high-speed data packet switching service used to transmit data between computers. Frame relay supports data units of variable lengths at access speeds ranging from 56 Kbps to 1.5 Mbps. This service is ideal for connecting corporate LANs, but is not appropriate for voice and video applications due to the variable delays that can occur. Frame relay was designed to operate at high speeds on modem fiber optic networks.

**Fractional T-1**

Any data transmission rate between 56/64 Kbps and 1.544 Mbps. Fractional T-1 lines are cheaper, but have a fraction of the 24-channel capacity of T-1 lines.

**Gbps**

Gigabits per second or one billion bits per second.

**Generic Requirements-303 (GR-303)**

Telcordia Integrated Digital Loop Carrier System Generic Requirements, Objectives, and Interface.

**High Data Rate Digital Subscriber Line (HDSL)**

A technology designed for copper wire connections which provides, over limited distances (~ 15,000 feet), T-1 data transfer rates (1.544 Mbps) for both the downstream and upstream connection.

**Hub**

A collection center located centrally in an area where telecommunications traffic can be aggregated at a central point for transport and distribution.

**ICP**

Integrated Communications Provider.

**Incumbent Local Exchange Carrier (ILEC)**

Typically a regional Bell operating company (RBOCs) or independent telcos like GTE Sprint and Alltel.

**Interconnection Agreement**

Interconnection of facilities between or among local exchange carriers, including collocation of one carrier's equipment in the other carrier's premises.

**InterLATA Calls**

A call that moves from one LATA to another. Typically, these calls are referred to as long-distance calls.

**Internet**

An array of interconnected networks using a common set of protocols defining the information coding and processing requirements that can communicate across hardware platforms and over many links now operated by a consortium of telecommunications service providers and others.

**IntraLATA Calls**

Also known as short-haul long distance calls. Local toll calls that originate and terminate within the same LATA.

**Internet Protocol (IP)**

A compilation of network-level and transport-level protocols that allow computers with different architectures and operating system software to communicate with other computers on the Internet as well as voice transmission.

**Integrated Access Device (IAD)**

A CPE device, which supports voice, data, and video information streams over a single, high-capacity circuit.

**Inter Machine Trunk (IMT)**

A high-capacity circuit that connects two switching centers.

**Integrated Services Digital Network (ISDN)**

ISDN is a public switched network platform providing end-to-end digital connections for the concurrent transmission of voice, data, and video. ISDN lines offer capacity up to 128 Kpbs.

**Internet Service Provider (ISP)**

An Internet service provider provides customers with access to the Internet by linking its network directly or through other ISPs to the Internet backbone network. An end-user calls a local or long distance number, connects with the ISP that connects to the Internet.

**Interexchange Carriers (IXCs)**

Long distance carriers. There are many facilities-based IXCs, including AT&T, MCI/WorldCom, Sprint, and Qwest, as well as several hundred other IXCs that offer long distance service through the resale of the transmission capacity of facilities-based long distance carriers.

**Kbps**

Kilobits per second, or thousands of bits per second.

**Kilobit**

One thousand bits of information. The information-carrying capacity (*i.e.*, bandwidth) of a circuit may be measured in "kilobits per second."

**Landline:**

Terrestrial circuits, such as wire, fiber, or microwave, constitute landline technology.

**Lit Fiber**

A fiber optic cable that is carrying a signal.

**Local Area Networks (LANs)**

In a LAN, groups of personal computers, workstations, and peripheral devices are interconnected within an office building or between distant locations. The interconnection of LANs allows for links between a company's decentralized computer network operations (See WAN).

**Last Mile**

A shorthand reference to the last section, or local loop, of a telecommunications network's path, typically from an ILEC's CO to the final connection with the end user. This portion of the network is typically owned by an ILEC.

**Local Access and Transport Areas (LATA)**

A geographic area composed of contiguous local exchanges, usually but not necessarily in the same state. The FCC has established geographical territories called local access and transport areas for the provision of local telephone service. These LATAs typically reflect the population density of their respective states (California has eleven LATAs, while Wyoming has only one), and are based on standard metropolitan statistical areas. There are approximately 200 in the United States.

