Broadband Properties Directory Of Fiber To The Premise Companies

By Broadband Properties Staff

Adesta, LLC
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What they do: Adesta, LLC designs, builds, and supports multi-discipline network infrastructures and serves commercial, industrial and governmental entities globally. The company is delivering value-driven infrastructure solutions that are more reliable, integrated and smarter than ever before. It is redefining the economics and quality of converging security, communications, and transportation network infrastructures through its proprietary single-source approach that promises a new era of collaboration, communications and public safety.

Since 1988, Adesta has deployed over 2 million fiber miles in more than 70 metropolitan areas and completed over 300 electronic security systems projects in the United States, Europe, Asia, Central America, and the Middle East.

MDU/MTU Importance: Adesta, through a partnering relationship it develops with each customer, designs, engineers, and constructs multi-technology and multi-discipline communications platforms capable of offering a wide array of services. Since the company is vendor independent, it is capable of creating a flexible solution that provides customers with a network that properly fits their service needs and expectations. Adesta designs and develops communications platforms so that a network will be capable of offering services, where other networks have their services modified to fit the network. Through its solutions, Adesta can develop communication platforms capable of offering, but not limiting to, such services as traditional and IP telephone, high-speed Internet access, traditional and high definition CATV, video-on-demand, and gaming along with other cutting edge and developing services. Adesta's customer base includes municipal governments, municipal and private utilities, MDU/MTU's, and developers along with others.

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What they do: AFL Telecommunications' Ethernet Passive Optical Network (E-PON) platform delivers the universal benefits of Ethernet across an industry standard PON physical architecture. Incorporating basic layer-2 switch functionality with a variety of carrier-optimized management features, the total E-PON solution is comprised of an Optical Line Terminal (OLT) located at the carrier's facility (central office, head-end, etc.), and an Optical Network Unit (ONU), typically located at the customer's premise. Each OLT has 4 PON ports that support up to 32 ONU's through passive splitting of a single optical fiber. Each ONU connects via a single fiber and each PON supports 625MB symmetrical bandwidth, enough bandwidth for voice, video, data, and emerging applications. AFL Telecommunications' E-PON solution offers an attractive "last-mile" strategy for Fiber-to-the-Subscriber (FTTx).

MDU/MTU Importance: E-PON enables the deployment of an infrastructure that can support all current and future services (voice, video, data, etc.) while enabling cost recovery with a data-only revenue stream. The system is highly scalable and can be deployed incrementally to reach a specific MDU or MTU location - providing an ideal solution for Fiber-to-the-Business applications targeting next generations services (VoIP, VLAN services, etc.). Upstream and downstream bandwidth can be managed to fit specific applications and provide the highest "revenue per user" to service providers. E-PON leverages the advantages of Passive Optical Network (PON) design, including: reduced CapEx and operating expenditures by eliminating active components in the field, and the ability to reach up to 32 subscribers with a single fiber.

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What they do: Alcatel provides broadband solutions to allow end customers to use high bandwidth voice, data and video applications. Alcatel 7340 FTTU product uses fiber connections to the home or business (FTTP) to provide unlimited bandwidth that will support today and tomorrow's applications. 7340 FTTU comply with FSAN G.983 BPON standard to deliver bandwidth over a passive optical network (PON). The use of PON translates into less outside plant operational and maintenance costs. The electronics included the Optical Line Terminal (OLT) located in the CO and Optical Network Terminal (ONT) located at the customer site. Alcatel supports several ONT versions for residential or business applications. The end consumer does need new equipment or change to Present Mode of Operation. All current voice, data, and video configurations are supported including 10/100bT data connections, analog or digital video with and without set top box, RJ-11 POTS connections, and T1 connections for enterprise applications.

MDU/MTU Importance: Alcatel 7340 FTTU customers include Incumbent Operating Company, Independent Operation Companies, Local Municipality or Utilities, or Regional Developers with the ability to deploy in the access network for MTU/ MDU applications. Alcatel 7340 FTTU allows MTU/ MDU to support unlimited bandwidth to tenants today

and scale for any bandwidth requirements in the future. A wide variety of communications and entertainment applications are supported and include Voice over IP, Video on Demand, Internet gaming, Video conferencing, and large data transfers. It can serve as a major competitive differentiator to attract technology savvy clientele and increase the average revenue per user (ARPU) by selling bundled triple play services. A number of home developers deploy the Alcatel 7340 today for this reason. In MTU applications it can be key retention tool to keep tenants in a competitive environment. Contact Alcatel to learn more about how the 7340 FTTU can assist your organization.

