

BBP TOP 100 in the Fiber Market – 2006

Our staff researched almost 500 companies to find the best of the best for FTTH in 2006

A BBP Staff Report

Vision. Great execution. Courage. Our Top 100 companies have all of that, and more. Nevertheless, many companies with all of the attributes we look for – in fact, successful companies that made the list last year – are missing this year. The reason: The target has moved. Fiber has continued to mature. Today, thanks to many companies, the cost of fiber-optic deployments is little more than half what it was a year ago. Demand for broadband content is greater. The technology risk compared to coax and other competing broadband approaches is nil. In fact, the risk of NOT deploying fiber is very real, and increasing.

Last year, for instance, we honored housing developers such as Pulte and Roseland Property. And why not? Last year, they helped lead the way in their industry. They were among the earliest developers to incorporate fiber to the home into their business plans. They're still great companies. But this year, the rest of the industry has started to catch up. What was uncommon corporate vision and courage last year is becoming, well, common. We'll continue to honor individuals at such companies, of course.

Last year we honored RBOCs SBC (now AT&T) and Verizon, as well as Comcast, Time-Warner Cable and other MSOs. This year, only one of the telecommunications-video-data giants scored a repeat: Verizon Communications. Verizon won our hearts with its FTTH FiOS deployment, of course, but also its Enhanced Communities division – renamed from Verizon Avenue – which has brought broadband to 1 million MDU, condo, coop, dormitory and PUD dwelling units. We continue to honor many bold individuals at the MSOs and other RBOCs as well (most recently, in our May issue). But aside from Verizon, the innovation and vision, execution and courage is taking place at smaller, in-

dependent telcos and cable companies. Some made the Top 100 list this year.

Last year, it took some courage to start a VoIP service. This year? Mainstream.

Last year, there were just a few companies offering to build fiber networks for (or with) developers regionally or nationwide. This year, the best got better and more innovative, and many of them (Connexion Technologies, ZoomyCo and others) made the list.

Does size matter? Not for our Top 100. The smallest, newest company on the list – Tenvera – is just gearing up to start operations this fall. The oldest companies on the list are well past their hundredth anniversary and a few employ around 100,000 people and operate worldwide.

For us, the tiebreaker question was this: Will this company make a difference in the fiber broadband industry in the coming year? To put it another way: Would the industry suffer if this company did not exist?

Judge for yourself. And let us know about organizations – large and small – you think might make a difference a year from now. Your nominations led us to examine almost 50 companies this year, and 11 made the list – companies we might not otherwise have known about.

About the Authors

Our Top 100 list was researched by Robert Calem, Andria Cimino, Rachel Ellner, Cassandra Kania and Chris Stuart, supervised by Contributing Editor Masha Zager and Editor-in-Chief Steve Ross. Suggestions for next year? E-mail steve@broadbandproperties.com.

Top 100			
180 Connect	www.180connect.net	516-558-3700	Installation, integration and fulfillment services
3M Company/ Communication Markets Division	www.3M.com/telecom	800-426-8688	Interconnection, fiber management and facilities protection products for broadband networks
ADC Telecommunications	www.adc.com	952-938-8080; 800-366-3889	Fiber and copper connectivity products, broadband switches and routers, wireless equipment, professional services
Adesta	www.adezagroup.com	402-233-7700	Design, construction and maintenance of stand-alone or integrated communication networks and security systems
Adtran	www.adtran.com	256-963-8000	More than 500 products including local loop access and deployment products for fiber, DS3, T1/E1, wireless T1/E1, DSL, Frame Relay, ATM, ISDN, and DDS – including multi-service access platforms and IADs for converged voice and data networks
AFL Telecommunications	www.aftelecommunications.com	864-433-0333; 800-235-3423	FTTx electronics, fusion splicers, test equipment, both fiber and copper interconnect products, and systems engineering
Alcatel	www.alcatel.com	972-519-3000	IPTV solutions, broadband access equipment, I P routing platforms, NGN mobile network solutions, service integration capabilities, network management tools, optical fiber, fiber cable, connecting hardware and accessories, right of way solutions, and optical transmission equipment
Alliance Fiber Optic Products	www.afop.com	408-736-6900	High-performance fiber optic components, electronics, and integrated modules.
Allied Telesis	www.alliedtelesis.com	800-424-6596	iMAP intelligent Multiservice Access Platform, iMG intelligent Multiservice Gateways, carrier-grade Layer 3 Gigabit and 10G switches, WDM-based optical transport, Layer 2 managed, Websmart and unmanaged switches, wireless, VoIP, media converters and NICs
Alloptic	www.alloptic.com	925-245-7600; 866-255-6784	Symmetrical Gigabit Ethernet Passive Optical Network (GePON) solutions
Alpha Technologies	www.alpha.com	360-647-2360	FTTH power supplies/UPS broadband UPS, power system controllers & supervisory, AC and DC generators, solar inverters/UPS
Amedia Networks	www.amedianetworks.com	732-440-1992	Premises gateways and switched Ethernet access solutions
American Power Conversion (APC)	www.apcc.com	800-788-2208	Data center and server rooms, rack systems, cooling solutions, UPS, management tools, surge protection and power conditioning, audio-video solutions, power distribution, power generation, DC, broadband power systems, notebook and mobility solutions, networking and cable solutions
APA Cables and Networks	www.apacn.com	763-476-6866	Fiber optic components for independent telcos, cable-TV providers and municipal networks

Applied Optoelectronics	www.ao-inc.com	281-295-1800	Diode lasers, photodiodes, external cavity lasers, and related modules and equipment for CATV, FTTx, and wireless uses
ARNCO	www.arncocorp.com	800-321-7914	Cable products including FTTx fiber solutions, nonmetallic conduit, UL approved high-density polyethylene conduit products for direct burial or concrete encasement, hydraulic lubricants, pull tapes, and cable-pulling and placing equipment
Astec Underground	www.astecunderground.com	865-408-2100; 800-527-6020	Trenchers, vibratory plows, boring machines and directional drilling equipment
Atlantic Engineering Group	www.atlantic-engineering.com	706-654-2298	Fiber optic design, engineering, construction, construction management, installation, and contract operations services
Blonder Tongue Laboratories	www.blondertongue.com	732-679-4000; 800-523-6049	Video headends, high-speed data, telephony, microwave, fiber optics, distribution, addressable subscriber provisioning, test equipment and technical training
BroadLight	www.broadlight.com	650-937-1130	Standards-based communication semiconductors and software solutions
Broadweave Networks	www.broadweave.com	801-407-6000	FTTH and FTTP networks
C-Cor	www.c-cor.com	814-238-2461; 800-233-2267	Optical access and transport systems
Calix	www.calix.com	877-766-3500, 707-766-3000	Multiservice access management software; Multiservice access platforms (MSAPs); FTTP OLTs and ONTs; IP service edge nodes (SENs) for FTTH; enclosures; software
Canobeam (Free Space Optics division of Canon)	www.canobeam.com	201-807-3300; 800-321-4388	Optical transceivers
Charles Industries, Ltd.	www.charlesindustries.com	847-806-6300	Outside plant environmental protection solutions for copper, fiber, coax and wireless applications; voice and data transmission products
Cisco Systems/Scientific Atlanta/ Linksys	www.scientificatlanta.com , www.cisco.com	770-236-5000	Headend equipment, addressable network management systems, cable modems, and digital set-top boxes and accessories, routers, switches, wireless (Linksys division)
Clearmesh	www.clearmesh.com	626-535-2800	Wireless optical mesh solutions for metro grids: ClearMesh 300 (CM 300) node and the ClearMesh Management System (CMS)
CoBank	www.cobank.com	800-542-8072	Infrastructure loan products and financial services
CommScope	www.commscope.com	800-982-1708	Cable and connectivity products including hybrid fiber coaxial cable, fiber-optic, and wireless integration products
Communications Data Group (CDG)	www.cdg.ws	888-234-4443	Billing and provisioning systems
Connexion Technologies	www.cnxntech.com	919-674-0036	Networks and network services
Corning	www.corning.com	828-901-5880	Optical fiber and cable, coaxial interconnect systems, telecommunications hardware and equipment

Communication Technology Services (CTS)	www.cts1.com	800-834-5838	Scalable network design, construction and management for enterprise-level companies and service providers
Ditch Witch/ The Charles Machine Works	www.ditchwitch.com	800-654-6481	Construction tools for laying fiber
Draka Comteq	www.drakacomteq.us	800-879-9862	Optical fiber and cabling solutions for telecommunications carriers, utilities, installers and enterprises delivering broadband services
Dura-Line	www.duraline.com	800-847-7661	Fiber optic conduit
Emerson Network Power - Marconi	www.emersonnetworkpower.com	440-246-6999; 800-800-1280	Power, connectivity and precision cooling solutions, supplies and systems
Emtelle	www.emtelle.com	602-953-6657	Ducted network and air blown fiber technology
Enablence	www.enablence.com	613-270-7860	PLC-based FTTH triplexers and diplexers
Entrisphere	www.entrisphere.com	408-970-2000	ONTs, OLTs, ADSL2+, VoIP exchanges, IPTV, Ethernet network management
Ericsson	www.ericsson.com	972-583-0000	Enterprise solutions including support for VDSL2 market, Ribbonet broadband installation solution for FTTx applications, cables and interconnect products, microwave networks, enterprise solutions, network management tools, and a wide product line of stations and broadband switches
ETI Software Solutions	www.etisoftware.com	770-242-3620	Convergent cable billing, provisioning and subscriber management services (Pay-Per-View, Pay-Per-Day services)
Foxcom	www.foxcom.com	609-514-1800	Satellite downlink signal transport, fiber to coax modules
Fujitsu Network Communications	us.fujitsu.com/telecom	800-777-FAST	ONTs and OLTs, complete fiber network solutions, wireless
Gibson Technical Services (GTS)	www.gibsontech.com	888-849-9287	Design and consulting services and equipment for cable system operators and equipment manufacturers
Harmonic	www.harmonicinc.com	800-788-1330; 408-542-2500	Digital video and fiber optic systems for network operators
HDNet	www.hd.net	214-651-1446; 303-542-5600; 888-919-HDTV	High-definition television programming
Hitachi Telecom (USA)	www.hitel.com	770-446-8820	Optical access solutions, optical transport equipment, and electronic and optical components
InfiniSys	www.electronicarchitect.com	386-236-1500	FTTA Fiber-to-the-Apartment system, managed in-unit WiFi, low voltage system engineering and integration, service provided contract negotiations, project management
JDS Uniphase	www.jdsu.com	408-546-5000	Fiber optic communications components and testing equipment; T-BERD 6000/MTS-6000 Compact Optical Test Platform
KiS Communications Construction	www.kis-comm.com	731-986-0178	Engineering and technical services for broadband service providers

KT Communication	www.ktcom.tv	877-485-3557; 573-446-3693	Satellite-delivered video programming
Leviton Manufacturing	www.leviton.com	718-229-4040	Premises wiring and home automation
Martin Group	www.martin-group.com	877-219-5646	Software solutions; business and engineering services
MetaSwitch	www.metaswitch.com	510-748-8230	Class 4/5 softswitches
Michels Communications	www.michels.us	920-583-3132	Fiber optic network construction
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)	888-944-HELP (BCS); 866-515-5825 (Canopy)	Broadband access and delivery products and technologies including WiFi, cable modems, cordless phones, digital audio players, home entertainment, home monitoring and control, VoIP, and home networking
MRV Communications	www.mrv.com	800-338-5316	GePON, Free-Space Optics, VDSL, MPLS, components, network management
Netcentrex	www.netcentrex.net	888-547-9897; 408-450-5930	IP-based triple-play and FMC software solutions for next-generation consumer and enterprise communication services
NorthStar Communications Group	www.northstar.net	877-862-8682	Services for telecommunications infrastructure, and engineering and design outsourcing
On Trac	www.ontracinc.net	423-317-0099	Consulting, design and installation services.
Optelian Access Networks	www.optelian.com	877-255-9428	Optical transport solutions; DWDM and CWDM products
Optical Cable Corp.	www.occfiber.com	540-265-0690	Optical cable
Optical Entertainment Network (OEN)	www.fision.net	713-357-9600	FISION Triple-Play service
Optical Fiber Solutions (OFS)	www.ofsoptics.com	770-798-5555; 888-342-3743	Optical fiber, optical cable, optical connectivity and specialty photonics
Ortronics/Legrand	www.Ortronics.com	877-599-5393	Structured wiring, cable and fiber assemblies, associated hardware, engineering services
PacketFront	www.packetfront.com	603-888-5100	Integrated control and provisioning system, switches, routers, IPD, DSLAMs
Pannaway	www.pannaway.com	603-766-5100	OLTs, ONTs, ADSL equipment, network management
PMC-Sierra	www.pmc-sierra.com	408-239-8000	Networking chips, FTTH/PON, wireless BSC/BTS solutions, digital home convergence, storage chips, laser and multifunction printer chips, microprocessors, and SERDES and ReTimer devices
Preformed Line Products	www.preformed.com	440-461-5200	Underground and overhead cable and wire installation and maintenance products and systems
Primal Solutions	www.primal.com	949-260-1500; 800-438-0921	Advanced Internet Protocol (IP) mediation; real time event rating; prepay solutions for voice and data services on IP networks and a convergent billing software solution
Proxim Wireless	www.proxim.com	800-229-1630	Wireless gigabit, wireless backhaul, WiMax, Wi-Fi mesh, wireless LAN, and network management systems
RadUSA (RAD Data Communications)	www.radusa.com	800-444-7234	WAN access equipment and solutions

Redcom Laboratories	www.redcom.com	585-924-7550	Telecom switching systems, emergency systems
SaskTel International	www.sasktel-international.com	800-667-5801; 306-777-4509	Software solutions; networking and professional services
SENKO Advanced Components	www.senko.com	858-623-3300	Over 1000 fiber optic products for the telecom and data communications industries worldwide, including connectors and adapters; fiber arrays and v-grooves; metalized and lensed fibers; PM couplers; beam combiners; thin-film filters, and fixed optical attenuators and terminators
Shentel (Shenandoah Telecommunications)	www.shentel.com	800-743-6835	ISP services, telephony, wireless, long-distance, Internet, and cabling services for the Mid-Atlantic region
Siemens Communications Group	www.usa.siemens.com/communications	800-310-6308	Communication products and services; convergent technologies, products and services for wireless, fixed and enterprise networks
Stratos International	www.stratoslightwave.com	708-867-9600	Optoelectronic, fiber optic, RF and microwave components and subsystems, custom fiber assemblies, test equipment
Sumitomo Electric Lightwave	www.sumitomoelectric.com	919-541-8100; 800-358-7378	Optical fiber cable, fiber management systems, cable assemblies, fiber cabling systems, fusion splicers and equipment, test equipment, interconnect assemblies and components
SureWest Communications	www.surewest.com	866-787-3937	Full range of telephone, data, IPTV, wireless services
Team Fishel	www.teamfishel.com	614-274-8100; 800-347-4351	Utility construction and network installation services
Telco Systems	www.telco.com	800-227-0937	TDM multi-service transport and access products, multiplexers, distribution hubs, transport terminals, and digital cross-connectors
Tellabs	www.tellabs.com	630-798-8800	Digital cross-connect, optical transport, switches, network management, managed access, voice-quality enhancement
TelStrat	www.telstrat.com	972-543-3500	Business call recording, business call conferencing, and remote network solutions
Tenvera	www.tenvera.com	615-224-9300	Systems integrator, home and business fiber optic network solutions; offers Ericsson's two complete lines of blown fiber technology
Terawave	www.terawave.com	510-429-5300, 866-766-8372	OLTs, ONTs, Integrated Network Terminals (INTs), management-layer software
TetraTech	www.tetrattech.com	626-351-4664	Communications services including network assessment and business planning, program and project management, property rights acquisition, zoning and permitting, design and engineering, and operations and maintenance
Transition Networks	www.transition.com	952-941-7600; 800-526-9267	Copper-to-fiber media conversion

TT Technologies	www.tttechnologies.com	800-533-2078	Trenchless equipment including piercing tools, guided boring tools, pneumatic, static and lateral pipe bursting systems, pipe ramming tools, bentonite mixing systems, constant-tension winches, directional drills and mini- directional drill rigs
Verizon, Verizon Enhanced Communities, Verizon Wireless	www.verizon.com/fios , connected.verizon.com	212-395-2121	FiOS fiber optic and DSL-based communications services, including video, voice, and data; wireless services
Vermeer Manufacturing	www.vermeer.com	888-837-6337; 641-628-3141	Horizontal directional drilling equipment
Vision Broadband Now /New England Broadband	www.visionbroadbandnow.com or www.newenglandbroadband.net	866-333-6321 or 603-425-6377	Installation and constructions services for planned and MDU communities, consumers and small businesses
Wave7 Optics	www.wave7optics.com	678-339-1040	Optical broadband access systems
Westek Electronics	www.westek.com	831-465-3500; 800-526-CORD (2673)	Custom fiber and coax test and patch cabling, cable assemblies, fiber jumpers, attenuators, adaptors, patches, cleaning kits, multi-breakouts, multi-fiber puller (Fiber Connector Insertion Removal Tool), web splitter kit, tech support laptop kit, tel-line tester.
White Rock Networks	www.whiterock.com	972-543-6900	Multi-service optical access, transport, and aggregation products
World Wide Packets	www.worldwidepackets.com	509-242-9000	Optical Ethernet access portals, concentrators, distributors and network management
Ygnition Networks	www.ygnition.com	206 574 5480	Triple-play services for MDUs and commercial data services
Zoomy Communications	www.zoomyco.com	970-928-7722	Design and engineering services, planning and feasibility studies, project management, network construction management, network operation and maintenance.
ZyXEL Communications	www.zyxel.com	714-632-0882; 800-255-4101	ADSL2/2+, VDSL, VDSL2, g.SHDSL IP DSLAM and CPEs, Ethernet switch/adaptor, Wireless LAN, Internet Security, VoIP, WiMAX, Network Management

1. 180 Connect www.180connect.net 516-558-3700

Key Products: Installation, integration and fulfillment services

Summary: 180 Connect provides technical support services including new installations, reconnections/disconnections, service upgrades/downgrades and service calls for video, data and voice applications. The company serves residential, commercial, and small to medium-sized business and premise-networking customers in the communications, security, home entertainment and home integration service industries. Headquartered in Woodbury, NY, it has more than 80 operating locations and employs about 4,000 skilled technicians, local

supervisors and support staff. Installation services include initial contracting through final certification and testing. Separate quality assurance and safety departments run independent of operations personnel. In 2006, the company deployed OntarioNet, the largest FTTH network in Southern California. 180 Connect is a member of the FTTH Council.