**Local Exchange Carrier (LEC)**

A company providing local telephone services over existing networks, including the RBOCs and a variety of independent telephone companies. When discussing a competitive local telephone environment, the LEC is the incumbent, while the CLEC is the competitive entrant (See ILEC).

**Legacy Network**

Mature, proprietary network historically serviced only by the ILEC. Legacy networks with ILECs are perceived to be less sophisticated technologically than fiber networks.

**Local Multipoint Distribution Service (LMDS)**

A high frequency wireless service that delivers voice, data, and other services via cellular-like towers and roof top receivers that has bandwidth characteristics that are well suited for voice, data, and video transmission.

**Local Call**

A call originating using a single switching facility and terminating all within the same local exchange.

**Local Exchange Area**

A geographic area within a LATA determined by each state's telecommunications regulatory authority, in which calls are transmitted without toll charges to the calling party or the called party. Also referred to as Local calling area.

**Local Loop**

A circuit that connects an end user to the ILEC central office within a LATA.

**Local Toll Call**

A toll call that originates and terminates in different local exchanges, but within the same LATA. With deregulation, the distinction between local toll to local distance calls is becoming blurred.

**Long Distance Call**

Any telephone calls to a destination outside the local service area of the calling station, whether inter-LATA or intra-LATA, and for which there is a charge beyond that for basic service (also known as a toll call).

**Long Distance Carriers**

Also known as interexchange carriers (IXCs) or interLATA carriers. Long distance carriers provide services between local exchanges on an interLATA or intraLATA basis.

**Long Haul Network**

The part of a carrier network comprised of dedicated point-to-point, point-to-switch, or switch-to-switch facilities.

**Main Distributing Frame (MDF)**

A wiring arrangement that connects the telephone lines coming from outside on one side and the internal lines on the other.

**MDU**

Multi-dwelling unit, also known as an MTU, multi-tenant unit.

**Media Gateway Control Protocol (MGCP)**

Technical specifications jointly developed by Bellcore and Level 3 Communications designed to bridge current circuit based PSTN networks and emerging Internet Protocol technology based networks.

**Metropolitan Area Network (MAN)**

A data communications network that 1) covers an area larger than a campus area network and smaller than a wide area network (WAN), 2) interconnects two or more LANs, or 3) usually covers an entire metropolitan area, such as a large city and its suburbs.

**Mbps**

Megabits per second, or millions of bits per second.

**Megabit**

One million bits of information. The information-carrying capacity (e.g., bandwidth) of a circuit may be measured in "megabits per second."

**Microwave**

A wireless transmission platform that has been widely used for long-haul transmission. Microwave has also been used on a smaller scale for local loop bypass.

**Mode**

A single electromagnetic field pattern that travels in fiber.

**Multiplexing**

An electronic or optical process that combines a number of lower-speed transmission lines into one high-speed line by splitting the total available bandwidth into narrower bands (frequency division) or by allotting a common channel to several different transmitting devices one at a time, in sequence (time division).

**Multi Protocol Label Switching (MPLS)**

An evolving IETF standard intended for Internet applications. MPLS is a widely supported set of specifications intended to address Quality of Service in IP-based networks.

**Multimode fiber**

A fiber with a that allows many modes of light to propagate. Commonly used inside buildings

**Network**

A system of computers and other hardware and software that is connected and allows users to transmit data and messages.

**Network Elements**

Elements defined by the functionality of the groups they contain and by their interfaces, such as the three basic elements of the AIN.

**Network Service Provider (NSP)**

An NSP is a company that provides Internet access to ISPs. Sometimes called backbone providers, NSPs offer direct access to the Internet backbone and the network access points.

**Network Switching Center**

A location where installed switching equipment routes long distance calls and records information with respect to calls such as the length of the call and the telephone numbers of the calling and called parties.