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What they do: Alloptic, Inc. provides access network equipment that delivers state of the art, optical IP Ethernet solutions. Our broadband technology bundles voice, data and video services over fiber directly to homes, MDU/MTUs and small businesses at revolutionary speeds and price points. Using Ethernet Passive Optical Networking (EPON), our product provides an unmatched 1.0 Gbps of symmetrical bandwidth, thus delivering between 2 and 10 times more capacity than competing systems. Our GigaForce™ Element Management System (GEMS) simplifies operation, administration and management of your network and allows users to partition the system so that each provider has access to only their portion of the network. Alloptic's GigaForce™ system has been deployed worldwide by municipalities and service providers alike, to bring the reality of Broadband communications to local communities.

MDU/MTU Importance: Alloptic's GigaForce™ Ethernet Passive Optical Network (EPON) is the first product to address the last mile bottleneck in a truly cost effective manner. Current broadband access technologies such as DSL and HFC (cable modems) have failed to deliver a cost effective, forward-looking solution to this bottleneck. Although both DSL and HFC can be somewhat inexpensive from a first cost perspective, neither technology offers the revenue scalability or operating expenditure savings that carriers require. The GigaForce™ solution delivers greater bandwidth, at lower costs, and offers increased revenue generating opportunities. Our industry-leading bandwidth enables developers to provide thousands of customers with ultra modern high-speed services. Alloptic's system supports not only the "triple play" of traditional services: voice, video and data, but advanced IP Video and VoIP (Voice over IP) as well. This flexibility allows networks to grow with the technology and ensures future readiness. Alloptic has been shipping quality access products globally since 2001.

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What they do: Alpha Technologies is a world-leading provider of power conversion products. Widely used in cable television, telecommunications and data networks worldwide, Alpha products have earned a reputation for reliability and performance. Alpha has a wide array of power products for FTTx applications including; headend or central office, premise, neighborhood or network. Alpha's product offering includes a complete line of both AC & DC UPS systems, line conditioners, batteries and accessories for indoor or outdoor applications.

The FlexPoint™ Series UPS powering system provides power to Network Interface Devices for residences and multiple dwelling units. The FlexPoint™ is a flexible, modular system providing total or partial outdoor powering solutions for fiber applications.

ELH is an element powering UPS designed to provide backup power for FTTx network powering applications. The ELH100 can supply up to 100 Watts of power to telephony, fiber-to-the-curb or home, or other communications equipment requiring 48 Volts DC to operate.

MDU/MTU Importance: Alpha's FlexPoint Series and ELH UPS' are key backup power products for any FTTx application. The FlexPoint™ is a simple, cost-effective local power solution for Customer Premise Equipment, providing power for FTTH, cable telephony, video and data services. Incorporates outdoor power modules and batteries, allowing easy access for servicing technicians 24/7. Additional benefits include; no conduit required because only low, safe voltages are distributed, optional long life replaceable batteries. This modular building block system allows for customized installations and is available in 18 or 30Watt versions. This powering system consists of a Power-Ring, Power-Ring Converter, Home Converter and Battery Module.

Alpha's ELH100 is a cost-effective UPS powering solution for distributed communications networks. Enclosed in a pole or wall mount weather resistant enclosure, it will keep field distributed electronics up and running during power disturbances and outages. Small node will keep powering with hard line COAX connector in addition to FTTx.

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What they do: American Polywater's CableFree® Loosener is a unique, time-tested blend of solvents and lubricants designed to loosen and remove premise cables held in conduits by a great variety of binding agents. CableFree® is an excellent and inexpensive tool to help mitigate the high costs of removal and liability in the event of fire. The potential dollar savings from a successful removal of stuck cable is very high. Even a partial success rate often makes the investment of time and effort worthwhile. CableFree® Loosener loosens stuck cable by softening binding agents such as wax, rust, soap, dirt, bitumen; lubricates to minimize the force required to pull the cable out once it has broken free; leaves empty conduit undamaged and ready for re-use after cleaning and drying; lowers duct reclamation costs by eliminating expensive cut-ins; and limits liability by helping meet NEC Code for Removal of Abandoned Cable.