2. 3M Company/Communication Markets Division www.3M.com/telecom 800-426-8688

Key Products: Interconnection, fiber management and facilities protection products for broadband networks

Summary: With more than 30 years' experience in fiber

optics, 3M provides everything needed for a turnkey FTTP optical pipeline – the full universe of physical-media layer capabilities for FTTP implementation in the central office, outside plant and customer premises. These include: Discrete and multi-fiber splices and tools; epoxy, epoxyless and hot melt connectors in FC, SC and ST configurations; GGP cable assemblies using glass/glass/polymer fiber designed to be more flexible and durable than standard fibers; cross-connect and interconnect fiber cable management systems (ODF, FDU) and fiber organization trays for central office/headend, outside plant, customer premises or OEM applications; sealed and free-breathing aerial, buried and underground fiber optic splice closures and terminals; indoor and outdoor cabinets; Dynatel locating and marking products for fault finding, locating and permanent marking and mapping of buried facilities and points of special interest. The Communications Markets Division is a unit of 3M Co.'s Electro and Communications business, which is one of seven 3M operating business segments. Worldwide in 2005, 3M had 69,315 employees and sales of \$21.167 billion, up 5.8 percent from 2004. The company was awarded 487 U.S. patents last year. The Electro and Communications business generated sales worth \$2.33 billion, a 4.9 percent increase over 2004 sales. There was continued strong growth in emerging markets in Eastern Europe and Asia, particularly in China, and the business completed its acquisition of Siemens Ultrasound's flexible circuit manufacturing operation in California. 3M is a member of the FTTH Council.

3. ADC Telecommunications

www.adc.com

952-938-8080; 800-366-3889

Key Products: Fiber and copper connectivity products, broadband switches and routers, wireless equipment, professional services

Summary: ADC is a global supplier of network infrastructure products and services for the delivery of data, video, and voice services to consumers and businesses over wireline, wireless, cable, broadcast, and enterprise networks. The company's products include digital cross-connects, fiber termination and outside plant equipment, small-form-factor connectors, fiber and copper management systems, remote test and monitoring products, structured cabling solutions and an extensive portfolio of wireless solutions, including Wi-Fi and WiMAX. ADC employs approximately 8,200 professionals worldwide, holds thousands of patents, and had sales of \$1.2 billion (FY

2005). The company has sales, manufacturing and development offices in more than 35 countries and sells into more than 140 countries. ADC is headquartered in Eden Prairie, MN, and has regional sales offices in Berlin, Shanghai, and Berkeley Vale, Australia. ADC's customers include Bank of England, BellSouth, Bloomberg, British Telecom, Chase Manhattan, Cingular, Citi Bank, Deutsche Telekom, Ford, Glaxo Smith Kline, Hong Kong Telecom, Morgan Stanley, Sprint Nextel, Reliance Infocom (India), Rolls Royce, Qwest, T-Mobile, SBC, Seagrams, Verizon, and many others. ADC is a FTTH Council member.

4. Adesta

www.adestagroup.com

402-233-7700

Key Products: Design, construction and maintenance of stand-alone or integrated communication networks and security systems

Summary: Headquartered in Omaha Nebraska, Adesta is a systems integrator and project management company for communication networks and security systems. The company specializes in the design, creation and maintenance of multi-discipline networks. It also has experience with a wide variety of security systems. Adesta operates in five markets – commercial security, critical infrastructure, public safety, telecommunications and regional broadband initiatives – and has deployed more than 2 million miles of fiber and built more than 350 electronic security systems in the United States, Asia, Europe, Central America and the Middle East. The company also maintains 10 regional offices throughout the U.S., in Albany, NY; Chicago; Denver; Huntsville, Ala.; Los Angeles and Oakland, Calif.; Middletown, Conn.; Omaha; Rahway, NJ; and South Boston, Va. Customers have included the Mid-Atlantic Broadband Cooperative, the Chicago Transit Authority, the California National Guard, the State of Connecticut, the State of Omaha, the New Jersey Turnpike Authority and the U.S. Army Corps of Engineers. Adesta's revenue in 2005 was \$65 million and its employee count was 280. It is a FTTH Council member.

5. Adtran

www.adtran.com

256-963-8000

Key Products: Adtran manufactures more than 500 products including local loop access and deployment products for

fiber, DS3, T1/E1, wireless T1/E1, Digital Subscriber Line (HDSL, HDSL2, HDSL4, SDSL, SHDSL), Frame Relay, Asynchronous Transfer Mode (ATM), Integrated Services Digital Network (ISDN), and Digital Data Service (DDS) digital services – including multi-service access platforms and Integrated Access Devices (IADs) for converged voice and data networks

Summary: Incorporated in 1985 after the divestiture of AT&T and new restrictions on Bell companies to manufacture network equipment, Adtran filled the void with the manufacture of network access products and continues to provide products for digital telecommunications applications, including Internet access, telecommuting, corporate connectivity, distance learning, video-conferencing, and teleradiology. The company's customers include RBOCs, ILECs, independent carriers, competitive service providers, interexchange carriers, ISPs, and private and public enterprises worldwide. Headquartered in Huntsville, Alabama, Adtran is a NASDAQ 100 Index stock, and is responsible for over three million local loops operating worldwide. It operates sales offices throughout the United States and around the world – in Australia, Canada, China, Germany, Ireland and Mexico. In 2005, Adtran's sales increased 12.9 percent over the previous year to \$513 million.

6. AFL Telecommunications

www.aftelecommunications.com

864-433-0333; 800-235-3423

Key Products: FTTx electronics, fusion splicers, test equipment, both fiber and copper interconnect products, and systems engineering

Summary: AFL Telecommunications provides fiber optic products, engineering expertise and integrated services to the telecommunications industry for the transmission of video, voice and data. AFL, which has more than 2,000 employees worldwide, is now a division of Fujikura Ltd. Sales, with manufacturing and administrative offices located in the U.S., United Kingdom, Mexico and China. (Fujikura bought out Alcoa's share in 2005.) The company serves the electric utility, broadband, telco, OEM, wireless and private network markets. Its customers include regional and long distance telephone carriers, electric utilities, cable television operators, wireless service providers, data communication providers, private network operators and equipment manufacturers. Its product brands include Fujikura splicers, Noyes test and in-

spection equipment and Keptel fiber and copper interconnect products. The company is a member of the FTTH Council.

7. Alcatel

www.alcatel.com

972-519-3000

Key Products: IPTV solutions, broadband access equipment, IP routing platforms, NGN mobile network solutions, service integration capabilities, network management tools, optical fiber, fiber cable, connecting hardware and accessories, right of way solutions, and optical transmission equipment

Summary: Alcatel, a worldwide telecommunications giant, provides communications solutions to telecommunication carriers, Internet service providers and enterprises for delivery of voice, data and video applications to their customers or employees. Alcatel partners with many vendors and brings its technology in fixed and mobile broadband networks, applications, and services, to help its partners and customers build a user-centric broadband world. Earlier this year, it announced a merger with Lucent. As we went to press, Verizon Communications announced that Alcatel would be one of its three key suppliers for GPON equipment. With sales of \$16 billion and 58,000 employees in 2005, Alcatel operates in more than 130 countries. Alcatel is a FTTH Council member.

8. Alliance Fiber Optic Products

www.afop.com

408-736-6900

Key Products: High-performance fiber optic components, electronics, and integrated modules.

Summary: Alliance Fiber Optic Products designs, manufactures and markets a broad range of high-performance fiber optic components and integrated modules. These include passive optical components, such as interconnect systems, couplers and splitters; thin film CWDM and DWDM components and modules; fixed and variable optical attenuators; depolarizers. Based in Sunnyvale, Calif., the company serves emerging and leading communications equipment manufacturers, who in turn deliver optical networking systems to the enterprise, long-haul, metropolitan and last-mile access segments of the communications network. AFOP was founded in 1995, has 581 employees, and has manufacturing and product development facilities in the U.S., Taiwan and China. In 2005, AFOP generated sales of \$20.96 million. FTTH Council Member.

9. Allied Telesiswww.alliedtelesis.com

800-424-6596

Key Products: iMAP intelligent Multiservice Access Platform, iMG intelligent Multiservice Gateways, carrier-grade Layer 3 Gigabit and 10G switches, WDM-based optical transport, Layer 2 managed, Websmart and unmanaged switches, wireless, VoIP, media converters and NICs

Summary: Founded in 1987, and called Allied Telesyn until this spring, the company is a member of the Allied Telesis Group, a global provider of secure Ethernet/IP access solutions and an industry leader in the deployment of IP Triple Play networks over copper and fiber. Its POTS (plain old telephone service)-to-10G iMAP integrated Multiservice Access Platform and iMG intelligent Multiservice Gateways, in conjunction with carrier-grade Layer 3 switching, routing and WDM-based transport solutions, enable public and private network operators and service providers of all sizes to deploy scalable, 100 percent IP networks for the cost-effective delivery of packet-based voice, video and data services. The company is based in Bothell, Wash. Recent customers include the City of Loma Linda, Skyline Telephone Membership Corporation, Matanuska Telephone, Gardonville Cooperative Telephone Association, Livingston Telephone, SureWest Communications, San Jose State University, the U.S. Army and the U.S. Postal Service. Its 1,800 employees rack up annual sales of over \$500 million. FTTH Council member.

10. Allopticwww.alloptic.com

925-245-7600; 866-255-6784

Key Products: Symmetrical Gigabit Ethernet Passive Optical Network (GePON) solutions

Summary: Alloptic is a privately held company based in Livermore, California. It provides open standards-based passive optical equipment to simplify FTTP deployment to homes, multi-dwelling units and businesses. In addition to service providers, Alloptic's customers include developers, municipalities, public utility districts and multiple system operators. The company sells a complete suite of central office and customer premise equipment to service providers who deliver video, voice and data services to homes and businesses. This GePON pioneer was founded in 1999, holds two patents and has 16 patents pending. Alloptic counts C-Cor, Extreme

Networks, Minerva Networks, and Pace among its technology partners, and maintains ongoing multi-vendor interoperability and compatibility certification of its solutions. The company, which has 70 employees, would not divulge annual sales. Its last round of financing, in 2003, raised \$35 million. A member of the FTTH Council.

11. Alpha Technologieswww.alpha.com

360-647-2360

Key Products: FTTH power supplies/UPS broadband UPS, power system controllers & supervisory, AC and DC generators, solar inverters/UPS

Summary: Alpha Technologies was founded in 1976 to provide power supplies to the cable industry. These products comprise a significant portion of Alpha's total business and provide critical power conditioning and emergency backup to cable television delivery networks. Rapid growth in global communications, and the connection between system power and overall network reliability, created a strong demand for Alpha's products across a wide array of communication applications. Alpha Technologies is a major player in power systems to the broadband communications industry worldwide. Alpha's customer base includes major cable television system operators, telecommunication service providers, as well as some of the most progressive full-service communication providers. International sales include Europe, South America, Australia and the Far East. Currently Alpha has sales and service centers in the US, Canada, Europe, the Middle East and Australia with more than 1,000 employees. Alpha Technologies is a member of The Alpha Group of companies. The Alpha Group represents a global alliance of independent companies that share a common philosophy – create powering solutions for communication, commercial, industrial and renewable energy markets. A member of the FTTH Council.

12. Amedia Networkswww.amedianetworks.com

732-440-1992

Key Products: Premises gateways and switched Ethernet access solutions

Summary: Amedia, based in Eatontown, NJ, designs and develops premises gateways and switched Ethernet access solutions. These secure and flexible solutions are used by net-

Content Providers - Including Games And Indexing Services

These are the companies that drive demand for broadband. BP Top 100 companies are in bold.

Company Name	Web Address
4Com	www.4com.com
Acelera Networks	www.accelera.net
Activision	www.activision.com
AT&T	www.att.com
Broadweave Networks	www.broadweave.com
Charter Communications	www.charter.com
Comcast	www.comcast.com
Connexion Technologies	www.cnxntech.com
Cox Communications	www.cox.com
Digeo	www.digeo.com
DirectTV Group	www.directv.com
HDNet	www.hd.net
HoloDek	www.holo-dek.com
KT Communication	www.ktcom.tv
Microsoft TV	www.microsoft.com/tv
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
Optical Entertainment Network (OEN)	www.fision.net
Pulver.com	www.pulver.com
Shentel (Shenandoah Telecommunications)	www.shentel.com
SureWest	www.surewest.com
Time Warner Cable	www.timewarnercable.com
Verizon, Verizon Enhanced Communities, Verizon Wireless	www.verizon.com/fios, connected.verizon.com
Vonage Holdings	www.vonage.com
Ygnition Networks	www.ygnition.com

work operators deploying Fiber-to-the-Premises, Fiber-to-the-Building, or Fiber-to-the-Node infrastructures to offer their residential and enterprise subscribers high-speed data, IP video, and Voice over Internet Protocol (VoIP) services. Amedia's strategic and channel partners include Adesta Group; Danella Engineering; ARRIS; Motorola; LightRiver Technologies; LightSpeed Technologies; Tellord. FTTH Council Member.

13. American Power Conversion (APC)

www.apcc.com

800-788-2208

Key Products: Data center and server rooms, rack systems, cooling solutions, UPS, management tools, surge protection and power conditioning, audio-video solutions, power distribution, power generation, DC, broadband power systems, notebook and mobility solutions, networking and cable solutions

Summary: American Power Conversion is a global leader in AC and DC power availability solutions for both home and corporate environments. Its products improve the manageability, availability and performance of sensitive electronic, network, communications and industrial equipment. These products include backup batteries, uninterruptible power supply (UPS) devices, electrical surge suppressors, power conditioners, direct current (DC) power systems, racks and enclosures, cooling solutions, and desktop and notebook PC and mobile accessories. APC focuses its business on four primary application areas: Home/Small Office; Business Networks; Data Centers and Facilities; and Access Provider Networks. The company is based in West Kingston, RI, and operates sales offices worldwide and manufacturing facilities on three continents. APC had 7,580 employees by the end of 2005 and in 2005 had revenue of almost \$2 billion. APC is a member of the FTTH Council.

14. APA Cables and Networks

www.apacn.com

763-476-6866

Key Products: Fiber optic components for independent telcos, cable-TV providers and municipal networks

Summary: APA Cables and Networks (APACN) is a leading provider of fiber connectivity systems for independent telephone, cable television and municipal networks. The APACN product line includes fiber frames and panels, OSP cabinets

and optical components. It offers a modular and scalable platform designed for use in central office and OSP architectures, and is complemented by a full-line of fiber and copper assemblies. The company has become a documented leader in optical performance, harsh environment performance stability and port density. The APACN Fiber Distribution System offers panel density from 12 to 288 ports, as well as a suite of complementary products including dense wavelength division multiplexing (DWDM), WDM and passive optical components. APACN's customers include multiple service operators (MSOs), such as Wide Open West (WOW), Adelphia, Comcast and Mediacom; competitive local exchange carriers (CLECs) including AT&T Local Services, and independent telephone companies such as SureWest Communications, CenturyTel, and Paul Bunyan Telephone. APACN is a fully-owned subsidiary of APA Enterprises, Inc., a publicly traded company that designs, develops, manufactures and markets advanced products for fiber optic communications, including DWDM components and Gallium Nitride compound semiconductor-based ultraviolet detectors, instruments and consumer products. FTTH Council member.

15. Applied Optoelectronics

www.ao-inc.com

281-295-1800

Key Products: Diode lasers, photodiodes, external cavity lasers, and related modules and equipment for CATV, FTTx, and wireless uses

Summary: Founded in February 1997 and providing leading-edge semiconductor component solutions, AOI was awarded the Sensors and Instrumentation Technology of the Year 2000 by NASA Tech Briefs magazine. That year the company moved into Its 24,000 sq. ft. manufacturing and office plant in Sugar Land, Texas, and received ISO certification in 2002. In February 2006, It announced production of a full line of photodetector products for use in FTTx and Cable TV applications, with an output of 10,000 units possible per month. In addition, AOI maintains a sales office in Attleboro, MA, and an R&D facility in Sunnyvale, CA, where it works in-depth on III-V material growth via molecular beam epitaxy (MBE) and wafer processing technologies, areas that are problematic for laser developers. The management team includes researchers with over sixty patents in electrical engineering specializing in laser technology. AOI is a member of the FTTH Council.