**Network Unbundling**

Unbundling involves the opening up of the various segments of a local exchange carrier's network for use by other carriers who desire interconnection. Network unbundling ensures that fair, cost-based prices are assigned to each unbundled network segment. In an environment such as the local loop, where one group of companies possesses a regulated monopoly on infrastructure, unbundling is essential in order to ensure competitors can provide attractive services and pricing to potential customers. Unbundled elements include switching transport and enhanced sources.

**Node**

An individual point of origination and termination of data on the network transported using frame relay or similar technology.

**Number Portability**

There are two different types of number portability: 1) service provider portability enables subscribers to keep their existing telephone numbers when changing from one provider to another; 2) location portability enables subscribers to keep their existing telephone numbers when they move within a local calling area.

**Off-Net Building**

A building that a CLEC serves by using the network infrastructure of the ILEC or another telecom carrier. For example, if a CLEC cannot cost justify building a direct fiber link into a building, it may still serve the building by leasing a DS-1, or an unbundled loop, from the ILEC and installing its own electronics in the building.

**On-Net Building**

A building that is directly connected to a CLEC's network with its own fiber.

**Operations Support Systems (OSS)**

The systems which are required to enter, schedule, provision and track a customer's order from the period of sale to the installation and testing of service and which include and interface with trouble management, inventory, billing, collection, and customer service systems.

**Optical Fiber**

An optical waveguide, comprised of a light-carrying core and cladding which traps light in the core.

**Optical switch**

A device that routes an optical signal from one or more input ports to one or more output ports.

**Packet**

A logical grouping of information that includes a header and usually user data. Continuous sequence of binary digits of information is switched through the network and an integral unit.

**Packet Switching**

The process of routing and transferring data by means of addressed packets so that a channel is occupied during the transmission of the packet only, and upon completion of the transmission the channel is made available for the transfer of other traffic.

**Private Branch Exchange (PBX)**

A switching system within an office building or campus environment that allows calls from outside to be routed directly to an individual instead of through a central number. A PBX also allows for calling within an office by way of four-digit extensions. Centrex is a service that can simulate this service from an outside switching source, eliminating the need for a large capital expenditure on a PBX.

**Personal Communications Services (PCS)**

A new generation of digital, two-way, micro-cellular, wireless communications services in the 1.8-2.2 GHz bands that provides telephony with seamless roaming, high voice reproduction quality, and low cost to the consumer relative to analog cellular. PCS supports a wide range of services, including telephony, voice mail, E-mail, data transfer, and faxing capabilities.

**Physical Collocation**

Occurs when a CLEC places its own network connection equipment inside the LEC central office.

**Points of Presence (POPs)**

POPs are locations where a long distance carrier has installed transmission equipment in a service area that serves as, or relays calls to, a network switching center of that long distance carrier. A long distance provider will have POPs in each LEC region in order to provide comprehensive service to its customers.

**Plain Old Telephone Service (POTS)**

A convenient acronym for the simple no frills, dial-tone service to which most telephone users subscribe.

**Primary Rate Interface (PRI)**

In North America, ISDN PRI is 1.544 Mbps and is targeted primarily to business customers. PRI uses 24 bearer channels (64Kbps) and is designed for telephone switches, computer telephony, and voice-processing systems.

**Private Line**

Communications circuits used to connect two or more customer locations for the purpose of transmitting internal voice and data traffic.

**Pulse Code Modulation (PCM)**

The most common method of encoding an analog voice signal into a digital bit stream.

**Public Switched Network**

The segment of the LECs network available to all public end-users on a non-priority basis. Traffic along this segment of the network is switched at the LECs central offices.

**Public Utility Commission (PUC)**

A state regulatory agency that governs utilities, including telephone companies providing intrastate service. It is the state PUC that currently has the authority to regulate the level of local service CLECs can provide.

**PUHC**

Public Utility Holding Company.

**Quality of Service (QoS)**

The measure of the communications service quality provided to a subscriber. With telephone service, QoS tends to be subjective, while it is easier to define with digital circuits since specific error conditions can be defined and tested.