MDU/MTU Importance: A National Electrical Code revision now requires that all abandoned copper and fiber cable be removed from buildings. The estimated 45 billion feet of obsolete cable in duct and plenum creates a hazardous fuel load for fires, resulting in toxic fumes and larger, more dangerous blazes. The code defines abandoned cable as "installed communications cable that is not terminated at both ends at a connector or other equipment and not identified 'For Future Use' with a tag." Removing this often tangled mess of premise cable from trays can be a real nightmare for building managers. Removal of cables installed in duct is even worse. Contractors quickly discover that trying to pull out old cable years later is even harder than pulling it in. Cables can be "cemented" into duct by dust and bugs, corrosion, degrading jacket materials, wax-based pulling lubricant residues, the occasional mouse carcass, and other mysterious goos.

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What they do: APA Cables & Networks designs and manufacturers a complete line of passive fiber optic connectivity solutions centered upon the Americable Fiber Distribution Systems. The Americable Fiber Distribution Systems are high density, easy access fiber distribution panels and cable management systems that are designed to reduce installation time, guarantee bend radius protection and improve traceability. The product-line fully supports a wide range of panel configurations, densities, connectors, and adapter options and are offered alongside a wide range of optical components, including WDMs, DWDMs, and splitters and couplers, that can be utilized on a stand-alone basis or integrated into the panel system.

The company also offers a range of fiber optic and copper cable assemblies including single-mode and multimode fiber assemblies and Cat 5e and Cat 6 copper assemblies. Whether your application requires the highest performance, a custom configuration or the best price on the market, APA Cables & Networks has a product level to meet your network requirements.

MDU/MTU Importance: APA Cables & Networks has experience in not only manufacturing, but also designing for complete passive fiber optic connectivity solutions. Whether networking an office building or a complete campus, APACN can offer the ideal solution for the project.

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What they do: As market demand for inexpensive, reliable telephony services heats up nationwide, Service Providers, both traditional and non-traditional are looking into offering triple play services through a fiber-to-the-premise architecture. One important challenge is to provide a primary line telephone network comparable to the incumbent telephone provider's network.

To successfully offer lifeline telephony service driven by an always-on mentality in a competitive market, it is necessary to provide high reliability and availability, unaffected by AC power outages. To provide primary line service, Service Providers must provide uninterrupted 911 emergency services, which requires highly reliable powering backup.

To accomplish all this, the power solution chosen would reach optimal tradeoffs between energy storage elements (batteries), indoor versus outdoor designs as well as local versus centralized powering schemes. Tradeoffs include the costs, penetration rates, location, deployment logistics, customer satisfaction, maintenance, energy efficiency, etc. The bottom line is that telephony demands a diligent, proactive management and a preventive maintenance strategy.

MDU/MTU Importance: The APC's PowerShield power supply with battery backup keeps emergency 911 telephone service up and running during power disturbances and outages. PowerShield's main function is to supply continuous power either -48VDC or 12VDC to Broadband equipment such as the Optical network Termination (ONT).

The PowerShield notifies the service provider of the power supply's health and status. Signals communicating on-line/on battery, missing battery, and replace battery provide the service provider with immediate information on the status and availability of their services before the subscriber realizes there is a problem. These communication features provide proactive monitoring and maintenance. The battery pack is designed to be replaced by the subscriber (every 4 - 6 years) in less than 30 seconds and be as simple as changing a battery in a cell phone. This feature eliminates battery replacement service calls for the service provider.

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What they do: BroadLight delivers cost effective components that enable high performance, end-to-end, easy to integrate PON solutions that accelerate FTTP deployment today. As the world-leading supplier, BroadLight develops standards-based digital, analog and optical communication semiconductors, software stacks and algorithms for system vendors who are looking to integrate fully functional, high-performance passive optical network solutions for carriers and service providers.

MDU/MTU Importance: With the highest price/performance in the industry, BroadLight provides the solution that will drive the deployment of FTTH, FTTB and FTTC today -- PON Communication Components; PON Optical Transceivers and Analog ICs; PON Software Stacks and Algorithms.

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What they do: CableNetwork is a full line stocking distributor representing the most prestigious names within the Cable TV Industry. Our services include system design and configuration, installation, technical support and repair. We offer both new and refurbished equipment. As a multinational company headquartered in South Florida, CableNetwork's commitment is to provide our customers with a single source solution for all their purchasing requirements… anticipating industry needs and responding with the highest level of service quality products and advanced technologies.