Free Space Optics

There are many companies in this area; these have distinguished themselves with superior technology and pricing. BP top 100 in bold.

Company Name	Web Address
Canobeam (Free Space Optics division of Canon)	www.canobeam.com
Clearmesh	www.clearmesh.com
Dominion Lasercom	www.dominionlaser.com
DragonWave	www.dragonwaveinc.com
Ericsson	www.ericsson.com
fSONA	www.fsona.com
IRLan	www.irlan.co.il
LaserBit	www.laserbit.net
LightPointe	www.lightpointe.com
MRV Communications	www.mrv.com

16. ARNCO

www.arnccorp.com
800-321-7914

Key Products: Cable products including FTTx fiber solutions, nonmetallic conduit, UL approved high-density polyethylene conduit products for direct burial or concrete encasement, hydra-lube lubricants, pull tapes, and cable-pulling and placing equipment

Summary: As the industry's leading supplier of conduit, ARNCO made the leap from conduit for gas and power uses to the needs of FTTx. The company has four facilities including its main plant in Elyria, Ohio, and includes a complete-line process for cable-related products including product development, engineering, testing, manufacturing and administration. Other satellite facilities and distribution centers are located in Utah, South Carolina, and Mexico for manufacturing and warehousing operations. The company still provides infrastructure solutions for water, gas, and power utilities, as well as data communication, telecom, and CATV, and is committed to meeting the needs for new uses of non-metallic conduit. Recent products have included Signal-Guard, a high-density polyethylene (HDPE) resin locatable conduit. ARNCO is a member of the FFTH Council.

Plan to Attend
the Broadband Properties Summit
September 11-13, 2006.

17. Astec Underground

www.astecunderground.com
865-408-2100; 800-527-6020

Key Products: Trenchers, vibratory plows, boring machines and directional drilling equipment

Summary: Astec Underground offers a complete line of underground construction equipment used to construct, maintain and repair telecommunications networks, including basic copper and fiber optic plant and cable television systems. Customers include small contractors who operate a single trencher; large utility providers and contractors with large fleets of underground construction equipment; horizontal directional drilling specialists; and contractors who build giant cross-country pipelines. Headquartered in Loudon, Tenn., the company operates a 330,000-sq-ft facility, which includes corporate offices, a new research and development center, training facilities, a manufacturing plant and a custom paint facility. Astec acquired Trenchor and American Augers and continues to market their brands. The company also purchased Case underground construction utility products, which are now manufactured and sold under the Astec brand. FFTH Council member.

18. Atlantic Engineering Group

www.atlantic-engineering.com
706-654-2298

Key Products: Fiber optic design, engineering, construc-

tion, construction management, installation, and contract operations services.

Summary: Atlantic Engineering Group (AEG), based in Braselton Georgia and founded in 1995, provides design (outside plant, headend and central office), engineering, construction, construction management, installation and contract operation services to communications providers. AEG claims that no other firm has built more FTTP networks with more FTTP electronic solutions. AEG's notable city-wide FTTP projects include Bristol Tennessee Essential Services, TN (30,000 households passed), Bristol Virginia Utilities, VA (10,000), Dalton Utilities, GA (24,000), Jackson Energy Authority, TN (30,000), the Borough of Kutztown, PA (3,000), Morristown Utility Systems, TN (15,000), North Kansas City, MO (4,000), Provo, UT (32,000), Pulaski, TN (5,000), Quincy, FL (4,000), and Sallisaw Municipal Authority, OK (6,000). AEG is not an integrator but has significant in-house resources. FFTH Council, founding member.

19. Blonder Tongue Laboratories

www.blondertongue.com

732-679-4000; 800-523-6049

Key Products: Video headends, high-speed data, telephony, microwave, fiber optics, distribution, addressable subscriber provisioning, test equipment and technical training

Summary: Blonder Tongue Laboratories designs, manufactures and sells products for the acquisition, distribution and protection of video, voice and data transmitted via fiber optic, twisted pair, coaxial cable and wireless to homes, multi-dwelling units and businesses. Blonder Tongue's customers include franchised and private cable operators, hospitality, contractors and installers, municipalities, utilities, and housing developers. The company, founded in 1950, and headquartered in Old Bridge, NJ, has 269 employees and in 2005 had sales of over \$32 million. Its "triple play offering" comprises video headend and distribution products, as well as fiber transmission, interdigitation, high-speed data and telephony products. Blonder Tongue's Technical Services Group provides system design, installation, technical training, on-site system engineering and turnkey services.

**See Many of the Top 100 Companies at
the Broadband Properties Summit
in Irving, Texas
September 11-13, 2006.**

20. BroadLight

www.broadlight.com

650-937-1130

Key Products: Standards-based communication semiconductors and software solutions

Summary: Founded in Israel in July 2000, BroadLight is now a venture-backed company headquartered in Mountain View, Calif. The company 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 (PON) solutions for carriers and service providers designing BPON and GPON equipment for central office and customer premises equipment. The company's integrated end-to-end solutions consist of transceivers, media access controller chips (MACs) and PONmaker software. BroadLight's backers include Motorola Ventures, Siemens Venture Capital, Azure Capital Partners, Israel Seed Partners, Delta Ventures, and Star Ventures. In February, BroadLight established an office in Tokyo, and added a Japanese distributor for its products – complementing its distributors in Korea, Taiwan, China, Singapore and India. Broadlight is a FTTH Council member.

21. Broadweave Networks

www.broadweave.com

801-407-6000

Key Products: FTTH and FTTP networks

Summary: Located in Lehi, Utah, the company deploys FTTP networks in greenfield communities. Broadweave Networks offers high-capacity fiber optic networks to support converged voice, video and data traffic. Under the brand Triple-Weave, homeowners can receive these services via an IP network delivered over a single fiber optic connection. The company's networks support telephone, TV, Internet, movies on demand, online gaming, home security, unified communications and other applications. Businesses can order bandwidth by the slice at speeds up to 10 Gbps, as well as enhanced data services, such as messaging and collaboration; voice services, such as unified communications and hosted telephony; and video services, such as business TV and video telephony.

Subscriber And Network Management

Once your system is up and running, these firms provide network management, customer billing and service. BP Top 100 companies are in bold.

Company Name	Web Address
180 Connect	www.180connect.net
4Com	www.4com.com
Acelera Networks	www.accelera.net
ADC Telecommunications	www.adc.com
Adesta	www.adeTAGroup.com
Adtran	www.adtran.com
ADVA Optical Networking	www.advaoptical.com
Advanced Digital Broadcast	www.adbglobal.com
Agilent Technologies	www.home.agilent.com
Alcatel	www.alcatel.com
Alvarion	www.alvarion-usa.com
American Power Conversion (APC)	www.apcc.com
AT&T	www.att.com
Axxcelera Broadband Wireless	www.axxcelera.com
Blonder Tongue Laboratories	www.blondertongue.com
Broadstar	www.broadstar.com
Broadstream Communications	www.broadstream.com
Broadweave Networks	www.broadweave.com
c9 Networks	www.c9networks.com
Calix	www.calix.com
Capanis Networks	www.capanis.com
Caspian Networks	www.caspiannetworks.com
Charter Communications	www.charter.com
Cisco Systems/Scientific Atlanta/Linksys	www.scientificatlanta.com, www.cisco.com
Coaxial Networks	www.coaxialnetworks.com
Coaxsys	www.coaxsys.com
Comcast	www.comcast.com
Communication Technology Services (CTS)	www.cts1.com
Communications Data Group, Inc. (CDG)	www.cdg.ws
Connexion Technologies	www.cnxntech.com
Cox Communications	www.cox.com
CTS (Communication Technology Services, LLC)	www.cts1.com
Digeo	www.digeo.com
DirecTV Group	www.directv.com
Display Systems Int'l	www.displaysystemsintl.com
Eagle Broadband	www.eaglebroadband.com
ECI	www.ecitele.com
Entrisphere	www.entrisphere.com

Company Name	Web Address
Ericsson	www.ericsson.com
ETI Software Solutions	www.etisoftware.com
Fine Point Technologies	www.finepoint.com
Front Door Networks	www.frontdoornet.com
Fujitsu Network Communications	us.fujitsu.com/telecom
GLDS - Great Lakes Data Systems	www.glds.com
Harmonic	www.harmonicinc.com
Hitachi Telecom (USA)	www.hitel.com
Intel	www.intel.com
Irdeto	www.irdeto.com
JDS Uniphase	www.jdsu.com
KT Communication	www.ktcom.tv
Martin Group	www.martin-group.com
MDU Communications	www.mduc.com
MetaSolv Software	www.metasolv.com
MetaSwitch	www.metaswitch.com
Microsoft TV	www.microsoft.com/tv
Motorola Broadband	broadband.motorola.com
MRV Communications	www.mrv.com
Netcentrex	www.netcentrex.net
NetTest	www.nettest.com
Nokia	www.nokia.com
Nortel Networks	www.nortelnetworks.com
NorthStar Communications Group	www.northstar.net
On Trac	www.ontracinc.net
Optelian Access Networks	www.optelian.com
Optical Solutions	www.opticalsolutions.com
Pace	www.pacemicro.com
PacketFront	www.packetfront.com
Pannaway	www.pannaway.com
Phoenix Broadband	www.phoenixbroadband.com
Pirelli Communications	www.pirelli.com
Primal Solutions	www.primal.com
Proxim Wireless	www.proxim.com
Pulver.com	www.pulver.com
RadUSA (RAD Data Communications)	www.radusa.com
Redcom Laboratories	www.redcom.com
Road 9	www.road9.net
SaskTel International	www.sasktel-international.com
Shentel (Shenandoah Telecommunications)	www.shentel.com
Siemens Communications Group	www.usa.siemens.com/communications

Company Name	Web Address
SMS – Satellite Management Services	www.smstv.com
SpatialInfo	www.spatialinfo.com
Sumitomo Electric Lightwave	www.sumitomoelectric.com
SureWest Communications	www.surewest.com
Tandberg Television	www.tandbergtv.com
Telco Systems	www.telco.com
Teledyne Technologies	www.teledyne.com
TeleGuide	www.4teleguide.com
Tellabs	www.tellabs.com
TelStrat	www.telstrat.com
TetraTech	www.tetrattech.com
Time Warner Cable	www.timewarnercable.com
TotalVision	www.total-vision.net
Transition Networks	www.transition.com
Verizon, Verizon Enhanced Communities, Verizon Wireless	www.verizon.com/fios, connected.verizon.com
Vision Broadband Now/New England Broadband	www.visionbroadbandnow.com or www.newenglandbroadband.net
Vonage Holdings	www.vonage.com
Wave7 Optics	www.wave7optics.com
Websense	www.websense.com
White Rock Networks	www.whiterock.com
World Wide Packets	www.worldwidepackets.com
Ygnition Networks	www.ygnition.com
Zero dB	www.zerodbnet.com
Zhone	www.Zhone.com
Zoomy Communications	www.zoomyco.com
ZyXEL Communications	www.zyxel.com

22. C-Cor

www.c-cor.com

814-238-2461; 800-233-2267

Key Products: Optical access and transport systems

Summary: C-Cor is a global provider of products and services for building and maintaining multi-service, two-way broadband communications networks. It is organized into three divisions: Access and Transport, Network Services, and Solutions. The company, based in State College, Pa., maintains regional offices for Europe in Germany and Spain, and for the Asia Pacific region in Australia and China. The company also does business in Africa, the Middle East and South America. Among C-Cor's milestones are, in the 1960s, being the first to introduce integrated circuits on telephone poles and, in

the 1990s, pioneering the first optical, 1 Gbps amplifier. C-Cor's customers include Cablevision, Charter, Comcast, Cox, Ericsson, Kabel, Rogers, Telenor, Telestra and Time Warner Cable. A FTTH Council member.

23. Calix

www.calix.com

877-766-3500, 707-766-3000

Key products: Multiservice access management software; Multiservice access platforms (MSAPs); FTTP OLTs and ONTs; IP service edge nodes (SENs) for FTTN; enclosures; software

Summary: Calix is the largest equipment supplier focused solely on access. Calix recently introduced an ultra-compact

“install once, never go back” GPON ONT with IPTV capacity and interoperability with BPON OLTs. Calix expanded its FTTP capabilities last year by acquiring Optical Solutions, Inc.; OSI products became the core of the F-Series product family, which provides a comprehensive and widely deployed FTTP GPON solution. The C-Series includes the Calix C7 multiservice access platform, integrating all functions required to transport and deliver voice, data, and video services over both optical and copper networks. The E-Series allows service providers to economically deliver 30-40 Mbps of services over existing copper plant. Calix products include a suite of management tools that can be accessed from any location via a standard web browser. Outdoor cabinets range in size from 120 to 2880 lines and are designed to facilitate conversion of narrowband subscribers to either fiber or copper service. Founded in 1999, Calix has over 300 employees and is headquartered in Petaluma, CA with offices in Boston and Minneapolis. A FTTH Council member.

24. Canobeam (Free Space Optics division of Canon)

www.canobeam.com

201-807-3300; 800-321-4388

Key Products: Optical transceivers

Summary: Canon USA, Inc., markets the Canobeam Free Space Optics line of optical transceivers to businesses and other users that want to transmit data on beams of light over the air, and pioneered the technology. The models in the Canobeam series deliver a wide range of data speeds and cover a wide range of distances – from 25 Mbps to 1.25 Gbps, and from 20 meters to 1,000 meters. Canobeam’s Auto Tracking Function constantly maintains beam alignment and compensates for vibrations in the installation base caused by weather and any other factors. Canobeam systems are protocol-independent (like fiber), and require no radio-frequency permits or licenses. Canobeam users include a wide range of business, government, and educational institutions. Canobeam is marketed by Canon USA’s Broadcast and Communications Division, headquartered in Ridgefield Park, NJ. Canon USA is based in Lake Success, NY. The company is listed as one of *Fortune’s* Most Admired Companies in America and is rated number 35 on the *Business Week* list of “Top 100 Brands.” Its parent company, Canon Inc., (NYSE:CAJ) is a top patent holder of technology, ranking second overall in the U.S. in 2005, with global revenues of \$31.8 billion.

25. Charles Industries

www.charlesindustries.com

847-806-6300

Key Products: Outside plant environmental protection solutions for copper, fiber, coax and wireless applications; voice and data transmission products.

Summary: Charles Industries, Ltd. is a privately held company with headquarters in Rolling Meadows, Illinois, and six manufacturing centers with more than 600 employees. The company provides products and services to telecommunication, utility, marine and industrial industries worldwide. The Charles Telecommunications Group has been in business for more than 30 years and counts every major North American RBOC among its customers, in addition to the major ILECs, CLECs and IOCs. Charles employs more than 100 engineers in “in-house” engineering research and development. They work on all aspects of design including mechanical and electrical, printed-circuit board layout and software applications. A FTTH Council member.

26. Cisco Systems/Scientific Atlanta

www.scientificatlanta.com, www.cisco.com

770-236-5000

Key Products: Headend equipment, addressable network management systems, cable modems, and digital set-top boxes and accessories, wireless (Linksys division).

Summary: Of course, it is hard to imagine the Internet without Cisco routers and switches. With regard to FTTH, Scientific Atlanta, which became a Cisco company on February 24, 2006, is a leading supplier of set-top cable TV boxes and cable modems; transmission networks for home broadband access; digital interactive subscriber systems for video, high speed Internet, and voice over IP (VoIP) networks; worldwide customer service and support. With regard to fiber, the company is focused on the convergence of the PC and the TV and helping to extend multimedia broadband applications to new platforms via interactive broadband networks, set-tops and cable modems. In April Scientific Atlanta introduced new OpenCable Application Platform (OCAP) compliant hardware and software, including its OCAP Digital Network Control System Release 4.0 series, OCAP Axiom middleware implementation and OCAP-capable set-tops. In 2005, Scientific Atlanta alone had sales of \$1.9 billion, up from \$1.708 billion in 2004, and 7,705 employees. Its acquisition increased

Cisco worldwide employment to over 47,000. Headquartered in Lawrenceville, Ga., the company also maintains North American regional offices in Conshohocken, Pa.; Englewood, Colo.; Scarborough, Ontario (Canada); Mexico City (Mexico). Overseas, Scientific Atlanta maintains offices in Argentina; Australia; Brazil; China; India; Japan; Korea; U.A.E. Cisco is a FTTH Council member.

27. Clearmesh

www.clearmesh.com

626-535-2800

Key Products: Wireless optical mesh solutions for metro grids: ClearMesh 300 (CM 300) node and the ClearMesh Management System (CMS)

Summary: Founded in 1996 and a division of Idealab, ClearMesh Networks (the new name for Omnilux) is a communication equipment vendor offering wireless optical mesh solutions to service providers and small- to middle-sized businesses. The company has an inexpensive infrared free-space optics solution that uses LEDs instead of a laser. With the Metro Grid solution, service providers can deliver business-grade Ethernet service ranging from 5 to 100 Mbps per individual customer, or use it as a high-capacity distribution core for municipal WiFi networks. The ClearMesh Metro Grid delivers high-margin business communication distribution architecture for dense metropolitan markets, license-free. ClearMesh Networks enables service providers to close the gap between expensive fiber build outs and legacy copper infrastructure. The ClearMesh technology combines three well-established technologies – wireless deployment, optical transmission, and integrated mesh networking.