**Regional Bell Operating Companies (RBOCs)**

The five local telephone companies established by AT&T's divestiture of local operations (the Bell System) in 1982. The RBOCs are Ameritech, Bell Atlantic, Bell South, SBC (Southwestern Bell), and US West.

**Reciprocal Compensation**

The compensation plan under which a CLEC pays an ILEC for terminating calls on the ILEC's network, and an ILEC pays a CLEC for terminating calls on the CLEC's network.

**Redundancy**

Having one or more back-up communications systems to prevent system failure if one goes out. Modern telecommunications networks have redundancy built into every critical component of the network.

**Resellers**

Companies which purchase telecommunications services wholesale from underlying carriers and resell them to end users at retail rates. Resellers are present in every segment of the telecommunications business, and profit by buying excess capacity of the facilities-based carriers at wholesale prices and selling it to the end user at retail prices.

**Resale**

The process in which resellers offer services.

**Route Miles**

The number of geographic miles covered by a communications network as it would appear on a network map. (See Fiber Miles.)

**Router**

A system placed between networks that relays data to those networks based upon a destination address contained in the data packets being routed.

**ROW**

Rights of way

**Singlemode fiber**

A fiber with a small core, only a few times the wavelength of light transmitted, that only allows one mode of light to propagate. Commonly used with laser sources for high speed, long distance links.

**Slamming**

The practice of unlawfully switching a customer's local or long distance telephone service provider without the consent of the affected consumer.

**SONET (Synchronized Optical Network)**

The fiber optics electronics and network architecture that enable transmission of voice, video, and data at very high speeds. This self-healing fiber ring network offers advantages over an older network, in that a cut line or equipment failure can be overcome by rerouting calls within the network. If the line is cut, the traffic is simply reversed and sent to its destination on the other side of the ring.

**Special Access Services**

The lease of dedicated telecommunications lines from a LEC or CLEC used by a customer to connect directly to a long distance carrier POP, avoiding the LEC access charges. Typical special access services include telecommunications lines running: 1) between the POPs of a single carrier; 2) from one long distance carrier's POP to the POP of another long distance carrier; and 3) from an end user to its long distance carrier's POP. Special access services do not require the use of switches.

**Subscriber Loop Carrier Circuit (SLCC)**

A system that allows one pair of wires that would normally provide one phone line to carry multiple conversations. A SLCC is used between phone company central offices and areas where there are too many customers for the cable in place.

**SS7 (Signaling System 7)**

SS7 is a sophisticated network signaling system that utilizes out-of-band signaling, whereby signaling information is sent over a separate channel from the call itself. SS7 improves call processing set-up times and frees circuit for voice, data, and video transmissions.

**Switch**

A network device that opens or closes circuits, or selects circuits or paths, to be used for the transmission of voice, video, and data. Switching is a process of connecting circuits from a transmission path between users. Switches allow local telecommunications service providers to connect calls directly to their destinations, while providing advanced features and recording connection information for billing.

**Switch Based Carrier**

Switch based facilities contain no fiber network. Companies that lease transmission capacity from another telecommunications service provider, but provide their own switching and network management.

**Switched Access**

Telephone companies provide exchange access services that offer switched interconnections between local telephone subscribers and long distance companies. Long distance companies also use switched access for origination access and completion of ordinary user dialed long distance calls.

**Switched Traffic**

Telecommunications traffic along a switched network.

**Switched Transport Services**

Transportation of switched traffic along dedicated lines between the LEC central offices and IXC POPs.

**T-1**

See DS-1.

**T-3**

See DS-3.

**Tandem**

An arrangement or sequencing of networks, circuits, or links, in which the output terminals of one network, circuit, or link are connected directly to the input terminals of another network, circuit, or link. This parallel system provides redundancy for the network.

**Tariff**

The schedule of rates and regulations set by communications common carriers and filed with the appropriate federal and state regulatory agencies; the published official list of charges, terms and conditions governing provision of a specific communications service or facility, which functions in lieu of a contract between the subscriber, or end user, and the supplier or carrier.