Our state-of-the-art computer system and website provide our customers with real time account status (orders, invoices, shipping) and through an encrypted connection, clients can communicate directly with CableNetwork from anywhere in the world. CableNetwork distributes products from CommScope, Motorola, Alpha, PPC, OptiLoop and Allied Bolt to name a few.

MDU/MTU Importance: CableNetwork offers many products for the fiber-to-the-premise market. We offer the Acion 100 & 200 plus the PCT Mini Fiber Node Indoor Node products. These low cost indoor node products help bring down the cost of FTTP applications. CableNetwork has also introduced a low cost stereo 860 MHz Stereo Modulator for the head-end. This 60 dB 860 MHz Modulator is priced to replace old mono units and help upgrade the operators offering to the consumer. CableNetwork can bundle many products together to offer substantial savings in freight and transportation costs.

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What they do: Corning Cable Systems is an industry leader in complete passive product solutions for fiber-to-the-X networks. Its Evolant Solutions for Access Networks features a vast array of products designed for efficient and cost-effective deployment of fiber to the MDU/MTU. These products include outside and inside plant cable, cable assemblies, splitters, wall- and rack-mountable splice and connector housings. Corning Cable Systems also provides dedicated engineers for customer technical support, system designs, and newly developed training courses specifically focused on FTTx networks.

MDU/MTU Importance: Corning Cable Systems is a market leader in the fiber-to-the-X segment and has specifically tailored product sets for networks serving MDUs and MTUs. The company's passive products for MDU/MTU FTTx applications are craft-friendly and simple to install. Corning Cable Systems provides all passive components for optical access networks serving MDUs and MTUs, which eliminates the complexity of multiple product vendors. A passive optical infrastructure for MDU/MTU applications offers the highest degree of network future-proofing available, ensuring that tomorrow's suite of services will be handled by today's system.

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What they do: ECI Telecom's fiber solutions include C-Light MxU, the most comprehensive portfolio of ONUs -- Hi-FOCuS C-Light is a comprehensive family of Optical Network Units (ONUs) for optical broadband access. The C-Light family includes a wide range of ONUs specially designed to address diverse market needs (MxU). The C-Light portfolio of ONUs features a compact design, and is a cost-effective, high-bandwidth solution for any set of broadband "triple-play" services.

B-Light Residential, the most comprehensive portfolio of ONTs -- The B-FOCuS B-Light is a comprehensive family of Optical Network Terminations (ONTs) for optical broadband access. The B-Light family includes a wide range of ONTs specially designed to address diverse market needs. The B-Light portfolio of residential ONTs features a compact design, and is a cost-effective, high-bandwidth solution for any set of broadband "triple-play" services.

MDU/MTU Importance: ECI's Fiber-To-The-Premise (FTTP) B-Light and C-Light portfolios present a comprehensive line of feature-rich, user-friendly BPON ONTs and ONUs. Based on the ITU G.983 BPON standard, the ONTs/ONUs provide 622 Mbps upstream as well as an additional RF overlay. Hundreds of analog and digital TV channels, HDTV channels and Video-on-Demand streams, ultra high-speed data, multiple voice lines, and many more attractive services enabled for every subscriber, multiplying service providers' revenues and profits.

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What they do: Fiber Optic Network Solutions (FONS) Corporation has been designing and manufacturing a complete line of high performance passive fiber-optic components and inter-connect solutions for over a decade. Due to its experience and expertise in passive technology, FONS has emerged as a leader in FTTP passive connectivity and now offers a broad range of PON passive component products and solutions for this market. FONS' solution enables customers to implement Fiber-to-the-Premise (FTTP) access networks using industry certified, best of breed passive fiber connectivity solutions. FONS' suite of products extend through all areas of the FTTP network and include solutions for Central Office/Head End, Outside Plant and Customer Premise applications. FONS' FTTP offering includes such products as fiber distribution hubs, OSP enclosures, fiber distributing frames, Telcordia certified cable assemblies, entrance splice cabinets, optical component modules, rack mount enclosures/shelves, and customer premise enclosures. FONS FTTP customers extend to the Municipal, RBOC and IOC markets.