28. CoBank

www.cobank.com

800-542-8072

Key Products: Infrastructure loan products and financial services

Summary: CoBank specializes in financing to expand fiber optic networks, build new transmission lines, make acquisitions and diversify business operations through added services such as wireless technology. The company offers a broad range of flexible loan programs and specially tailored financial services. Short-, intermediate- and long-term financing is available at variable and fixed interest rates. CoBank also of-

fers cash investment services, letters of credit, leasing services and interest rate risk management services. The company has approximately 600 employees serving 2,300 U.S. customers nationwide from its national office located in Denver, Colo., and banking centers located across the United States. CoBank also has representative offices in Mexico City and Singapore.

29. CommScope

www.commscope.com

800-982-1708

Key Products: Cable and connectivity products including hybrid fiber coaxial cable, fiber-optic, and wireless integration products.

Summary: Begun in 1953 as a telephone cable company and now a member of the NYSE (CTV), CommScope had revenues in 2005 of \$1.3 billion and is a world leader in the design and manufacture of last-mile cable and connectivity solutions for communication networks. It is also the world's largest manufacturer of coaxial cable for Hybrid Fiber Coaxial (HFC) applications. Backed by strong research and development, CommScope combines technical expertise and proprietary technology with global manufacturing capability to provide customers with high-performance wired or wireless cabling solutions. Through its SYSTIMAX Solutions and Uniprise brands it is the leader in structured cabling systems for business enterprise applications. CommScope has five major manufacturing facilities in North Carolina, and also in Alabama, Nevada, Texas, Brazil, Belgium, Australia, Ireland, and in 2005, CommScope opened its first broadband cable manufacturing facility in Asia, CommScope Asia (Suzhou) Technologies Co., Ltd. FTTH Council founding member.

30. Communication Technology Services (CTS)

www.cts1.com

800-834-5838

Key Products: In-home and in-business structured wiring, wireless LAN, VoIP, carrier network services including construction management for enterprise-level companies and service providers

Summary: Founded in 1990 as a structured cabling company, CTS has grown into a national organization providing a broad array of communication infrastructure services and solutions including structured cabling, other inside wiring, wireless local area network and VoIP, including IP PBX. The

company is headquartered in Marlborough, Massachusetts, but has more than 600 professional field technicians and project managers around the US, all full-time CTS employees. CTS works with manufacturers and distributors, including AMP, Anixter, Berk-Tek, Chatsworth, Corning, Graybar, Ortronics, Panduit, Proxim, and ShoreTel. One of its biggest wins: Inside wiring for the UTOPIA project.

31. Communications Data Group (CDG)

www.cdg.ws

888-234-4443

Key Products: Billing and provisioning systems

Summary: CDG has been developing and selling communications billing, service provisioning, customer care, and operational support systems for 30 years. The company started in 1970 as a department within the Bank of Illinois, mainly to do the bank's data processing and subscriber bill processing for small telephone companies. It developed one of the first carrier access billing (CAB) systems after the AT&T divestiture more than 20 years ago. Hargray Communications Group acquired the company's billing business in 1990, renaming it Communications Data Group. In 1993, CDG acquired AT&T's Mini-CABS customer base. The company has continued to refine itself, and now serves more than 200 telecommunications companies nationwide, including 21 of the nation's largest independent telephone companies. CDG has 135 employees.

32. Connexion Technologies

www.cnxntech.com

919-674-0036

Key Products: Networks and network services

Summary: Connexion Technologies, formerly Capitol Infrastructure, is one of the nation's largest providers of fiber-to-the-home services. It seeks out greenfield developers and funds FTTH networks for them, providing all content and service through a group of selected partners. By building the most reliable and most affordable fiber optic infrastructure possible, Connexion Technologies delivers unlimited connections to a blazing fast network that can handle current and future technology needs. It currently provides an unprecedented array of communication technologies – from voice and video to Internet and security – to new residential communities nationwide. The company, established in 2003, is based in Cary, North Carolina and has almost 100 employees. While Connexion

Technologies boasts an impressive 75,000 approximate homes under contract, what's more important is the number of communities in which it has deployed FTTH networks. By the end of 2005 Connexion was providing voice, video, data, and security services to 13 different communities. That figure will triple by the end of 2006. FTTH Council member.

33. Corning

www.corning.com

828-901-5880

Key Products: Optical fiber and cable, coaxial interconnect systems, telecommunications hardware and equipment

Summary: Corning is a 150-year-old company that grew from a glass manufacturing plant to one of the leaders in fiber optic cabling. Corning engineers developed the first fiber optic cable for communications in 1970. Today, Corning Optical Fiber is developing new fiber designs at its Sullivan Park Research & Development facility in Corning, New York, and introducing high-performance optical fibers that form the foundation of optical networks worldwide. Corning Optical Fiber is a unit of the telecommunications business segment of Corning, Inc., which had sales of \$4.58 Billion (more than a third in optical fiber). Corning Optical Fiber has deployed more fiber than any other fiber manufacturer. The leadership also extends to patents. The company has been awarded more than 125 U.S. optical fiber patents in the last three years. In addition to optical fiber and cable, the telecommunications segment produces hardware and other equipment for the global telecommunications industry. Corning Gilbert manufactures a comprehensive line of broadband coaxial interconnect systems and microwave connectors. Corning also offers a variety of customer services focused on FTTH, such as training, engineering support and network modeling. The markets and applications served by Corning Optical Fiber include broadband, premises, metro/access, long-haul, submarine, utilities, telephony and CATV. Corning is a member of the FTTH Council.

34. Ditch Witch/The Charles Machine Works

www.ditchwitch.com

800-654-6481

Key Products: Construction tools for laying fiber

Summary: Ditch Witch dates from 1949 when the founder invented a workable compact trencher. The Ditch Witch organization specializes in the design and manufacture of high-quality underground construction equipment. It sells tren-

Service Providers And Network Owners

From among the thousands of great ISPs and network owners, these firms have shown particular vision in expanding broadband use. BP Top 100 companies are in bold.

Company Name	Web Address
AT&T	www.att.com
BroadRiver Digital	www.broadriver.com
Broadweave Networks	www.broadweave.com
Charter Communications	www.charter.com
City Telecom (HK) Ltd.	www.ctihk.com
CoBank	www.cobank.com
Comcast	www.comcast.com
Connexion Technologies	www.cnxntech.com
Cox Communications	www.cox.com
DirecTV Group	www.directv.com
Ericsson	www.ericsson.com
FTTH Communications	www.ftthcom.com
Guadalupe Valley Telephone Coop	www.gvtc.com
Korsett Holdings	www.korsett.com
Lamont Digital	www.lamontdigital.com
Long Lines, Ltd	www.longlines.com
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
Multiband	www.multibandusa.com
Omega Communication Services	www.omegacomminc.com
Optical Entertainment Network (OEN)	www.fision.net
Pavlov Media	www.pavlovmedia.com
Pulte Homes	www.pulte.com
Roseland Property Company	www.roselandproperty.com
Shentel (Shenandoah Telecommunications)	www.shentel.com
SoFast Communications	www.sofast.net
Sprint	www.sprint.com
SureWest	www.surewest.com
Time Warner Cable	www.timewarcable.com
TotalVision	www.total-vision.net
Verizon Enhanced Communities	connected.verizon.com
Ygnition Networks	www.ygnition.com
Zoomy Communications	www.zoomyco.com

chers, vibratory plows, pneumatic piercing tools, backhoes, electronic tracking and locating tools, horizontal directional drilling systems, drill pipe, downhole tools, vacuum excavation systems, mini excavators, excavator-tool carriers, mini skid steers and pipe bursting systems. Ditch Witch Financial Service (DWFS) offers a wide variety of financing and lease

options. Headquartered in Perry, Oklahoma, The Charles Machine Works has more than 1,300 employees.

35. Draka Comteqwww.drakacomteq.us

800-879-9862

Key Products: Optical fiber and cabling solutions for telecommunications carriers, utilities, installers and enterprises delivering broadband services

Summary: Founded in 1910 and based in Claremont, North Carolina, Draka is global wire and cable company that provides innovative cabling solutions for a wide range of applications. The second largest supplier of optical fiber in the U.S. and a top five cabler worldwide, Draka Comteq is a jointly owned company of Draka NV and Alcatel. In July 2005, Draka Comteq announced a new product, BendBright, the first "Low Water-Peak, Low Macro-bending sensitive" optical fiber for the US market. Completely compatible with more conventional low water peak single mode optical fibers, BendBright brings the added benefits of opening the "L-Band" to fiber and allows for half the bending radius of currently available fibers. The most recent figures, from 2004, show Draka with net sales of \$2.2 billion and 9,600 employees. Draka is a member of the FTTH Council.

36. Dura-Linewww.duraline.com

800-847-7661

Key Products: Fiber optic conduit

Summary: Dura-Line is a leading manufacturer of innovative products and an award-winning supplier of solutions to companies in the telecom, cable-TV, power and C&I/DOT markets. The company's customers include AT&T, Bellsouth, Cablevision, Qwest, Telmex, Time Warner Cable and Verizon. In 2005, Dura-Line was honored with the Verizon Supplier Excellence Award. Headquartered in Knoxville, Tenn., Dura-Line operates manufacturing plants in the U.S., India, Mexico and the Czech Republic, and sells its products in more than 30 countries. It was in 1981 that Dura-Line became the first manufacturer to develop an innovative duct for the installation and protection of fiber-optic cables. In 2004, Dura-Line introduced a complete line of fiber optic Microduct products. John Shoffner, chairman and CEO, is the inventor of Silicore permanently lubricated conduit, which has become a world standard for fiber optic conduit. FTTH Council member.

37. Emerson Network Power - Marconiwww.emersonnetworkpower.com

440-246-6999; 800-800-1280

Key Products: Power, connectivity and precision cooling solutions, supplies and systems

Summary: Emerson Network Power, based in Warrenville, Illinois, serves the needs of telecommunications networks, data centers, health care and industrial facilities worldwide with a full spectrum of reliable power solutions, including inbound power, connectivity, power supplies, power systems and precision cooling. The company's products and services are aimed at building new broadband networks, third generation wireless deployments, evolving cable-TV service solutions or upgrades to enterprise networks. The company's sales in fiscal 2005 (ended last September) were \$3.3 billion. Emerson Network Power is a unit of the St. Louis-based Emerson Electric Co., – the largest global services organization in the power industry. Emerson Electric, with 114,200 employees, generated sales of \$17.3 billion in fiscal 2005. FTTH Council Member.

38. Emtellewww.emtelle.com

602-953-6657

Key Products: Ducted network and air blown fiber technology

Summary: Emtelle, originally established in 1980 as a vendor of ducted networks for telecommunications industry, is now one of the world's leading providers of air-blown fiber solutions. Its Fibreflow line was created in 1993, and now includes what is probably the most extensive range of tube bundles, fiber products, accessories, installation equipment and training courses in the field. The company's North American headquarters is in Phoenix, Arizona. It complements the global network of Emtelle offices in Europe, the Far East and Australia and develops and supports Emtelle's growing network of partners and deployments across North America. In Europe, Emtelle's was recently chosen to connect 7,600 homes in Nuenen, The Netherlands, and for the establishment of a large fiber optic Metropolitan Area Network in the Athens region for the 2004 Olympic Games. The company expects about \$65 million in revenue this year. It has 180 employees worldwide. In April 2006, Emtelle's Commercial Director, Tibor van Melsem Kocsis, was elected to the Board of the FTTH Council Europe.

39. Enablence

www.enablence.com

613-270-7860

Key Products: PLC-based FTTH triplexers and diplexers

Summary: Enablence designs, manufactures and sells integrated optical components for the access and metro markets. With corporate headquarters in Ottawa, Ontario, Canada, the company provides integrated triplexers and diplexers for BPON, GPON and GePON applications. These planar lightwave circuit (PLC) components use the company's proprietary Dispersion Bridge technology to address the global rollout of FTTH. The company also offers CWDM and spectrometer-on-chip products. Enablence is a member of the FTTH Council.

40. Entrisphere

www.entrisphere.com

408-970-2000

Key Products: ONTs, OLTs, ADSL2+, VoIP exchanges, IPTV, Ethernet network management

Summary: With offices in Santa Clara California and Plano, Texas, Entrisphere offers a complete portfolio of ONTs and ONUs, which support a wide range of deployments, including Single Family Units, Small Business Units, Multiple Dwelling Units and Multiple Tenant Units, and in Fiber to the Curb and Fiber to the Business. The BLM 1500 simplifies the existing copper access network while providing a ready transition to packet networking and fiber media. In a single chassis, the BLM 1500 concentrates the functions of digital loop carriers (DLC), SONET ADMs, T1 multiplexers, optical concentration devices, digital cross-connects, DSLAMs, and voice gateways, enabling the deployment of such traditional services as POTS, specials, Ethernet and HiCap alongside packet voice, ADSL2+, and other new services. The EntriView EMS provides centralized control over a BLM 1500 network with full FCAPS functionality, enabling network managers to configure, monitor, and manage BLM 1500s with unparalleled ease while allowing a graceful evolution to next-generation management systems.

**Be Sure to Attend the
Most Important Exhibit in the Broadband
Industry, September 11-13, 2006.**

41. Ericsson

www.ericsson.com

972-583-0000

Key Products: Enterprise solutions including support for VDSL2 market, Ribbonet broadband installation solution for FTTx applications, cables and interconnect products, microwave networks, enterprise solutions, network management tools, and a wide product line of stations and broadband switches

Summary: Ericsson, based in Stockholm, Sweden (US headquarters, Reston, VA), and a world leader in virtually all aspects of telecommunications, has entered the fiber market with several cabling and applications solutions. Founded in 1876, Ericsson is a supplier of broadband multi-service communications equipment and services to fixed network operators. The Ribbonet fiber installation system is a flexible and cost-effective method of installing optical fibers in all types of fiber optic access networks, especially suitable for FTTH, FTTD and fiber Distributed Antenna System (DAS) applications or any other type of networks where distribution of fibers to many individual clients is demanded. Ribbonet replaces traditional cabling in distribution networks. Ericsson has been able to secure a strong position in voice over packet, soft switching and public Ethernet access by successfully addressing three key operator needs: modernization and expansion of the fixed telephony networks; introduction of IP-based revenue generating services; and cost-efficient rollout of high capacity broadband networks with service differentiation. Ericsson's services portfolio includes expertise in consulting, systems integration, managed services, network deployment and optimization, education and technical support services. Ericsson has over 15,000 employees in 140 countries.

42. ETI Software Solutions

www.etissoftware.com

770-242-3620

Key Products: Convergent cable billing, provisioning and subscriber management services (Pay-Per-View, Pay-Per-Day services)

Summary: Enhanced Telecommunications, Inc. was founded in 1992 to provide software solutions for the converging broadband technologies of television, telephony and data communications. The company launched its first product in 1993, and now has a wide array of products for the con-

trol and management of broadband technologies, scalable for either small PC-based systems or large systems in excess of 1,000,000 subscribers. ETI has strategic alliances with Scientific-Atlanta, Cisco, NDS, Motorola, Blonder-Tongue Laboratories, and other major manufacturers of broadband equipment, and has installed over 150 systems. The ability to automate provisioning of FTTH networks has made ETI's Triad system a standout in today's marketplace. ETI is a privately held company with over 90 percent of the company stock owned and controlled by its employees. ETI's cable system products are designed to generate additional revenues for cable TV companies by providing pay-per-view (PPV), pay-per-day (PPD), and subscriber management services; and facilitate convergent cable billing with telco, Internet, and utility services. FTTH Council member.

43. Foxcom

www.foxcom.com

609-514-1800

Key Products: Satellite downlink signal transport, fiber to coax modules

Summary: Foxcom, a division of OnePath Networks, was founded in 1993 and is recognized as a leading provider of fiber optics solutions to the professional satellite and video distribution markets. Foxcom's global sales and marketing offices are divided between Princeton, NJ supporting customers in North and South America; the research and manufacturing center, based in Israel, supports sales into Europe, Asia, and Africa. The Sat-Light fiber optic interfacing products transport satellite signals in earth stations, broadcast facilities, Internet Service Provider central offices, cable TV headends, RF over fiber and other communication gateways. Foxcom's SDTVplus enable service providers to deliver over 3.0 GHz to each living unit in any high-rise or garden-style building complex, providing each resident with symmetrical Internet access at up to 10 Mbps and up to 500 channels of entertainment video (both CATV and DBS), local off-air UHF/VHF television, security services and more. The wireless business was phased out years ago.