**TCP/IP**

Transmission control protocol/Internet protocol. A suite of network protocols that allows computers with different architectures and operating system software to communicate with other computers on the Internet.

**Telecommunications Act of 1996**

Federal telecommunications legislation passed in February 1996, which provides for a pro-competitive, deregulatory national policy framework, designed to accelerate private sector deployment of advanced telecommunications to create competitive markets.

**Third Party Verification**

The process by which an independent third party verifies a consumer's decision to change his or her selected IXC, CLEC or other service provider.

**Transport Charges**

The expenses paid to facilities-based carriers for transmission of calls between or within LATAs.

**Trunk**

A communication line between two switching systems. The term switching systems typically includes equipment in a central office and PBXs.

**Twisted Pair**

The most convenient and inexpensive sort of wiring for networks. It looks similar to the wire that plugs your phone into the wall jack. Though not suitable for handling heavy traffic over long distances, network-hardware makers keep finding ways to boost the speed of these narrow pipes for sending data around and office.

**Unbundled Loop**

Essentially the two-wire copper loop that runs from the ILEC's central office to the customer's premises.

**Unbundled Network Elements (UNE)**

As a result of the Telecommunications Act of 1996, the ILECs were ordered to make all of the different elements of their networks available to competitors to lease at wholesale rates. Pursuant to this order, the ILECs have had to divide their networks into 14 different elements and allocate costs individually. The significance of this ruling is that if a CLEC has its own fiber backbone, its own switch, and only needs the last mile connection from the central office to the customer premises, it can lease that connection, or unbundled loop, from the ILEC without paying for other network elements that are unnecessary.

**Unbundling**

Unbundling includes the separate pricing of each component or element of a communications product or service, so that the customer may select only those components or elements he or she needs without having to accept unnecessary elements or components.

**Universal Service**

A public policy that states that all U.S. households should have access to basic telephone service at affordable rates. Thus far, only large LECs and RBOCs have been bound by Universal Service requirements to provide POTS to all residences in their operating region and have thus qualified for subsidies. It has not yet been determined whether CLECs and other entrants into the local arena will be made responsible for Universal Service, although CLECs must contribute a percentage of revenues to support the Universal Service Fund.

**Upstream**

The direction of information flow on a data communications link, from the customer through the cable system or telephone network, to the cable head end or the telephone central office.

**Very High Data Rate Digital Subscriber Line (VDSL)**

A technology designed for copper wire that provides downstream data transfer rates over limited distance (1000-4500 feet) of 13-52 Mbps and upstream rates of 1.5-2.3 Mbps.

**Virtual Collocation**

An alternative to physical collocation in which the CLECs connect their equipment to the LEC's facilities from a remote location. A CLEC may choose to have a virtual location if a LEC's CO does not have sufficient space to provide a physical collocation. A virtual collocation is less desirable than a physical collocation because the ILEC contains the equipment used to provide the interconnection.

**Virtual Private Network**

A public circuit-switched data service offered by IXC's and making use of the public switched telephone network. Circuit switching refers to the process of setting up and keeping a circuit open between two or more users, such that the users have exclusive and full use of the circuit until the connection is released. The public switched telephone network refers to the worldwide voice telephone network accessible to all those with telephones and access privileges.

**VoDSL**

Voice over DSL

**Voice-Grade-Equivalent Circuit (VGE)**

One VGE is equal to 64 kilobits of bandwidth or a DS-0. A VGE is essentially one access line or one telephone line.

**Wavelength**

A measure of the color of light, usually expressed in nanometers (nm) or microns(\*m)

**Wide Area Network (WAN)**

A network that provides data communications to a larger number of independent users than are usually served by a local area network (LAN) and is usually spread over a larger geographic area than that of a LAN.