MDU/MTU Importance: Broadband networks will enable the applications and services required to support the next phase in the information revolution that will transform our economy and the quality of life for everyone. The outlook for fiber has never been brighter now that it is practical and affordable to connect fiber directly to the premises. Newer Fiber-to-the premises (FTTP) networks including Fiber-to-the-home (FTTH), Fiber-to-the-business (FTTB) and Fiber to Multiple Dwelling Units (MDDU) provide economical and practical networks today. As a supplier within the FTTP market, FONS is unique in that its solution allows customers to cost-effectively extend fiber in the first mile to serve end customers with innovative Fiber-to-the-Premise solutions. FONS' solution supports today's high bandwidth applications and requirements for triple play services and provides an effective, high quality method for quickly providing service in new installations or service points. FONS FTTP products are proven and independently tested by Telcordia and Underwriters Laboratories.

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What they do: A national telecommunications contractor specializing in last mile solutions for residential fiber optic networks. Our services

include network consulting, project management, design/engineering, aerial/underground construction, coax/fiber splicing, inside premise wiring, emergency restoration and service/maintenance.

MDU/MTU Importance: Team Fishel is a turnkey provider to builders, developers, municipalities, cable TV operators, and telecom companies. On projects large and small, we provide innovative solutions to meet today's growing broadband needs. With 67 years experience and 20 offices nationwide, we have 1500 Teammates providing complete solutions for your telecommunications needs.

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HITACHI
Inspire the Next

What they do: The Hitachi products include: AMN1200 OLT (CO/headend unit): FSAN/B-PON compliant, low cost, moderate density, triple play (voice, video, data), NEBS, 19/23", 704 ONTs per shelf (2816 per 7' rack), incremental addition of 100M Ethernet network (trunk) ports with traffic/QOS segmentation; AMN1210 OLT: FSAN/B-PON compliant, higher density, triple play, NEBS/OSMINE, 19/23", 1152 ONTs per shelf (3456 per 7" rack), GbE and/or OCn ATM trunks, integrated L2/L3 switch, G-PON upgradeable.

In addition, products included ONT (end terminal) Family with either OLT, which consist of: ETU (Ethernet only, low cost); SFU (2-4 POTs, 2 Ethernet, 1 RF Video with return); MDU (8 POTS, 4 Ethernet, 4 RF Video with return); MTU (0-4 POTS, 0-4 Ethernet, 0-4 RF Video, 0-4 T1). Also, the AMN1100 Point-to-Point Media Converter: cost effective, 100Mbps Optical Ethernet, up to 30km, single fiber, remote management from CO/headend (MCC) to remote unit (MCR), option for remote VDSL unit with up to 128 users.

MDU/MTU Importance: Hitachi has the leading FTTx installed base with 400,000+ PON and Point-to-Point (PtP) units in service in Japan, Australia, and now starting in North America. (current shipments of ~30,000/month). With volume production, Hitachi has field-proven quality and industry leading low failure rates. The FTTx product line for North America is the broadest including PON and PtP for users requiring secure, non-shared access. Hitachi is a field proven supplier to major network operators (Sprint, Time Warner Cable, Global Crossing) in North America since 1975. They are also the #1 supplier of PBX voice switches to hospitality market (hotel/resort, extended stay, residential) with installed base of over 5,000 systems.

They are the only vendor supporting "Any Service, Any Format" simultaneously in same system; Voice (VoIP and/or POTS); Video (RF analog/digital, IP Video, Switched Digital, HDTV); Video Control (legacy set-top box RF return, voice/dialup return, data/Ethernet return); and Data (100M/1000M Ethernet and/or ATM OCn interfaces).

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InfiniSys

What they do: InfiniSys, Inc. specializes in standard based low voltage designs for MDU properties including luxury, tax credit, market rate and on-off-campus student housing. The designs include technology-based amenity solutions utilizing structured wiring systems while also providing a variety of support options. Our services include: Market Assessment of the Residents desire for adoption of Technology, Detailed Engineering and Design (CAD drawings and SOW's), Service Provider Contract Negotiations, Installation Project Management and Support, Quality Assurance, Post-Installation

Support including Sales and Maintenance Training. InfiniSys provides technology assessments that rate the current level of technology available at the property: both for acquisition valuation and upgrade – property positioning. We have developed the TechApartmentSM Rating System to assist an Owner in evaluating technology on their properties. MDU/MTU Importance: Low voltage wiring design, technology consulting and contract negotiation specifically for the MDU marketplace is critical to property owners who are in a constant battle against each other to offer the right mix of amenities. The design, implementation and project management of the system installation directly affects the ability to add new services, the cost associated with installation and services provided to the residents.