44. Fujitsu Network Communications

us.fujitsu.com/telecom

800-777-FAST

Key Products: ONTs and OLTs, complete fiber network solutions, wireless

Summary: Fujitsu has been working with service providers for more than twenty years. Its SONET platforms in the late 1980s, secured the number-one position in the optical transport market with products installed in the central offices of nearly every major carrier in North America. Its FLASH-WAVE family of optical transport products help Fujitsu remain the top supplier in both the Multi-Service Provisioning Platform (MSPP) market and the Re-configurable Optical Add/Drop Multiplexer (ROADM) market, the two most critical components of today's optical network. Within photonics labs located in Richardson Texas and Kawasaki Japan, Fujitsu is pursuing research in innovative technologies. Fujitsu began manufacturing its telecommunications equipment in Richardson in 1984 and is one of the few equipment vendors that continue to manufacture the majority of its products in-house. Fujitsu Network Communications, the North American telecommunications subsidiary with over 1200 employees, is part of Fujitsu Limited – a Tokyo-based, leading provider of customer-focused information technology and networking solutions for the global marketplace. Fujitsu Limited encompasses more than 500 companies with operations in more than 100 countries and annual revenue of more than \$40 billion. This spring Fujitsu released its new FLASHWAVE 6100 GPON family – the FLASHWAVE 6100 Optical Line Terminal (OLT) and a series of FLASHWAVE 6100 Optical Network Terminals (ONTs). There's a twist: As bandwidth needs increase, network operators can install CWDM equipment at the central office. The ONTs at the user end will sense the new equipment, allowing an eightfold increase in bandwidth to a premise with no truck roll. FTTH Council member.

45. Gibson Technical Services (GTS)

www.gibsontech.com

888-849-9287

Key Products: Design and consulting services and equipment for cable system operators and equipment manufacturers

Summary: Global Technical Services (GTS) is a full-service contractor providing engineering, technical and construction services and equipment in categories including broadband engineering; construction and certification; wireless LANs and WANs; telecom network infrastructure design; structured cabling; wireless medical telemetry; equipment provisioning and staging; rapid equipment deployments. In addition, the Canton, Georgia-based Company offers initial design and installation services, as well as ongoing maintenance and support in all of these areas. Its 20,000 square-foot headquarters

Customer Premises Equipment

These firms supply inside plant equipment for broadband. BP Top 100 companies in bold.

Company Name	Web Address
Adesta	www.adeTAGroup.com
AFL Telecommunications	www.afltelecommunications.com
Agilent Technologies	www.home.agilent.com
Alcatel	www.alcatel.com
Alliance Fiber Optic Products	www.afop.com
Alpha Technologies	www.alpha.com
American Power Conversion (APC)	www.apcc.com
Belkin	www.belkin.com
Blonder Tongue Laboratories	www.blondertongue.com
Broadweave Networks	www.broadweave.com
Calix	www.calix.com
Charles Industries, Ltd.	www.charlesindustries.com
Cisco Systems/Scientific Atlanta/Linksys	www.scientificatlanta.com, www.cisco.com
Coaxsys	www.coaxsys.com
CommScope	www.commscope.com
Communication Technology Services (CTS)	www.cts1.com
Conexant	www.conexant.com
Eagle Broadband	www.eaglebroadband.com
Emtelle	www.emtelle.com
Ericsson	www.ericsson.com
Foxcom	www.foxcom.com
Front Door Networks	www.frontdoornet.com
Fujitsu Network Communications	us.fujitsu.com/telecom
Gibson Technical Services (GTS)	www.gibsontech.com
Leviton Manufacturing	www.leviton.com
Monroe Electronics	www.monroe-electronics.com
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
MRV Communications	www.mrv.com
Multilet	www.multilet.us
Nortel Networks	www.nortelnetworks.com
Omnitron Systems Technology	www.omnitron-systems.com
Panduit	www.panduit.com
Pulver.com	www.pulver.com
Shentel (Shenandoah Telecommunications)	www.shentel.com
Siemens Communications Group	www.usa.siemens.com/communications
Tandberg Television	www.tandbergtv.com
Telco Systems	www.telco.com

Company Name	Web Address
Tellabs	www.tellabs.com
TelStrat	www.telstrat.com
Terawave	www.terawave.com
Tyco/AMP	www.ampnetconnect.com
Verizon, Verizon Enhanced Communities, Verizon Wireless	www.verizon.com/fios , connected.verizon.com
Vision Broadband Now/New England Broadband	www.visionbroadbandnow.com or www.newenglandbroadband.net
Wave7 Optics	www.wave7optics.com
Westek Electronics	www.westek.com
World Wide Packets	www.worldwidepackets.com
ZyXEL Communications	www.zyxel.com

includes a dedicated training room, design and drafting department, warehouse, staging facility and equipment-testing laboratory. GTS clients include AT&T BIS, Black & Veatch, Cable Labs, Charter Communications, Cox Communications, MediaOne, Scientific-Atlanta, and Time Warner Cable. The company has 150 employees and currently operates in 10 states – including Alabama, Florida, Georgia, Louisiana, Maryland, Mississippi, Nevada, North Carolina, Ohio and Pennsylvania – plus Puerto Rico. FTTH Council Member.

46. Harmonic

www.harmonicinc.com

800-788-1330; 408-542-2500

Key Products: Digital video and fiber optic systems for network operators

Summary: Harmonic is a leading provider of digital video, broadband optical networking and IP delivery systems to cable, satellite, telecom and broadcast network operators. Harmonic's open standards-based solutions for the headend through the first mile enable these operators to offer interactive video, voice and data services such as video on demand, high-definition digital television, VoIP and, of course, high-speed Internet access. Harmonic is headquartered in Sunnyvale, Calif. The company also offers consulting, service and support to its customers – including network planning; system/network management; middleware integration; training. Harmonic maintains R&D, sales and system integration centers worldwide. Its customers include Comcast, Charter Communications, Cox Communications, Cablevision Systems, and Insight Communications. In 2005, Harmonic generated revenues of \$257.38 million and 618 employees. Harmonic's customers include Cablevision, Charter Communications, Comcast, Cox, DIRECTV, EchoStar, Sinclair Broadcasting,

Thales and Time-Warner Cable. International customers include Alcatel, Aliant, Bell ExpressVu, Canal Plus, Hong Kong Cable Television, NTL, Ono, SaskTel, Siemens, SkyPerfect-TV, Softbank, Sumitomo/BNMux and Telewest.

47. HDNet

www.hd.net

214-651-1446; 303-542-5600; 888-919-HDTV

Key Products: High-definition television programming

Summary: HDNet, founded in 2001 by Dallas Mavericks owner Mark Cuban and Philip Garvin of Colorado Networks, broadcasts topical news, sports, music and entertainment TV programming in widescreen (16:9), "1080i" high-definition (HDTV) format. The company, based in Dallas, has its programming carried by Adelphia, Bright House, Charter, DirecTV, DISH Network, Insight Communications, Mediacom Communications, Time Warner Cable, and more than 40 National Cable Television Cooperative (NCTC) cable affiliate companies. HDNet programming includes original series such as True Music; licensed series from Paramount, Warner Bros., Sony and other studios, including Smallville, Summerland and The Agency. It also broadcasts live sports, such as National Hockey League and Major League Soccer games, NASCAR Grand National Division auto racing, NCAA football and basketball games, HDNet Boxing and The HDNet Horse Racing Challenge. A sibling network, HDNet Movies, delivers commercial-free, full-length feature films from Warner Bros., New Line, Paramount, Buena Vista, LionsGate/Artisan, MGM, Universal, Sony Pictures and other independents. HDNet Movies plays films transferred from 35mm to high-definition digital, in addition to movies produced and finished in 1080i high-definition. Closely-held HDNet operates its HD Broadcast Center in Denver, which is equipped

with editing rooms and an MPEG-2-based digital switching facility, and also owns two HD mobile production trailers paired with digital satellite uplink trucks. In 2005, HDNet signed a pact with Verizon for the telco to carry both HDNet and HDNet Movies on its FiOS TV service. In March, HDNet signed a pact with Akimbo, an Internet-based video-on-demand service, to distribute both HDNet and HDNet Movies content over the Akimbo service.

48. Hitachi Telecom (USA)

www.hitel.com

770-446-8820

Key Products: Optical access solutions, optical transport equipment, and electronic and optical components

Summary: Hitachi Telecom develops and manufactures optical access equipment, including GPON FTTP solutions, to a wide variety of customers, including telecommunications service providers, cable television service providers, municipalities, and real estate developers. Earlier this year, the company's AMN1220 product became the first full-rate GPON system to be commercially deployed in the United States. The company also offers optical transport equipment for long-haul service providers. Hitachi Telecom, headquartered in Norcross, Ga., is a subsidiary of Hitachi America, Ltd., and Hitachi, Ltd., of Japan. Hitachi, Ltd. has approximately 356,000 employees worldwide and in fiscal 2005 (ended March 2006) generated sales of \$80.9 billion. Hitachi, Ltd., is ranked No. 2 in Fortune's Global 500, in the electronics, electrical equipment category. FTTH Council Member.

49. InfiniSys

www.electronicarchitect.com

386-236-1500

Key Products: FTTA Fiber-to-the-Apartment system, managed in-unit WiFi, low voltage system engineering and integration, service provided contract negotiations, project management

Summary: Since 1990, InfiniSys has been a leading independent technology consultant and design advisor to the real estate industry. The firm creates innovative technology-based amenity solutions for new and existing apartment communities, condominiums, mixed use, master-planned developments, student housing and commercial and hospitality properties. Working with developers, owners, and architects,

InfiniSys designs standards-based low-voltage cabling systems that enable the client to contract with any service provider by maintaining ownership of the property's cable plant. In addition to leveraging technology to maximize the value of the property, InfiniSys also negotiates with service providers and contractors on the client's behalf. Headquartered in Daytona Beach, InfiniSys has 15 full-time employees.

50. JDS Uniphase

www.jdsu.com

408-546-5000

Key Products: Fiber optic communications components and testing equipment: Attenuators, Circulators, Couplers/Splitters/WDMs, Detectors/Receivers, Transmission, Amplification, Wavelength Management Modules and Circuit Packs, T-BERD 6000/MTS-6000 Compact Optical Test Platform

Summary: Based in Milpitas, California, the JDS Uniphase Corp. has 7,000 employees dedicated to broadband and optical solutions in the communications, commercial and consumer markets. JDSU is a leading provider of communications test and measurement solutions and optical products for telecommunications service providers, cable operators, and network equipment manufacturers, as well as being a leading provider of optical solutions for medical/environmental instrumentation, semiconductor processing, display, brand authentication, aerospace, defense and decorative applications. JDS Uniphase was formed in 1999 with the merger of JDS Fitel, known for its passive optical components, and Uniphase Corporation, known for its active components and lasers. The broadband company Acterna was acquired by JDSU in August 2005, making JDSU a leader in optical communications sub-systems, broadband and optical test and management solutions for service providers and network equipment vendors. With sales and distribution in more than 160 countries, JDSU serves an expanded customer base that includes the largest 100 telecommunications and cable services providers and system manufacturers worldwide. Revenue was more than \$700 million for the fiscal year ending July 2005, but jumped substantially with the Acterna acquisition.

51. KiS Communications Construction

www.kis-comm.com

731-986-0178

Key Products: Engineering and technical services for broadband service providers

Summary: KiS Communications is a leading engineering and technical services company serving broadband service providers. KiS engineers, installs, activates and maintains the advanced communications systems of its clients, including HFC, wireless and FTTH. Technical services include outside plant services and headend/hubsite integration. The company's clients include Cox Communications, Time Warner Cable, Jackson Energy Authority and Trillion Wireless. FTTH Council Member.

52. KT Communication

www.ktcom.tv

877-485-3557; 573-446-3693

Key Products: Satellite-delivered video programming

Summary: KT Communication Inc. is a leading business-to-business wholesale provider of satellite-delivered programming. The Columbia, MO-based company provides digital satellite video programming solutions for C-Band, Bulk, L-Band and Transport. Its video platform delivers content to independent multi-channel video providers (MVP) that target diverse markets, including: rural communities; multi-dwelling and multi-tenant units, such as apartment complexes and duplexes, university residence halls and hospitals, vacation resorts, and real estate investment trusts with multiple units; private cable operators; wireless cable operators; franchise cable operators, particularly operators of small and rural systems. KT Communication helps its own customers to manage capital, cash flow and operating costs, and maintain subscriber revenue and customer service in their communities – as well as to compete with digital cable on both quality and quantity of local, national, and international programming. Delivery of high-definition TV services is expected to be added soon.

53. Leviton Manufacturing

www.leviton.com

718-229-4040

Key Products: Premises wiring and home automation

Summary: Located in Little Neck, NY, Leviton Manufacturing Co. provides basic electrical infrastructure and energy management products as well as voice, data and home networking products for industrial, commercial, OEM and residential markets. Its wholly owned subsidiaries and affiliated companies are American Insulated Wire, Leviton Canada,

Leviton Mexico and Leviton China. The company's wiring device division designs, develops, markets and sells a broad range of wiring device products. Its voice and data division at its manufacturing complex in Bothell, Wash., produces both fiber and copper products. Residential structured cabling and home control products are offered to builders and homeowners through Leviton Integrated Networks and Controls. FTTH Council member.

54. Martin Group

www.martin-group.com

877-219-5646

Key Products: Software solutions; business and engineering services

Summary: Martin Group offers OSS/BSS software solutions for communications providers to streamline processes and eliminate redundancy and errors. The software helps customers to manage revenue associated with integrated customer care and billing, facilities management, service order management, carrier billing services, auto provisioning and financials. The company's convergent software is flexible and configurable, giving customers the capability to quickly go to market with new products and services. Martin Group's engineering team has been assisting service providers plan and engineer their infrastructure for 35 years. The company is headquartered in Mitchell, S.D., with additional offices in Rapid City, S.D., and Missoula, Montana. Martin Group has more than 10 regional sales offices nationwide.

55. MetaSwitch

www.metaswitch.com

510-748-8230

Key Products: Class 4/5 softswitches

Summary: MetaSwitch's integrated Class 5 switches support all of the major broadband and legacy access technologies, including VoIP, VoATM and TDM, together with more than 100 features required for genuine Class 5 functionality. The highly scalable, open distributed softswitch incorporates a full suite of network elements including Call Agent, Media Gateway and Signaling Gateway that together deliver a Class 4/5 softswitch solution. MetaSwitch's next-generation service architecture enables service providers to offer revenue-generating features, such as Web self-care and SIP-based unified

Cabinets, Enclosures

These firms supply “outside plant” equipment for broadband. BP Top 100 firms in bold.

Company Name	Web Address
AFL Telecommunications	www.afltelecommunications.com
Alcatel	www.alcatel.com
American Polywater	www.polywater.com
American Power Conversion (APC)	www.apcc.com
APA Cables and Networks	www.apacn.com
ARNCO	www.arnccorp.com
C9 Networks	www.c9networks.com
Centillum Communications	www.centillum.com
Channell Commercial Corporation	www.channellcomm.com
Charles Industries, Ltd.	www.charlesindustries.com
Cisco Systems and Cisco Linksys	www.cisco.com and www.linksys.com
Corning	www.corning.com
Ericsson	www.ericsson.com
Fujitsu Network Communications	us.fujitsu.com/telecom
Intel	www.intel.com
JDS Uniphase	www.jdsu.com
Leviton Manufacturing	www.leviton.com
LS Cable (formerly LG Cable) Ltd	www.lgcable4u.com
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
Nortel Networks	www.nortelnetworks.com
Ortronics/Legrand	www.Ortronics.com
Pico Macom	www.picomacom.com
Preformed Line Products	www.preformed.com
RadUSA (RAD Data Communications)	www.radusa.com
SENKO Advanced Components	www.senko.com
Siemens Communications Group	www.usa.siemens.com/communications
Stratos International	www.stratoslightwave.com
Sumitomo Electric Lightwave	www.sumitomoelectric.com
Tandberg Television	www.tandbergtv.com
TeleCrafter Products	telecrafter.com
Terawave	www.terawave.com
Terayon	www.terayon.com
Tyco/AMP	www.ampnetconnect.com
Wave7 Optics	www.wave7optics.com
ZyXEL Communications	www.zyxel.com

Fiber-related Products Specifically

These companies design and manufacture equipment specifically for fiber systems, including the fiber itself. BP Top 100 firms in bold.