**Wide Area Telecommunications Services (WATS)**

Allows customers to be billed at a bulk rate for the long distance voice/data calls they make, rather than on an individual, call-by-call basis. The service is provided by long distance carriers within selected service areas by means of special access/private lines that are connected to the public network through WATS equipped central offices.

**Wave Division Multiplexing (WDM)**

In optical fiber communications, a technique by which two or more independent optical signals having different wavelengths may be simultaneously transmitted in the same direction over one fiber and then be separated by wavelength at the distant end.

deployed for less than half the cost of a Class 5 switch and help create a packet network.

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**MERGERS, ACQUISITIONS & DIVESTITURES**

At the end of Fourth quarter 2001, Allegiance acquired substantially all of the Intermedia Business Internet (IBI) assets from WorldCom, Inc. The assets were purchased for \$12 million. WorldCom was obligated to sell the IBI assets pursuant to a consent decree entered into by WorldCom and Intermedia with U.S. Department of Justice in connection with their merger in 2000. According to Allegiance, the acquisition of a true Tier I Internet backbone that has peering status with all major providers, including a three-year peering agreement with UUNET, will decrease its costs of terminating Internet traffic.

**SERVICES**

ASP	Yes
ATM	Yes
Business Dial-tone	Yes
Cable Telephony	No
Calling Card	Yes
CATV	No
Centrex	No
Class Features	Yes
Collocation Service	Yes
Dedicated Access Transport	No
Dedicated Internet	Yes
Dial-up Internet	Yes
DID/DOD	Yes
Domestic Long distance	Yes
E-mail	Yes
Frame Relay	Yes
International Long distance	Yes
Internet Protocol	Yes
IP Telephony	No
ISDN	Yes
LAN WAN VPN	No
Mobile Wireless	No
OC-n	No
Private Line	No
Residential Dial-tone	No
Toll Free Calling	Yes
Unified Messaging	No
Video Conferencing	No
VoDSL	No
Voice Conferencing	No

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**SERVICES**

ASP	No
ATM	No
Business Dial-tone	No
Cable Telephony	No
Calling Card	No
CATV	Yes
Centrex	No
Class Features	No
Collocation Service	No
Dedicated Access Transport	No
Dedicated Internet	Yes
Dial-up Internet	Yes
DID/DOD	No
Domestic Long distance	Yes
E-mail	Yes
Frame Relay	No
International Long distance	No
Internet Protocol	No
IP Telephony	No
ISDN	No
LAN WAN VPN	No
Mobile Wireless	No
OC-n	No
Private Line	No
Residential Dial-tone	Yes
Toll Free Calling	No
Unified Messaging	No
Video Conferencing	No
VoDSL	No
Voice Conferencing	No
Web Hosting	Yes
xDSL	No

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In April 2002, RCN upgraded its dial-up service to the V.92 standard, which allows more rapid download speeds and faster Internet connections. Approximately 2/3 of RCN's customers have access to the V.92 technology.

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- Chapter 2: State of the Industry**
- Chapter 3: Market Forecasts: Growth & Development**
- Chapter 4: Status of the CLEC Industry: Network Parameters & Revenue Figures**
- Chapter 5: Markets Served by CLECs: CLEC Networks (Operational & Under Development by City & State)**
- Chapter 6: Company Profiles**

*Adelphia Business Solutions*  
*Advanced TelCom Group, Inc.*  
*Allegiance Telecom, Inc.*  
*AT&T Corp.*  
*BayRing Communications*  
*Birch Telecom, Inc.*  
*Broadview Networks, Inc.*  
*BTI Telecom Corp.*  
*Buckeye TeleSystems*  
*Cablevision Lightpath, Inc.*  
*Cavalier Telephone Corp.*  
*Cbeyond Communications, L.L.C.*  
*Choice One Communications, Inc.*  
*Cinergy Communications*  
*Comcast Business Communication*  
*Conversent Communications, Inc.*  
*CoreComm, Ltd.*  
*Cox Communications, Inc.*  
*CTC Communications Group*  
*Eagle Communications, Inc.*  
*Eschelon Telecom, Inc.*  
*Everest Connections Corp.*  
*Florida Digital Network*  
*Focal Communications Corp.*  
*General Communications, Inc.*  
*Global Crossing Ltd.*