Infrastructures must support the amenities owners wish to offer to attract residents while staying flexible. They must also have the ability to grow and add new services. InfiniSys designs complete systems and specifies products that have been tested and approved for use in the Multi Family environment.

In our ever changing world of technology it is essential to have a technology integration partner to assist owners in making decisions about the type of technology to be installed and knowing that it is capable of supporting future services. InfiniSys does the research and testing for all of our owners and creates infrastructures that are able to support the lifestyles uniquely created for MDU residents.

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What they do: INS offers consulting services and software that help broadband service providers plan, build, secure, and manage their operations infrastructures. INS ImageControl™ software supports inventory discovery and tracking for all SNMP-enabled CPE devices, including compliant MDU/MTUs, by region, edge router, vendor, make, version, and more. ImageControl utilizes this inventory and topology information to stage and initiate firmware updates to CPE based on DOCSIS standard methods (SNMP/TFTP). If firmware updates are not desired, INS InventoryControl™ software for inventory/location discovery and tracking is available as a separate product. INS NetControl™ software supports next generation IPv4/IPv6 address management. NetControl models your IP network for internal, CPE, and customer IP addresses by topology, geography or other user-defined means, and provides automated IP address block allocation, data collection for planned vs. actual analysis, and IP address utilization trending with alerts that enable you to effectively manage your IP address capacity.

MDU/MTU Importance: Service providers need to deploy FTTP CPE quickly to accelerate the flow of revenue. However, as technology evolves, deployed CPE may need fixes or feature updates, especially in a multi-vendor MDU/MTU environment. INS's InventoryControl™ software provides topology-based CPE device discovery and inventory. ImageControl™ incorporates the InventoryControl™ component to effectively identify, stage, and download firmware updates based on a SNMP/TFTP process. This allows broadband service providers to identify what vendor/make/version of CPE is located at specific points within their network topology and to automate the firmware update process. Each CPE device, including customer IP devices within the household, will require an IP address. NetControl™ software helps the broadband service provider allocate IP address space effectively, automate replenishment with Internet Registries, monitor IP address capacity, and alert on pending address outages. NetControl™ can help you assure your IP network has the address capacity it needs where it needs it.

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Leading Optical Innovations

What they do: OFS is a designer, manufacturer, and supplier of optical fiber, optical fiber cable, optical connectivity, and specialty photonics products for Fiber-To-The-Premise deployments. OFS, formerly the Optical Fiber Solutions division of Lucent Technologies Inc., has a proven track record of product innovation. As an example, OFS introduced the Access Advantage™ system consisting of a suite of products optimized to extend the performance capabilities of all Passive Optical Networks (PON) and point-to-point type networks to subscribers in MDUs and MTUs. The Access Advantage system consists of: Award winning low-loss AllWave ® Full Spectrum fiber; low- loss splicing performance; low- loss LC or SC connectors; low- loss splitters; bend loss insensitive Blue Tiger™ jumpers; MDU/MTU optimized Fiber-To-The-Premise cable interconnection and splitter management devices; and Accubreeze™ Air-Blown Optimized cables, Fortex™ DT Loose Tube optical fiber cables, and riser and plenum rated optical fiber cables.

MDU/MTU Importance: Introduced in early 2003, OFS' Access Advantage system has been designed to help provide developers a simple, optimized, optical fiber and optical connectivity solution for Fiber-To-The-Premise deployments. With a wide variety of products tailored for the unique installation challenges of the MDU/MTU campus, OFS products provide a solution that will insure a cost-effective network capable of meeting the bandwidth and services demands of current and future applications. Costs for deploying a PON solution are now converging with more archaic copper based systems.

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What they do: Pirelli is a worldwide manufacturer of optical fiber cable with over 125 years of experience in the cabling business. Pirelli offers a full range of optical fiber cabling products for every environment, from the Outside Plant (OSP) to the Premises. From long haul to LAN, single-mode to multi-mode, Ribbon in Loose Tube to Tight-buffered, Pirelli has a cable to meet your needs.