Company Name	Web Address
Adesta LLC	www.adeitagroup.com
Advanced Digital Broadcast	www.adbglobal.com
AFL Telecommunications	www.afltelecommunications.com
Alcatel	www.alcatel.com
Alliance Fiber Optic Products	www.afop.com
Allied Telesis	www.alliedtelesis.com
Alloptic	www.alloptic.com
Amedia Networks	www.amedia.com
AML Wireless Networks	www.amlwireless.com
APA Cables and Networks	www.apacn.com
Broadlight	www.broadlight.com
Calix	www.calix.com
C-Cor Inc.	www.c-cor.com
Charles Industries, Ltd.	www.charlesindustries.com
Cisco Systems/Scientific Atlanta/Linksys	www.scientificatlanta.com, www.cisco.com
Coaxsys	www.coaxsys.com
CommScope	www.commscope.com
Corning	www.corning.com
Draka Comteq	www.drakacomteq.us
DSM Desotech	www.dsm.com
ECI	www.ecitele.com
Emtelle	www.emtelle.com
Entrisphere	www.entrisphere.com
Ericsson	www.ericsson.com
Fiber Core	www.fibercore.com
Fiber Solutions, Inc	www.fsifiber.com
FiberOne	www.fiberonellc.com
Flexlight Networks	www.flexlight-networks.com
Front Door Networks	www.frontdoornet.com
Fujitsu Network Communications	us.fujitsu.com/telecom
Gould Fiber Optics	www.gouldfo.com
Hitachi Telecom (USA)	www.hitel.com
Ignis	www.ignis.com
IMC Networks	www.imcnetworks.com
JDS Uniphase	www.jdsu.com
Luminent (subsidiary of MRV)	www.luminent.com
Microyal	www.microyal.com

Company Name	Web Address
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
Multidyne Video & Fiber Optic Systems	www.multidyne.com
NEC FiberOptech	www.nec-fiberoptech.com
NEL America (NTT)	www.nel-world.com
NeoPhotonics	www.neophotonics.com
Neptec Optical Solutions	www.nepopt.com
Nexans	www.nexans.com
NextGen Fiber Optics (General Cable)	www.nextgenfiberoptics.com
Nextrom (USA)	www.nextrom.com
Nortel Networks	www.nortelnetworks.com
OFS; Optical Fiber Solutions	www.ofsoptics.com
Omnitron Systems Technology	www.omnitron-systems.com
Omron Advanced Systems, Inc	www.omron.com
Optical Cable Corp.	www.occfiber.com
Optical Fiber Solutions (OFS)	www.ofsoptics.com
Ortronics/Legrand	www.Ortronics.com
PacketFront	www.packetfront.com
Pannaway	www.pannaway.com
Pirelli Communications	www.pirelli.com
PMC-Sierra	www.pmc-sierra.com
RadUSA (RAD Data Communications)	www.radusa.com
Renaissance Integrated Solutions	www.rensols.com
Road 9	www.road9.net
Samsung Electronics	www.samsung.com/Products/BroadbandNetworkSolution/
SENKO Advanced Components	www.senko.com
Siemens Communications Group	www.usa.siemens.com/communications
Stratos International	www.stratoslightwave.com
Sumitomo Electric Lightwave	www.sumitomoelectric.com
Tandberg Television	www.tandbergtv.com
Teem Photonics	www.teemphotonics.com
Telco Systems	www.telco.com
Telecast Fiber Systems	www.telecast-fiber.com
Transition Networks	www.transition.com
Wave7 Optics	www.wave7optics.com
Westek Electronics	www.westek.com
White Rock Networks	www.whiterock.com
World Wide Packets	www.worldwidepackets.com
Zero dB	www.zerodbnet.com
Zhone	www.Zhone.com
ZyXEL Communications	www.zyxel.com

messaging. With deployment options ranging from a compact, single-chassis switch serving a few hundred lines to a distributed architecture supporting millions of subscribers, the company offers solutions for a wide range of customers, including tier 1 carriers, independent and rural telcos, competitive service providers and cable operators.

56. Michels Communications

www.michels.us
920-583-3132

Key Products: Fiber optic network construction

Summary: Michels Communications specializes in fiber optic network construction that serves all sectors of the telecommunications industry – from local telephone and long distance companies to cable-TV providers, education and enterprise sectors. It is one of 15 divisions of the Brownsville, Wisconsin-based Michels Corp., an international engineering and construction contractor serving the energy, transportation, telecommunications and utility construction industries. Another related division is Mi-Tech Services, a full-service engineering firm offering FTTX solutions; fiber optic characterization; cable restoration OSP planning and design; project management; and right-of-way acquisition, among other services.

57. Motorola Broadband (BCS) and Canopy
broadband.motorola.com (BCS) and
motorola.canopywireless.com (wireless and BPL)
888-944-HELP (BCS)
866-515-5825 (Canopy)

Key Products: Broadband access and delivery products and technologies including metro-area WiFi, cable modems, cordless phones, digital audio players, home entertainment, home monitoring and control, VoIP, and home networking

Summary: Motorola Broadband, the Horsham, Pa., based unit of Motorola, Inc., specializes in core broadband solutions that enable the delivery of advanced services over a variety of network architectures and access platforms, including copper, optical, hybrid fiber coax and broadband wireless. Motorola Canopy, the wireless division, is in Schaumburg, Illinois, Motorola Broadband is the world leader in cable modem shipments, and is establishing itself in markets for advanced home services such as home monitoring and Voice over Internet Protocol (VoIP). Canopy has emerged as a major player in

municipal WiFi deployments, hotspots, and similar networks. Digital video headend technology from Motorola feeds more than 80 million homes around the globe. Motorola Broadband targets home networking solutions, but offers services to unite business solutions with working-at-home requirements. In June 2006, Motorola Broadband announced that it would partner with Cox Communications in evaluating the Open Cable Applications Platform (OCAP), developed by CableLabs, as a standard for cable television systems in North America. Motorola pioneered digital television, including the development of the world's first all-digital HDTV system. In addition, Motorola is the global leader in digital set-top box shipments. As we went to press, Verizon announced that Motorola would be one of its three leading suppliers of GPON equipment. In 2005, Motorola, Inc. had sales of \$36.8 billion and 69,000 employees. Motorola BCS is a member of the FTTH Council.

58. MRV Communications

www.mrv.com
800-338-5316 (Americas)
(49) 6105/2070 (International)

Key Products: GePON, Free-Space Optics, VDSL, MPLS, components, network management

Summary: Founded in 1988 by Caltech scientists, Chatsworth, California-based MRV was an early pioneer in fiber-optic transmitter and receiver components. MRV sells its products worldwide and has operations in Europe that provide network system design, integration and distribution services. The company has grown by acquisition and by integrating equipment built by others, as well as through its own products. MRV produced the first 100Base-TX uplink module, first affordable 10/100 auto-sensing Ethernet switch, the first Gigabit Ethernet uplink module and the first Gigabit Ethernet switch. Its components division pioneered inexpensive Coarse Wave Division Multiplexing technology. It sells a broad range of very small hot-swappable modules (Pluggable Optical Interfaces), including Gigabit Interface Converters (GBIC), Small Form Pluggable (SFP) and 10 Gbps Small Form Pluggable (XFP). MRV has also developed technology that allows Gigabit data streams to operate on multimode fiber at distances significantly exceeding the standard (up to 2 km). This technology also extends 100 Mbps signals to even longer distances (8 km). The In-Reach product family (resulting from the Xyplex acquisition) of Remote Presence Management solutions, including console, alarm, sensor and

power management. The TereScope FSO product family (resulting from Jolt and AstroTerra acquisitions) has deployed more than 5500 links. The company had \$284 million in revenues in 2005.

59. Netcentrex

www.netcentrex.net

888-547-9897; 408-450-5930

Key Products: IP-based triple-play and FMC software solutions for next-generation consumer and enterprise communication services

Summary: Netcentrex is a leader in network-based software enabling IP-based voice, video and data (triple-play) and fixed-mobile convergence (FMC) solutions for next-generation services. The company's solutions enable communication service providers to deliver wireline and converged fixed-mobile services to both the consumer and enterprise markets. Netcentrex has 3 million VoIP lines in commercial service and has been recognized as a worldwide leader for Class 5 application servers. Netcentrex supports approximately 50 service providers, including AOL Germany, Comunitel (Tele2), Fastweb, France Telecom, Telefonica Deutschland GmbH and Tiscali. In 2005, Paris-based Netcentrex generated revenues of approximately \$50 million. In May, Netcentrex was acquired by Comverse Technology, Inc. through its subsidiary, Comverse, Ltd. – the world's leading provider of software and systems enabling network-based multimedia enhanced communication and billing services. More than 450 communication and content service providers in more than 120 countries use Comverse products.

60. NorthStar Communications Group

www.northstar.net

877-862-8682

Key Products: Services for telecommunications infrastructure, and engineering and design outsourcing

Summary: NorthStar, headquartered in Birmingham, Ala., is the stand-alone telecommunications subsidiary of BE&K, Inc., one of the nation's largest privately held engineering, construction, and maintenance companies. Engineering News-Record (ENR) recognized NorthStar for five consecutive years as among the top five national firms in overall telecommunications engineering and design. NorthStar is an

ISO 9001:2000- and TL 9000-certified firm, and provides a full menu of services from feasibility and verification studies, through RF design, to management and maintenance of the telecommunications infrastructure. Services related to broadband include network operations such as a Service Response Center (SRC), National Field Services (NFS), centralized problem management coordination, and general project management, as well as turnkey design and building of cable broadband networks, RF and fiber design, and UG mapping. NorthStar was recognized in 2006 by AT&T as an outstanding supplier, and acknowledged by the magazine SafetyXChange as a leader in workplace safety and health. It is a member of the FTTH Council.

61. On Trac

www.ontracinc.net

423-317-0099

Key Products: Consulting, design and installation services.

Summary: On Trac, based in Talbot, Tenn., serves FTTH, cable, telephone and utility companies with a wide range of field and professional services, including: FTTH splicing and installation (for video, voice and data); mainline fiber splicing; MDU design and installation; networking (for video, voice and data); system audits; inventory control; scheduling procedures; consulting. The company's clients include Dalton Utilities of Dalton, Ga.; Bristol Tennessee Essential Services of Bristol, Tenn.; Morristown Utility Systems of Morristown, Tenn. On Trac currently is under contract in Tennessee, Georgia, Virginia, North Carolina, Florida, Texas, Oklahoma and Indiana. FTTH Council Member.

62. Optelian Access Networks

www.optelian.com

877-255-9428

Key Products: Optical transport solutions; DWDM and CWDM products

Summary: Located in Marietta, Ga., Optelian Access Networks designs and builds optical transport systems for the telco, CATV and utility industries as well as enterprise, education and government markets. The company's LightGAIN series of active and passive units provide solutions for the following optical network applications: DWDM, CWDM,

Test Equipment

These companies make and sell test equipment for broadband networks. BP Top 100 in Bold.

Company Name	Web Address
3M Company/Communication Markets Division	www.3M.com/telecom
3SAE Technologies	www.3sae.com
ADC Telecommunications	www.adc.com
Adesta	www.adeTAGroup.com
Adtran	www.adtran.com
AFL Telecommunications	www.afttelecommunications.com
Alcatel	www.alcatel.com
Alliance Fiber Optic Products	www.afop.com
APA Cables and Networks	www.apacn.com
Applied Instruments	www.appliedin.com
Blonder Tongue Laboratories	www.blondertongue.com
Charles Industries, Ltd.	www.charlesindustries.com
Cisco Systems/Scientific Atlanta/Linksys	www.scientificatlanta.com, www.cisco.com
CommScope	www.commscope.com
Corning	www.corning.com
Entrisphere	www.entrisphere.com
Ericsson	www.ericsson.com
EXFO	www.exfo.com
Fujitsu Network Communications	us.fujitsu.com/telecom
Gould Fiber Optics	www.gouldfo.com
Hitachi Telecom (USA)	www.hitel.com
JDS Uniphase	www.jdsu.com
Leviton Manufacturing	www.leviton.com
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
MRV Communications	www.mrv.com
Multidyne Video & Fiber Optic Systems	www.multidyne.com
Nortel Networks	www.nortelnetworks.com
Optical Solutions	www.opticalsolutions.com
Pannaway	www.pannaway.com
Preformed Line Products	www.preformed.com
SENKO Advanced Components	www.senko.com
Siemens Communications Group	www.usa.siemens.com/communications
Stratos International	www.stratoslightwave.com
Sumitomo Electric Lightwave	www.sumitomoelectric.com
Sunrise Telecommunications	www.sunrisetelecom.com
Telecast Fiber Systems	www.telecast-fiber.com
Tellabs	www.tellabs.com
Wave7 Optics	www.wave7optics.com
Westek Electronics	www.westek.com

Company Name	Web Address
Westover Scientific	www.westoverscientific.com
World Wide Packets	www.worldwidepackets.com
ZyXEL Communications	www.zyxel.com

Wireless

These companies design and build equipment for wireless systems, or design the systems themselves. BP Top 100 firms in bold.

Company Name	Web Address
ADC Telecommunications	www.adc.com
Adtran	www.adtran.com
Alcatel	www.alcatel.com
American Power Conversion (APC)	www.apc.com
Axcera	www.axcera.com
c9 Networks	www.c9networks.com
Charles Industries, Ltd.	www.charlesindustries.com
Cisco Systems/Scientific Atlanta/Linksys	www.scientificatlanta.com, www.cisco.com
Clearmesh	www.clearmesh.com
Corning	www.corning.com
CTS (Communication Technology Services, LLC)	www.cts1.com
DirecTV Group	www.directv.com
D-Link Corporation/D-Link Systems	www.d-link.com
ECI	www.ecitele.com
Ericsson	www.ericsson.com
Front Door Networks	www.frontdoornet.com
Fujitsu Network Communications	us.fujitsu.com/telecom
Gibson Technical Services (GTS)	www.gibsontech.com
Hitachi Telecom (USA)	www.hitel.com
InfiniSys	www.electronicarchitect.com
JDS Uniphase	www.jdsu.com
KiS Communications Construction	www.kis-comm.com
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
MRV Communications	www.mrv.com
Nokia	www.nokia.com
Nortel Networks	www.nortelnetworks.com
PMC-Sierra	www.pmc-sierra.com
Preformed Line Products	www.preformed.com
Proxim Wireless	www.proxim.com
RadUSA (RAD Data Communications)	www.radusa.com
Redcom Laboratories	www.redcom.com
Road 9	www.road9.net

Company Name	Web Address
SaskTel International	www.sasktel-international.com
SENKO Advanced Components	www.senko.com
Siemens Communications Group	www.usa.siemens.com/communications
SMC Networks	www.smc.com
Stratos International	www.stratoslightwave.com
Verizon, Verizon Enhanced Communities, Verizon Wireless	www.verizon.com/fios , connected.verizon.com
Wave7 Optics	www.wave7optics.com
World Wide Packets	www.worldwidepackets.com
ZyXEL Communications	www.zyxel.com

OADM, WDM, GigE extension, 10 Gbps, IPTV transport, protection switching, mode and wavelength conversion, regeneration and amplification. Optelian also provides an extensive selection of attenuators and adaptors in its connectivity group of products. The company designs, engineers, develops, assembles and tests its own products in addition to distributing, selling and marketing them.

63. Optical Cable

www.occfiber.com

540-265-0690

Key Products: Optical cable

Summary: Founded in 1983, Optical Cable Corporation pioneered the design and production of special tight-buffered cables for the most demanding military field applications in the early 1980s. The company's founders came from ITT, which was the primary defense contractor for research and development of optical cable at the time of the start-up. At its Roanoke, Va., plant the company manufactures a broad range of fiber optic cables for indoor and outdoor use. The firm's tight-buffered coating process provides excellent mechanical and environmental protection for the optical fiber. The current product portfolio is built on the evolution and refinement of the original fundamental technology into a comprehensive and versatile product line to provide end-users with significant value. In addition to the military, OCC's clients include the full spectrum of broadband companies, including CATV, FTTH, financial institutions, hospitals, utilities, security, transportation, and broadcast. A publicly held company since 1996, it had 2004 sales in 2004 of over \$43 million, with about one-quarter of those sales coming from overseas clients in over 70 countries.

64. Optical Entertainment Network (OEN)

www.fision.net

713-357-9600

Key Products: FISION Triple-Play service

Summary: Optical Entertainment Network (OEN), based in Houston, is a Triple Play (voice, video and broadband Internet) service provider to residential and commercial customers. The company's flagship offering is FISION, a service offering symmetrical 10 to 100 Mbps high-speed Internet connections, and innovative applications, such as telemedicine, video conferencing, gaming and home security; IP voice services including local and long-distance services; and more than 400 channels of entertainment programming, including more than 50 HDTV channels. Houston is the nation's tenth-largest TV market. OEN has signed the largest number of IPTV carriage agreements to date, acquired directly with programming networks and has developed a business model that will enable it to license content to other FTTH communities around the U.S. and overseas. FTTH Council member.

65. Optical Fiber Solutions (OFS)

www.ofsoptics.com

770-798-5555; 888-342-3743

Key Products: Optical fiber, optical cable, optical connectivity and specialty photonics

Summary: OFS, a member of the FTTH Council, and based in Norcross, Ga., was formed in 2001 by Furukawa Electric Co., Ltd., which purchased the Lucent Technologies Optical Fiber Solutions business from the former Bell Labs spin-off. Under Bell Labs, in 1976, OFS was the first commercial volume producer of optical fibers (the technology had been invented at Corning). The company also counts numerous

Telephony Experts

These companies have special expertise in delivering high quality telephone services. BP Top 100 companies in bold.