**VOLUME II**

*Global NAPs*  
*GlobalCom, Inc.*  
*Grande Communications Network, Inc.*  
*ICG Communications, Inc.*  
*Integra Telecom*  
*Ionex Telecommunications, Inc.*

*ITC^DeltaCom, Inc.*  
*Jaguar Communications, Inc.*  
*KMC Telecom, Inc.*  
*Knology Broadband, Inc.*  
*Lightship Telecom*  
*Logix Communications Enterprises, Inc.*  
*McLeodUSA, Inc.*  
*Mpower Communications Corp.*  
*Network Telephone, Inc.*  
*NewSouth Communications Corp*  
*NTS Communications, Inc.*  
*NuVox Communications*  
*Orlando Telephone Company*  
*Pac-West Telecomm, Inc.*  
*PaeTec Communications, Inc.*  
*Qwest Communications International, Inc.*  
*RCN Corp.*  
*RIO Communications*  
*RNK Telecom*  
*SBC Telecom*  
*Sigecom*  
*StratusWave Communications*  
*SunWest Communications*  
*TalkingNets Holdings, LLC*  
*TelNet Worldwide*  
*Time Warner Telecom, Inc.*  
*US LEC Corp.*  
*US Telepacific d/b/a Telepacific Communications*  
*Vanion, Inc.*  
*Verizon (Verizon Avenue)*  
*Winstar Communications*  
*Worldcom, Inc.*  
*XO Communications*  
*Xspedius Corporation*

## **Chapter 7: Competitors Watch List**

*Access Point, Inc.*  
*ACD.net*  
*Aeneas Internet Service, LLC*  
*Atlantic.Net Broadband, Inc.*  
*Auditel, Inc.*  
*Comspan, USA (formerly WANTel, Inc.)*  
*Dixie-Net Communications, Inc.*  
*FullTel, Inc.*  
*Kancharla Corporation*  
*Koyote Telephone*  
*LDMI Telecommunications*  
*Norcom2000*  
*NorLight Communications, Inc.*  
*Northwest Telephone*  
*PlanetLink Communications, Inc.*  
*Supra Telecommunications and Information Systems, Inc.*  
*Talk America*  
*Tesco*  
*Vycera Communications*  
*Z-Tel, Inc.*

**Chapter 8: Where Are They Now?**

*AVIX Technologies, Inc. (formerly USA Digital, Inc.)*  
*Backbone Communications, Inc.*  
*Ciera Networks Systems, Inc.*  
*Covista Communications, Inc.*  
*e.spire Communications*  
*LecStar Corporation*  
*Log On America, Inc.*  
*MetTel*  
*NECLEC, LLC.*  
*Network Plus Corp.*  
*Powercom Corp.*  
*Premier Network Services*  
*Sonus Communication Holdings, Inc.*  
*Tallgrass Communications*  
*WINfirst*  
*WANTel, Inc.*

**Chapter 9: Glossary of Terms**

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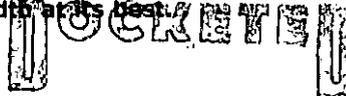
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## AboveNet Transport Services - IP Bandwidth

Pure IP Bandwidth at its Best.



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AboveNet's IP Bandwidth offerings overcome bandwidth limitations by giving you fast, reliable IP connectivity to the Internet within all major metropolitan areas—all over AboveNet's optical Internet long-haul backbone. AboveNet IP Bandwidth Services ensure that your data arrives quickly and reliably, whether you need easily managed Internet access from your cage in an AboveNet Data Center or direct access to the Internet backbone. In addition, AboveNet's customers include major top-tier ISPs. AboveNet IP Transport Services give you fast, direct "on-net" routing to the most in demand Internet networks and sites.