Pirelli has been active in FTTx for years, and is a

founding member of the Fiber to the Home Council. Pirelli has always taken a "hands-on" approach to this market. Our experience has been distilled into entirely new cable designs that maximize installer productivity and network reliability. And, our existing designs have been updated to make fiber installation go smoothly throughout the network. If optical fiber is in your plans, Pirelli has the cable to make it work in the real world.

MDU/MTU Importance: The question is not if, but when (and by whom) fiber will be delivered to your customers' homes and businesses. Older technology may be adequate for today's applications, but is sure to need replacement eventually. Like an old country road, it will become increasingly impractical to use and maintain as traffic grows.

Pirelli's products are important for two key reasons. First, our cable designs ensure that your fiber network can be built efficiently. This helps to control labor costs, which are a primary component of first-installed cost. Second, our cables ensure reliability. Well-built fiber networks can be maintained for a fraction of the budget required for other technologies. But, the fiber is only as reliable as the cable that protects it. The physical fiber plant is an asset that must be built efficiently and last for decades. Pirelli can make those requirements a reality.

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What they do: Road 9, Inc. is a privately held company that designs, builds and operates Fiber to the Home (FTTH) networks. Built by hand-picked veterans of the communications industry, Road 9 is a one-stop communications solution for developers and property managers.

Road 9 established the new paradigm for private "state-of-the-art" Ethernet high-speed networks (100 Mb) for residents, tenants, and businesses. Our business model, built upon this single network, enables the distribution of high-speed Internet services, interactive IP-based TV, HDTV, true Video on Demand (pause/rewind/fast forward), enhanced telephony, remote security cameras and alarm monitoring, and other market-defined services. Our technology enables network owners, for the first time, to control and share in these lucrative revenue streams previously the domain of a few large providers. These services are provided at a managed, dedicated level of quality that far exceeds today's industry norm while priced at or below those lesser services offered by incumbent providers. Road 9 operates these networks long-term. We provide Service Level Agreements to network owners, and provide joint marketing support to enable the property management and sales force to take full advantage of these exciting new services.

MDU/MTU Importance: The MDU/MTU market is competitive. Developers are seeking market differentiation and revenue enhancement opportunities. Road 9 services represent a significant leap in technology and bandwidth that has never before been widely available to subscribers. These product and service offerings can drive an ever-increasing recurring revenue stream to network owners, increase property values and enhance absorption rates. New and future network enabled services such as telemedicine, distance learning, smart home, full-motion video conferencing and HDTV are supported by our network with no network upgrades required.

The developer, or designated association, may own the network and participate in a revenue share opportunity. Network ownership can be maintained or transferred back to Road 9 using one of our flexible ownership arrangements. Road 9 can help finance the network build out through a variety of financial vehicles. The resulting recurring revenue stream for services over the life of the network can provide the Network owner with IRRs of 15% or better.

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What they do: Sumitomo Electric Lightwave expands your bandwidth opportunities through its next generation products, which minimize costs for FTTP and the Access and Enterprise networks. Utilized by major service providers, Sumitomo introduces its new drop and distribution cables, PureAccess bend-insensitive fiber interconnect solutions for premise wiring; first-to-market full-featured FTTP fusion splicers; and FutureFLEX Air-blown Fiber, the world's most advanced LAN infrastructure adopted by the Pentagon, ESPN, CNN, Starbucks Coffee, Nissan, and numerous properties such as the new Washington Convention Center, Hilton Hotels, Embarcadaro Center – San Francisco, and MGM Grand.

MDU/MTU Importance: Rated #1 in financial stability and customer loyalty by the industry analyst group, Frost & Sullivan, Sumitomo Electric Lightwave is a leader in the innovation of Fiber-to-the-Home (FTTH) and Fiber-to-the-Premise (FTTP) solutions. Our parent company, Sumitomo Electric Industries, has led the FTTH/FTTP technology in Asia and brings its experience, technology, and cost effective strategies to North America. Among the full FTTP solutions, Sumitomo is also leading Fiber-in-the-Premise with its FutureFLEX Air-blown Fiber system, which eliminates dark fiber, saves as much as 10 times the time and cost of conventional premise infrastructures, and ensures against obsolescence of your network. With FutureFLEX, you can blow in any type of fiber when and where you need it for a fraction of the cost. So, Sumitomo can offer the most effective means to deploy fiber to AND in the premise, ensuring continuous positive ROI.