Company Name	Web Address
Adtran	www.adtran.com
Alcatel	www.alcatel.com
Alliance Fiber Optic Products	www.afop.com
Allied Telesis	www.alliedtelesis.com
APA Cables and Networks	www.apacn.com
Calix	www.calix.com
C-Cor Inc.	www.c-cor.com
Charles Industries, Ltd.	www.charlesindustries.com
Cisco Systems/Scientific Atlanta/Linksys	www.scientificatlanta.com , www.cisco.com
CommScope	www.commscope.com
Corning	www.corning.com
DirectTV Group	www.directv.com
Draka Comteq	www.drakacomteq.us
ECI	www.ecitele.com
Entrisphere	www.entrisphere.com
Ericsson	www.ericsson.com
Fujitsu Network Communications	us.fujitsu.com/telecom
Hitachi Telecom (USA)	www.hitel.com
JDS Uniphase	www.jdsu.com
MetaSwitch	www.metaswitch.com
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
Multilink Broadband	www.multilinkbroadband.com
NetCentrex	www.netcentrex.com
Nortel Networks	www.nortelnetworks.com
Optical Fiber Solutions (OFS)	www.ofsoptics.com
PMC-Sierra	www.pmc-sierra.com
Preformed Line Products	www.preformed.com
Pulver.com	www.pulver.com
RadUSA (RAD Data Communications)	www.radusa.com
Redcom Laboratories	www.redcom.com
SaskTel International	www.sasktel-international.com
SENKO Advanced Components	www.senko.com
Shentel (Shenandoah Telecommunications)	www.shentel.com
Siemens Communications Group	www.usa.siemens.com/communications
Stratos International	www.stratoslightwave.com
Sumitomo Electric Lightwave	www.sumitomoelectric.com
SureWest Communications	www.surewest.com
Team Fishel	www.teamfishel.com

Company Name	Web Address
Telco Systems	www.telco.com
Teledyne Technologies	www.teledyne.com
Tellabs	www.tellabs.com
TelStrat	www.telstrat.com
Transition Networks	www.transition.com
Tut Systems	www.tutsys.com
Verizon, Verizon Enhanced Communities, Verizon Wireless	www.verizon.com/fios, connected.verizon.com
Wave7 Optics	www.wave7optics.com
White Rock Networks	www.whiterock.com
World Wide Packets	www.worldwidepackets.com
ZyXEL Communications	www.zyxel.com

other firsts in its history, including developing the first application-specific fiber, the first optical connectors, the first ribbon cables, and the first attenuators. OFS has four divisions—Optical Fiber, Optical Cable, Optical Connectivity and Specialty Photonics—plus OFS Labs, which continues some of the research heritage of Bell Labs. The OFS mission is to help end-users reach increased capacity for video, voice and data transmission by using several new technologies developed in-house, including the AllWave Zero Water Peak (ZWP) Fiber; Laser-Optimized Multimode Fiber for distances of 550 meters and beyond; and TrueWave Nonzero Dispersion Fibers (NZDF) for applications that require ultra-long distance and high speeds. The OFS manufacturing plant in Norcross is one of the world’s largest fiber-optic manufacturing facilities. In addition to it, the company operates fiber-optic plants in Germany, Denmark, Russia and multiple U.S. locations. Furukawa Electric Co. is a multi-billion dollar firm founded in 1884 – 41 years before Bell Labs was formed by AT&T and Western Electric to pool their research and engineering resources. OFS is a FTTH Council member.

66. Ortronics/Legrand
www.Ortronics.com
877-599-5393

Key products: Structured wiring, cable and fiber assemblies, associated hardware, engineering services

Summary: Ortronics is one of the largest suppliers of products for network cable (copper and fiber) management, and for in-building structured wiring. The company, originally founded in the US in the 1960s, is now a subsidiary of Le-

grand, based in Limoges, France. The combined company’s products include patch panels, patch cords, workstation outlets, cable management systems, and 110 cross-connect systems for copper and wireless as well as fiber; it may have the world’s largest catalog of housing and commercial building products and systems for electrical installations and information networks. Ortronics, headquartered in New London, CT, also offers engineering and technical support, systems planning, training programs and a 25-year extended products warranty and applications assurance warranty program. Sales were about \$4 billion in 2004. The Legrand group employs 27,000 people in 60 locations worldwide and sells in more than 160 countries. A FTTH Council member.

67. PacketFront
www.packetfront.com
603-888-5100

Key Products: Integrated control and provisioning system, switches, routers, IPD, DSLAMs

Summary: PacketFront, headquartered in Stockholm, Sweden, has an office in Nashua, New Hampshire to serve North America. It develops and markets solutions to enable truly operator-independent broadband networks that support multiple service providers. The company was founded in 2001 by former employees of Cisco and the pioneering broadband operator B2 with the idea that a “True Broadband Network” uses an all-IP, open-access infrastructure and lets subscribers choose which services they want – from among several concurrent TV channels, HD telephony streams, Internet access, storage, gaming, video conferencing, software on demand

Broadband Networks, General

These companies have general expertise in broadband networks of all kinds, not necessarily fiber. BP Top 100 companies in bold.

Company Name	Web Address
ADC Telecommunications	www.adc.com
Adesta	www.adeitagroup.com
Adtran	www.adtran.com
ADVA Optical Networking	www.covaro.com
Advanced Digital Broadcast	www.adbglobal.com
AFL Telecommunications	www.afltelecommunications.com
Alcatel	www.alcatel.com
Alliance Fiber Optic Products	www.afop.com
Allied Telesis	www.alliedtelesis.com
Alloptic	www.alloptic.com
Alpha Technologies	www.alpha.com
Alvarion	www.alvarion-usa.com
Amedia Networks	www.amedianetworks.com
American Power Conversion (APC)	www.apc.com
AML Wireless Networks	www.amlwireless.com
Andrew Corporation	www.andrew.com
APA Cables and Networks	www.apacn.com
Applied Optoelectronics	www.ao-inc.com
Arkados	www.arkados.com
Axcera	www.axcera.com
Blonder Tongue Laboratories	www.blondertongue.com
c9 Networks	www.c9networks.com
Calix	www.calix.com
Caspian Networks	www.caspiannetworks.com
C-Cor Inc.	www.c-cor.com
Cedar Point Communications	www.cedarpointcom.com
Charles Industries, Ltd.	www.charlesindustries.com
Cisco Systems/Scientific Atlanta/Linksys	www.scientificatlanta.com, www.cisco.com
Coaxial Networks	www.coaxialnetworks.com
CoaXmedia	www.cxmbroadband.com
Coaxsys	www.coaxsys.com
CommScope	www.commscope.com
Corning	www.corning.com
CTS (Communication Technology Services, LLC)	www.cts1.com
Draka Comteq	www.drakacomteq.us
Entrisphere	www.entrisphere.com
Ericsson	www.ericsson.com
Front Door Networks	www.frontdoornet.com

Company Name	Web Address
Fujitsu Network Communications	us.fujitsu.com/telecom
GuesTV	www.guestv.com
Harmonic	www.harmonicinc.com
Hitachi Telecom (USA)	www.hitel.com
JDS Uniphase	www.jdsu.com
Leviton Manufacturing	www.leviton.com
MDU Media Technologies	www.mdumedia.com
MetaSwitch	www.metaswitch.com
Monroe Electronics	www.monroe-electronics.com
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
Multilet	www.multilet.us
Multilink Broadband	www.multilinkbroadband.com
Nexans	www.nexans.com
Nortel Networks	www.nortelnetworks.com
Omron Advanced Systems, Inc	www.omron.com
Optical Fiber Solutions (OFS)	www.ofsoptics.com
Optimal Technologies	www.otii.com
PacketFront	www.packetfront.com
Panduit	www.panduit.com
Pannaway	www.pannaway.com
Peregrine Communications	www.perecom.com
PMC-Sierra	www.pmc-sierra.com
Preformed Line Products	www.preformed.com
R.L. Drake	www.rldrake.com
RadUSA (RAD Data Communications)	www.radusa.com
Renaissance Integrated Solutions	www.rensols.com
Road 9	www.road9.net
Samsung Electronics	www.samsung.com/Products/BroadbandNetworkSolution/
SENKO Advanced Components	www.senko.com
Shentel (Shenandoah Telecommunications)	www.shentel.com
Siemens Communications Group	www.usa.siemens.com/communications
SMC Networks	www.smc.com
Stratos International	www.stratoslightwave.com
Sumitomo Electric Lightwave	www.sumitomoelectric.com
Superior Essex	www.superioressex.com/
Tandberg Television	www.tandbergtv.com
Team Fishel	www.teamfishel.com
Telkonet	www.telkonet.com
Tellabs	www.tellabs.com
Terawave	www.terawave.com
TT Technologies	www.tttechnologies.com

Company Name	Web Address
Verizon, Verizon Enhanced Communities, Verizon Wireless	www.verizon.com/fios , connected.verizon.com
Vermeer Manufacturing Company	www.vermeer.com
Wave7 Optics	www.wave7optics.com
White Rock Networks	www.whiterock.com
World Wide Packets	www.worldwidepackets.com
Zhone	www.Zhone.com
ZyXEL Communications	www.zyxel.com

and more – at what price and when. PacketFront’s products include the layer 3 BECS integrated control and provisioning system, the SMT subscriber management tool, customer-placed multi-service switches, IPD, all-IP DSLAMs, and purpose-built broadband routers for fiber or copper Ethernet. PacketFront also operates branch offices in the Netherlands, Japan and Korea. The company has 9 fulltime US employees. A FTTH Council member.

68. Pannaway

www.pannaway.com
603-766-5100

Key Products: OLTs, ONTs, ADSL equipment, network management

Summary: Until recently, Pannaway was best known in the industry for its early telco-grade end-to-end IP Ethernet solution and ADSL2+ interfaces. The company, which started in 2002, has broadened its product line to include a second-generation FTTP ONT with coax interface. The device also boasts five switched or routed RJ-45 10/100 Ethernet LAN ports, one simplex SC single strand bi-directional 100 Mbps fiber port, two five REN RJ-11 VoIP-enabled telephone ports, perhaps the most flexible fiber-based residential gateway available. Versions are available for indoor or outdoor deployment. Pannaway’s Rural Development Telecommunications Program (formerly RUS) listed Service Convergence Network enables telecommunications service providers of all sizes to quickly and affordably deploy scaleable, end-to-end IP packet networks for the rapid delivery of digitized voice, data, and IPTV. They are available in a variety of port densities and form factors over copper or fiber infrastructures. Pannaway, which had 60 deployments in 2005, has about 100 fulltime employees. A FTTH Council member.

69. PMC-Sierra

www.pmc-sierra.com
408-239-8000

Key Products: Networking chips, FTTH/PON products, wireless BSC/BTS solutions, digital home convergence solutions, storage chips, laser and multifunction printer chips, microprocessors, and SERDES and ReTimer devices

Summary: PMC-Sierra provides broadband communications and storage semiconductors for metro, access, FTTH, wireless infrastructure, storage, laser printers and customer premises equipment. The company has more than 250 different semiconductor devices. Its customers are equipment manufacturers who supply their equipment principally to communications network service providers and enterprises. The company offers worldwide technical and sales support and has a network of offices throughout North America, Europe, Israel and Asia. The corporate head office is located in Santa Clara, Calif., and the operations head office is in Burnaby, British Columbia. In May 2006, the company completed its acquisition of Passave, Inc. (a FTTH Council member), a developer of system-on-chip semiconductor solutions for the FTTH access market.

70. Preformed Line Products

www.preformed.com
440-461-5200

Key Products: Underground and overhead cable and wire installation and maintenance products and systems

Summary: Preformed Line Products, based in Cleveland, Ohio, is an international designer and manufacturer of products and systems employed in the construction and maintenance of overhead and underground networks for energy, communications and broadband network companies. For the communications industry, Preformed markets bonding prod-

ucts; cabinets and enclosures; connectors; dead-end and cable terminations; support and protection products; vibration and galloping control products; spacers and spacer dampers; installation tools and protective guards and markers. The company operates three domestic manufacturing centers, located in Rogers, Arkansas; Albemarle, North Carolina and Asheville, North Carolina. Preformed serves worldwide markets through international operations in Australia, Brazil, Canada, China, England, Japan, Mexico, New Zealand, South Africa, Spain and Thailand. In 2005, Preformed had 1,583 employees and generated sales of \$205.8 million. FTTH Council Member.

71. Primal Solutions

www.primal.com

949-260-1500; 800-438-0921

Key Products: Advanced Internet Protocol (IP) mediation; real time event rating; prepaid solutions for voice and data services on IP networks and a convergent billing software solution

Summary: Headquartered in Irvine, Calif., Primal Solutions is a communications software company whose solutions and services allow usage-based billing for IP services. To help manage customer usage on multi-service networks, Primal's solutions and services act as a bridge between new network services and existing business systems. The company serves cable and broadband, rural broadband, VoIP long distance, managed IP services and wireless markets. Its products can be implemented in conjunction with other solutions as modular components of an overall operations support system strategy or as a comprehensive "quick start" platform for providers of voice, data, content and enhanced services. Also, Primal's products are aimed at both startup service providers with few customers and at large, established service providers with millions of customer and mixed networks.

72. Proxim Wireless

www.proxim.com

800-229-1630

Key Products: Wireless gigabit, wireless backhaul, WiMax, Wi-Fi mesh, wireless LAN, and network management systems

Summary: Proxim Wireless Corporation, a wholly-owned subsidiary of Terabeam, develops scalable broadband wireless networking systems for enterprises, governments, and service

providers. With products such as WiFi to wireless Gigabit Ethernet, the company's WLAN, mesh, point-to-multipoint, and point-to-point products are available through an extensive global channel network. A principal member of the WiMAX Forum and ISO-9001 certified, Proxim Wireless received the 2006 Frost & Sullivan Award for Product Innovation in the field of Scalable Wireless Broadband Systems. The two product lines singled out were the WiMAX Forum Certified Tsunami MP.16, the only system compliant with the IEEE 802.16d, 3.5 GHz time division duplex (TDD) profile to use chipsets from Intel in both base station and subscriber units, and the enhanced version of its Tsunami MP.11, which delivers the capabilities of fixed and mobile WiMAX today for license-free frequency bands worldwide with features such as roaming with seamless hand-offs at speeds up to 200 km/hr and enhanced dynamic frequency selection (DFS).

73. RadUSA (RAD Data Communications)

www.radusa.com

800-444-7234

Key Products: WAN access equipment and solutions

Summary: RAD Data Communications is the U.S. arm of RAD Data Communications, Ltd. of Israel. RAD's customers include organizations in industry, finance, the military, education, transportation, commerce, public utilities and telecommunications. The privately held company markets WAN access equipment and solutions for data communications and telecommunications applications. Its solutions include mature technologies such as TDM, Frame Relay and voice compression, and emerging, high-growth technologies such as ATM, IP, TDM over IP, and fiber optics. Its latest innovation is a series of miniaturized Fast Ethernet-over-PDH and SDH/SONET connectivity devices housed in standard SFP (Small Form-factor Pluggable) packages. These miniature products can be plugged into any regular MSA (Multi-Source Agreement) compatible socket to provide remote bridging over E1/T1 and E3/T3 lines. The MiRIC took the top prize for "Best Telecom Equipment" at the 2006 UTC Expo in Tampa, Florida. The company markets to both service providers and enterprises, and has a particular expertise in complex, international networks. Worldwide, RAD has 23 offices and more than 200 distributors in 164 countries. The company's installed base exceeds nine million units and includes more than 150 carriers and operators worldwide. The company also has formal relationships with AT&T, Verizon, MCI/Worldcom, Qwest, Southwestern Bell and Sprint. It

also has resale arrangements with Alcatel, Ericsson, Siemens and Lucent/Avaya. Sales revenues amounted to \$150 million in 2005, an increase of 10 percent over 2004.

74. Redcom Laboratories

www.redcom.com
585-924-7550

Key Products: Telecom switching systems, emergency systems

Summary: Redcom is an engineering design and manufacturing company specializing in digital telecommunications systems. The company has manufacturing facilities in Victor, N.Y., near Rochester. Redcom communication products include public and private network systems, ISDN systems, tactical systems, programmable platforms and test equipment. The company provides systems support standard interfaces to cellular, microwave, UHF/VHF/HF radios and satellite communication. Redcom's telecom switching systems are available in portable containers for rapid deployment during any emergency. They are specifically designed to support field communications demands common in military operations, government agency disaster responses and other tactical/emergency response situations.

75. SaskTel International

www.sasktel-international.com
800-667-5801; 306-777-4509

Key Products: Software solutions; networking and professional services

Summary: SaskTel International is a division of SaskTel, a full service communications provider. The company develops operational support software used in the application and provision of advanced technologies including fiber optics, microwave radio, cellular and trunked mobile radio, wireless and traditional access networks, and advanced interactive and Internet services. SaskTel International's MARTENS Suite provides totally automated, flow-through provisioning and activation for the triple play of voice, data and video services, from the customer's location through the local access network. The voice service provisioning stream is completed at the local switch. The data and video provision streams arrive at the DSLAM, media gateway or other access edge device. In addition to its head office in Regina, Saskatchewan, Canada, SaskTel International has a regional office in Dar es Salaam, Tanzania, and in Dubai, United Arab Emirates.

76. SENKO Advanced Components

www.senko.com
858-623-3300

Key Products: Over 1000 fiber optic products for the telecom and data communications industries worldwide, including small form and multi-fiber factor connectors and adapters; hybrid and stand adapters; fiber arrays and v-grooves; metalized and lensed fibers; PM couplers; beam combiners; thin-film filters, and fixed optical attenuators and terminators

Summary: SENKO manages fiber optic offices in fifteen countries, including the US, UK, Italy, Australia, Brazil, Hong Kong, and Japan. As part of a larger SENKO Group founded in Japan in 1946, the advanced components division was created in 1997. The larger SENKO group reached sales of \$1.2 billion in 2005 with over 1000 employees. SENKO provides multinational corporations with the technical expertise of engineers and the manufacturing flexibility to develop custom products for high-tech industries. In July 2006, SENKO signed a deal to bring FTTH to Thailand, called the Thailand Collaborative Optical Leading Testbed (Thai COLT). The deal will provide advanced communication systems to Thailand, bringing communications services at speeds 400 times faster than currently available. A member of the FTTH Council.