### Products & Services

- Overview
- Access
- Transport
- Hosting
- Storage
- App Management
- Resources

**Go:**

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AboveNet IP Bandwidth Services also give you a cost-effective path to AboveNet's extensive dark fiber infrastructure, which provides virtually unlimited, unmetered bandwidth at a fixed cost as well as access to our IP backbone. With AboveNet, you can control the growth and development of your own, private, facilities-based network and gain the benefits of dark fiber—unlimited capacity, speed, flexibility, security and reliability.

#### Access Based on Your Needs

AboveNet IP Bandwidth Services are designed to meet your specific requirements for IP connectivity. They include:

**Simple Internet Access** - This cost-effective service provides easily managed Internet access from your cage in an AboveNet Data Center. Once your order is complete, we'll provide you with a gateway IP address, DNS address and IP address, and turn on your connection, typically within 24 hours.

**Direct Internet Access** - For carriers and enterprises that need the fastest and most robust Internet connectivity available, this service extends Border Gateway routes directly to you, giving you the ability to effectively control your Internet traffic you from a variety of POPs, including telco hotels, PAIX locations and AboveNet Data

#### Highest Levels of Reliability

AboveNet IP Bandwidth Services ensure that your customers never find your network down. Our Service-Level Agreements (SLAs) guarantee 100 percent uptime. Multiple, redundant connections into data centers eliminate any single point of failure and the possibility of man-made or natural disasters. Redundant network connections are also available.

#### IP Bandwidth Services Highlights:

- Direct paths to the Internet from all major metro areas over a 100% fiber optic
- Lightning-fast connectivity, with speeds up to OC-48 (OC-192 in some locations)
- Rich peering relationships put you closer to destination networks on the Internet
- Redundant fiber connections eliminate single points of failure

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- 100% uptime SLAs
- Massively over-provisioned network ensures bandwidth availability
- "On-net" direct routing to major providers such as AOL and MSN
- Flexible connection options
- Cost-effective path to AboveNet's dark fiber infrastructure, which offers unlimited bandwidth at a fixed cost.

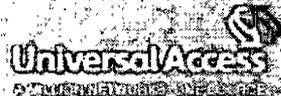
*Discover the power of unconstrained information exchange on an all-optical infrastructure productivity and transform your business.*

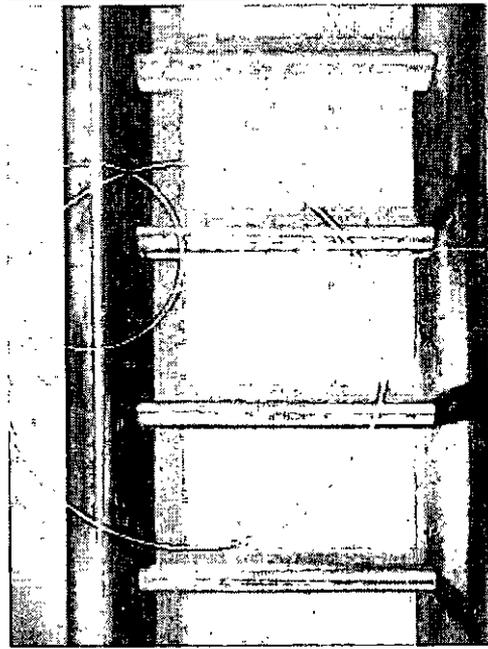
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Suppliers**

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Partnering with many of the industry's elite carriers has been key to providing the level of service our customers demand. Following are just some of the suppliers that allow us to extend world-class service to our customers.

- Cable & Wireless
- Dominion
- EPIK
- FiberNet
- Global Crossing
- ICG
- Level 3
- Lightcore
- Looking Glass
- MCI
- McLeod
- Progress Telecom
- Qwest
- SBC
- Sprint
- Telcove
- Teleglobe
- Telia
- Telus
- Time Warner Telecom
- UFO Communications
- U.S. Signal
- Valley Net
- Verio
- Verizon
- WCI Cable/Alaska Fiber Star
- WiTel
- XO
- Xspedius

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