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What they do: Wave7 Optics Inc. is a market leader in the fiber-to-the-home, -curb and -business (FTTX) optical access market. The company's Last Mile Link® system obliterates the cost and implementation barriers that have, to date, stymied the deployment of FTTX systems. The LML is the industry's first intelligent PON system, for "triple play" or other services. The advanced broadband services offered via the LML are ideal to meet the voice, video and data demands of MTU and MDU subscribers, all at an extremely compelling

price point.

MDU/MTU Importance: The Last Mile Link® provides network providers an extremely advanced architecture over which all types of services can be deployed to meet the varied requirements of MTU and MDU customers. The LML provides the entire suite of triple play services on a single fiber including:
Video: 50-870MHz CATV and IP Video; Voice: Analog Telephony (POTS and DS1) and Voice over IP
Data: Ethernet (up to 500Mbps per subscriber). The flexibility of the LML allows the network to be scaled as customer penetration warrants, thus tying capital expenditure to a success-based model. Also, the LML customer premises devices allow each and every subscriber port to be independently managed, and billed, giving the network operator immense flexibility in billing while substantially decreasing operational expenses.

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What they do: Founded in 1994, Zero dB is an experienced engineering and consulting firm that creates network and facility solutions to meet the voice, video, and data needs of our clients. Zero dB provides the services necessary to initiate a Broadband strategy that will provide for sustainable business growth and development. The following is a partial list of the services provided by Zero dB: Strategic Planning; Feasibility Studies and Business Planning; Network Engineering; Facilities Engineering; Project Management and Implementation.

Zero dB has made a broad and deep commitment in providing the engineering and consulting expertise required to support Broadband network projects. Our broadband clients include Municipalities, Greenfield Developers, and Public Utilities. We have clients in the manufacturing and content provider sectors of the industry. Zero dB is a Platinum Member of the FTTH Council, serves on its Board of Directors and is involved with its research committees.

MDU/MTU Importance: Broadband networks have the potential to significantly improve the quality and quantity of communications services. If properly conceived, planned and implemented they can create the foundation for sustainable development and growth both in the residential and commercial sectors of the local economy. All community groups will directly benefit from the program; from schools, hospitals, businesses, and residences to municipal organizations and agencies.

Broadband network initiatives come in several varieties, fiber to the home, the business or both. Whether undertaken by public or private entities, several criteria must be met: cost effective; sustainable; scalable
multiple service capable; efficient operation; and profitable.

Zero dB has vast experience in the development of broadband access networks based on the above criteria. It is this experience that allows the successful launch of a program for broadband delivery focused on those requirements specific to the network application.

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What they do: Zoomy Communications, Inc. (ZoomyCo) provides turnkey design, engineering, construction management and ongoing consulting, operational management and maintenance of FTTP (Fiber-to-the-Premise) networks. In addition to providing design and engineering services, ZoomyCo assists developers and communities by providing Business Plans and Feasibility Studies for these networks. This ensures the network not only fits well from a technology standpoint, but also makes sense as an investment.

ZoomyCo's employees are veterans in assisting real estate developers, state and local government agencies and telecommunication providers to deploy technology infrastructures. Our consultants have a minimum average of twenty-six years of experience in the telecommunications industry. Our designers have an average of over thirty years of experience in outside plant infrastructure design and engineering. ZoomyCo can provide MDU/MTU developers with a state of the art infrastructure in which the developer retains control and creates a recurring revenue stream.

MDU/MTU Importance: FTTP networks can support voice communications, Voice over IP services, very high-speed data and Internet services, cable TV, video-on-demand and high definition TV, and numerous other applications. Fiber enables communication rates up to 1000 times faster than DSL, wireless and cable modem speeds, offering MDU/MTU developments a competitive advantage within the industry. By offering a scalable and future proof network, properties exhibit an obvious differentiation from properties that do not. Effective FTTP designs scale well within high-density developments, resorts, office parks and campus environments. Health Science Centers can enable the exchange of massive amounts of data and large image files if enabled by such networks. Businesses will most certainly choose locations with FTTP over other alternatives. Resorts can offer movies on demand in a manner that gives them greater control, and probably a larger portion of revenue. These are a few of many benefits realized within MDU/MTU environments.