77. Shentel (Shenandoah Telecommunications)

www.shentel.com
800-743-6835

Key Products: ISP services, telephony, wireless, long-distance, Internet, and cabling services for the Mid-Atlantic region

Summary: Shenandoah Telecommunications Company provides a broad range of telecommunications services through operating subsidiaries that provide local and long distance telephone, Internet and data services, cable television, wireless voice and data services, alarm monitoring, and telecommunications equipment, along with many other associated solutions in the Mid-Atlantic and Southeastern U.S. Financial results for the second quarter of 2006 included a net income increase for the second quarter to \$2.8 million compared to \$2.5 million for the same period in 2005. Shentel has begun moving into the broadband market with small business, home and college dorms, as well as enterprise services for MultiLink PPP, ISDN, SpeedLink DSL, T-1 and DS-3 connectivity, and web. Member of the FTTH Council.

Antennas

Many companies supply antenna systems; these firms specialize in them. BP Top 100 companies in bold.

Company Name	Web Address
Alcatel	www.alcatel.com
Alvarion	www.alvarion-usa.com
Comtech Telecommunications	www.comtechtel.com
DirecTV Group	www.directv.com
Ericsson	www.ericsson.com
Microyal	www.microyal.com
Motorola Broadband (BCS) and Canopy	broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)
Omni Communications	www.omni-inc.net
Pacific Wireless	www.pacwireless.com
Proxim Wireless	www.proxim.com
RadUSA (RAD Data Communications)	www.radusa.com
Redcom Laboratories	www.redcom.com
Siemens Communications Group	www.usa.siemens.com/communications

78. Siemens Communications Group

www.usa.siemens.com/communications

800-310-6308

Key Products: Communication products and services; convergent technologies, products and services for wireless, fixed and enterprise networks

Summary: Based in Boca Raton, Fla., Siemens Communications comprises three primary divisions – enterprise, carrier and devices – that deliver a broad portfolio of communication products and services and is a leader in convergent technologies for wireless, fixed and enterprise networks. The company’s portfolio ranges from devices for end users to complex network infrastructures and complementary services for enterprises, carriers and service providers. The company serves more than 70 percent of the world’s Fortune 500 companies and more than 300 network operators in more than 160 countries. In June, the company teamed with Microsoft to advance the transformation of telephony, audio, video and Web conferencing, instant messaging and e-mail into a single unified communications platform for enterprise customers by integrating the Siemens HiPath 8000 real-time telephony soft-switch with Microsoft Exchange Server and Microsoft Office Live Communications Server. Siemens Communications is a unit of Siemens AG, one of the largest global electronics and engineering companies with reported worldwide sales of \$96

billion in fiscal 2005. With its U.S. corporate headquarters in New York City, Siemens in the USA has sales of \$18.8 billion and employs approximately 70,000 people throughout all 50 states and Puerto Rico. FTTH Council Member.

79. Stratos International

www.stratoslightwave.com

708-867-9600

Key products: Optoelectronic, fiber optic, RF and microwave components and subsystems, custom fiber assemblies, test equipment

Summary: Stratos International is a leading designer and manufacturer of optoelectronic, fiber optic, RF and microwave components and subsystems for the telecommunications, enterprise, military, and broadcast markets. The company’s optoelectronic and fiber optic products, marketed under the Stratos Lightwave brand, are divided into seven unique categories: optoelectronic transceivers, optical connectivity, Tsunami WDM modules, specialty fiber assemblies, digital video products, military communications products, and FTTx products. Stratos, which entered the FTTx market early with an established OEM presence, recently expanded its FTTx product line to include a new series of HFOC (Hardened Fiber Optic) connectors and new handheld optical test instruments. The company has also made its mark on the OSP segment, introducing a

complete end-to-end passive optical network connectivity system specifically designed to address the needs of municipalities, local phone companies, independent service providers, and building developers. Stratos specializes in replacing legacy systems with fiber optic networks. Headquartered in Chicago, Stratos has offices in Florida, Arizona, and Haverhill, UK. The UK facility manufactures the company's advanced fiber components and assemblies, using advanced skills in laser lensing and cleaving of fibers, glass-to-metal hermetic sealing, PVD based fiber metallization, and active device and polarization-maintaining fiber termination. Its broadband data communication products are used in a variety of applications requiring high data-rate networking, including Ethernet, Fibre Channel and SONET, tactical field communications, and digital video transport. Stratos employs 551 people, serves 1300 active customers, exports to 27 countries, and holds an IP portfolio of more than 100 patents. Fourth quarter revenues for 2006 were up 8 percent over third quarter, logging in at \$20.7 million. FTTH Council member.

80. Sumitomo Electric Lightwave

www.sumitomoelectric.com

919-541-8100; 800-358-7378

Key Products: Optical fiber cable, fiber management systems, cable assemblies, fiber cabling systems, fusion splicers and equipment, test equipment, interconnect assemblies and components

Summary: Sumitomo Electric Lightwave, based in Research Triangle Park, NC, specializes in tailored network solutions for the public communications and enterprise network markets, and also serves equipment manufacturers. The company's target customers include ILECs, CATV providers, public network providers, ASPs, contractors, systems integrators, enterprise network operators, and equipment, component and contract manufacturers. Sumitomo Electric Lightwave is privately held, but associated with Sumitomo Electric Industries (SEI). Established in 1897, SEI has become a worldwide force in advanced research, development, and manufacture of fiber optic products. FTTH Council Member.

81. SureWest Communications

www.surewest.com

866-787-3937

Key Products: Full range of telephone, data, IPTV, wireless services

Summary: SureWest, a recognized technology leader, has over 20,000 FTTH connections and is one of the nation's largest purveyors of digital IPTV (over 260 channels, more than 150 channels on digital choice, 75 premium multiplex channels, 28 channels of international programming, live pay per view events and packages, video-on-demand with more than 400 hours of programming per month including the latest blockbuster hits, concerts, TV favorites and how-to videos). This 90-year-old company provides services to 147,000 total access lines, nearly 675,000 voice-grade-equivalent (VGE) access lines, over 50,000 wireless subscribers and over 20,000 customers receiving one or more combinations of digital voice, video and high-speed data service over fiber in the greater Sacramento area. SureWest Telephone can serve all of its customers with DSL or FTTH, and has one of the highest residential DSL penetration rates in the country at over 30 percent. It is considered the seventh largest rural local exchange carrier (RLEC) by market capitalization. Revenue was \$218 million in 2005.

82. Team Fishel

www.teamfishel.com

614-274-8100; 800-347-4351

Key Products: Utility construction and network installation services

Summary: With more than 70 years of experience in the telecommunications industry, Team Fishel specializes in last-mile design and construction of residential fiber optic networks. Team Fishel's Corning-certified FTTx designers and network engineers work closely with customers to design the optical access architecture, secure rights-of-way and the required permits with the municipality, and coordinate with the developers and other utilities. By designing residential duct systems and using joint trench installation techniques, Team Fishel provides cost-effective FTTx delivery systems and new revenue opportunities for greenfield deployments. Established in October, 1936, Team Fishel now has over 1,300 "Teammates," or employees, and is headquartered in Columbus, Ohio. FTTH Council Member.

83. Telco Systems

www.telco.com

800-227-0937

Key Products: TDM multi-service transport and access

products, multiplexers, distribution hubs, transport terminals, and digital cross-connectors

Summary: Founded in 1972 and based in Foxboro, MA, Telco Systems, a wholly-owned subsidiary of BATM Advanced Communications, integrates transport, access, and packet technologies onto industry-leading platforms, and is a leading provider of carrier-class transport and access solutions for IP and TDM networks for carrier, service provider and enterprise markets. Its suite of products includes solutions for Metro Ethernet Access Rings, residential and enterprise VoIP, FTTx, intelligent demarcation and Ethernet service delivery, SONET, WiFi, and legacy service backhaul. The solutions include a large installed base of TDM, SONET, VoIP, VDSL, 10/100, and Gigabit Ethernet products. Telco Systems is committed to the development of transport, access, and packet products for carriers' COs, Co-Los, and POPs, as well as enterprise solutions for FTTH, SOHO, hospitality, education, and MTU/MDU. Telco Systems is a FTTH Council Member.

84. Tellabs

www.tellabs.com
630-798-8800

Key Products: Digital cross-connect, optical transport, switches, network management, managed access, voice-quality enhancement

Summary: Tellabs, which is based in Naperville, Illinois, markets broadband products, installation and professional services that enable high-quality voice, video and data services for enterprise and residential end-users. The company's customers include wireline, wireless, and cable/MSO service providers, system integrators and original equipment manufacturers worldwide – including BellSouth, China Netcom, Embratel (Brazil), Fastlink (Jordan), MobiNil (Egypt), NTT (Japan), Telekom Malaysia, Telenor (Norway), TeliaSonera (Finland), and Telmex (Mexico). As we went to press, Verizon announced that Tellabs is one of three vendors chosen for the next stage of the FiOS buildout, using GPON. Tellabs claims the number one position in the U.S. bandwidth management and fiber access markets, and also claims the number one position in the U.S. digital cross-connect market, with 4,100 systems deployed. It has about 3,700 employees and in 2005 generated sales of \$1.88 billion. FTTH Council Member.

85. TelStrat

www.telstrat.com
972-543-3500

Key Products: Business call recording, business call conferencing, and remote network solutions

Summary: TelStrat provides communication solutions for wireline access networks and enterprise telecommunications environments. These products are focused on providing customers with cost-effective, feature-rich capabilities that allow businesses to maximize communications requirements, and are brought to market through a global network of voice and data resellers. The company's Inteleflex broadband loop carrier platform enables telecommunications providers serving smaller cities and rural markets to bridge today's circuit-switched networks to deliver voice, data and video communication and entertainment services. TelStrat offers the CallParrot Business Call Recording portfolio allowing call center quality monitoring and business liability protection, CallParrot Business Call Conferencing providing cost savings over hosted conferencing services, and more remote access products sold under the Nortel name. TelStrat's Inteleflex carrier gives service providers a seamless path solution to an all-IP infrastructure, with support for access technologies from traditional copper to the latest 2.4 Gbps GPON-based fiber. Founded in 1993, TelStrat is headquartered in Plano, Texas.

86. Tenvera

www.tenvera.com
615-224-9300

Key Products: Systems integrator, home and business fiber optic network solutions; offers Ericsson's two complete lines of blown fiber technology

Summary: Headquartered near Nashville, TN, Tenvera is scheduled to begin full operations in Fall, 2006. The company develops innovative, fiber optic based networks for complete end-to-end solutions for both home and business. The Tenvera premises solutions offer all the fiber, electronics and media conversion required to install a simple, modular, and unlimited bandwidth solutions. Tenvera offers Ericsson's two complete lines of blown fiber technology, Ribbonet and Micronet, integrated fiber deployment systems that offer a wide range of new multimedia services based around inexpensive polymer ducts that can be easily installed in new or existing structures. These high bandwidth solutions offer investment

protection for your home or business by providing unlimited bandwidth capabilities. Tenvera has unique products (patents pending) that require no special optics expertise or costly fusion splicing. FTTH Council member.

87. Terawave

www.terawave.com

510-429-5300, 866-766-8372

Key Products: OLTs, ONTs, Integrated Network Terminals (INTs), management-layer software

Summary: Terawave was founded in 1998, starting with a line of ATM multiservice networking products. Customers include the Iowa Communications Network (ICN), NASA, and enterprises around the world. The company caught our attention last year with an inexpensive, high-density BPON ONT, ideal for MDU deployments. It has now moved to add GPON products as well. The firm has sold ONTs, OLTs and INTs for more than 100 deployments on five continents, and has raised over \$140 million in capital funding in the past few years. Its ONTs come in models designed for both indoor and weather-hardened use, and there is a P2P (“active”) fiber product line as well. Its world-class partners include some of the world’s largest and best-known telecommunications equipment companies, systems integrators, and defense contractors. It designs its own custom chips. Terawave has over 100 fulltime employees

88. TetraTech

www.tetrattech.com

626-351-4664

Key Products: Communications services including network assessment and business planning, program and project management, property rights acquisition, zoning and permitting, design and engineering, and operations and maintenance

Summary: Based in Pasadena, CA, TetraTech employs more than 7,500 people in 250 offices worldwide. TetraTech provides both wireless and wired communication system development and deployment. It plans, designs, permits, constructs and maintains cell phone, co-axial cable, and fiber optic networks. The company began in 1966 as an engineering company devoted to waterways and coastal areas, but branched out in 1997 to include communications services and now installs fiber optic networks worldwide. TetraTech is also a leading provider of specialized management consulting and technical

services in the areas of resource management and infrastructure. In 2005, the company showed revenues of \$1.3 billion. FTTH Council member.

89. Transition Networks

www.transition.com

952-941-7600; 800-526-9267

Key Products: Copper-to-fiber media conversion

Summary: According to ElectronicCast, Transition Networks owns 21.6 percent of the global media conversion market, with 32 percent higher sales figures than its closest competitor. In March 2006, Transition Networks, a wholly owned subsidiary of Communications Systems, Inc., announced a number of new products, including a new, remotely managed 10/100 copper-to-fiber media converter for its Point System modular chassis that supports the IEEE 802.3AH OAM In-Band management for monitoring, reporting, and active management of the entire link; a new miniature 10/100 Ethernet media converter; and two new Power over Ethernet (PoE) media converters. The company’s media converters are designed to support Ethernet in the First Mile (EFM) or Fiber-To-The-Premise (FTTP) deployments such as E-Line and E-LAN, as well as enterprise markets seeking a common platform for remote management of offsite stations. The company works alongside leading networking vendors – Nortel Networks, Hewlett Packard, 3COM, Cisco, Enterasys, Extreme, Foundry, Avaya and others. In 2005, Transition Networks announced the integration of Milan Technologies, which added the complete line of Milan branded multilayer switching and wireless products to Transition’s inventory. Based in Minneapolis, Transition Networks distributes hardware-based connectivity solutions exclusively through a network of resellers (including Ingram Micro and Tech Data) in 50 countries.

90. TT Technologies

www.tttechnologies.com

800-533-2078

Key Products: Trenchless equipment including piercing tools, guided boring tools, pneumatic, static and lateral pipe bursting systems, pipe ramming tools, bentonite mixing systems, constant-tension winches, directional drills and mini-directional drill rigs

Summary: For over 40 years TT Technologies has been an innovator in trenchless technology, beginning with pneumatic

boring tools. Today, with over 200 patents worldwide, TT specializes in trenchless applications ranging from pipe pulling, pipe ramming, pipe bursting, sliplining, and directional boring. The company offers a nationwide network of regional customer service offices and distribution locations to ensure the proximity of products and expertise to any customer. It also presents comprehensive, hands-on training seminars at its corporate offices in Aurora, IL, as well as regional shows, seminars, and demonstrations throughout North America each year. For a recent major trunk water main replacement project in Taos, NM, utility contractor VIS-COM partnered with TT Technologies, using the company's Grundoburst™ 800G static pipebursting system to replace the nearly 16,500 feet of 8-inch PVC. In addition to the relatively large scale of the replacement, the project also included one single run of over 2,800 feet, setting a new world record for the longest continuous static pipebursting run. A FTTH Council member.

91. Verizon Communications, Verizon Enhanced Communities, Verizon Wireless

www.verizon.com/fios, connected.verizon.com
212-395-2121

Key Products: FiOS fiber optic and DSL-based communications services, including video, voice, and data; wireless services

Summary: Verizon Communications, based in New York, markets its FTTH service under the FIOS brand name. By the end of 2006, FIOS is expected to be available to 6 million homes – at relatively low prices. The FIOS high-speed Internet access service offers connections speeds up to 50 Mbps or 30 Mbps downstream and 5 Mbps upstream, with prices starting at \$39.95 per month. The FIOS TV service offers HDTV and DVR options with prices starting at \$32.95 per month. It has been estimated that to deploy FIOS, Verizon eventually will invest \$20 billion. Verizon has 217,000 employees and in 2005 generated sales of \$75.1 billion. In addition to FIOS, Verizon offers DSL broadband Internet service to residential and commercial telecom customers. Verizon Enhanced Communities, renamed from Verizon Avenue more than a year ago, signs access, service and marketing agreements with developers of single-home complexes, new apartment and condo and co-op high-rises, military installations, and student housing. The business unit also retrofits multifamily properties with the company's most advanced services, including FiOS TV. It serves well over 1 million dwelling units.

92. Vermeer Manufacturing

www.vermeer.com
888-837-6337; 641-628-3141

Key Products: Horizontal directional drilling equipment

Summary: Vermeer Manufacturing is a leading agricultural, construction, environmental and industrial equipment manufacturing company. Based in Pella, Iowa, the company has a long history of involvement in the fiber-optics installation industry – having launched its Navigator horizontal directional drilling machine line-up in 1991. The Navigator HDD line-up has been instrumental in installing fiber optics around the world. Navigator HDD units, which combine efficient rod loaders, rugged construction, intelligent technology and high torque, are well-suited to the underground installation of telecommunications lines without excavation or trenching – ensuring minimal environmental disruption. The company also has been politically active in the broadband industry. In April, Vermeer was one of 17 companies that lobbied the House Energy and Commerce Committee in opposition to “network neutrality” legislation. FTTH Council Member.

93. Vision Broadband Now/New England Broadband

www.visionbroadbandnow.com or
www.newenglandbroadband.net
866-333-6321 or 603-425-6377

Key Products: Installation and constructions services for planned and MDU communities, consumers and small businesses

Summary: Vision Broadband Now (Networks, Optical and Wireless) and New England Broadband are full service broadband engineering, installation and consulting companies providing solutions to the telecommunications industry as well as to small-office-home office customers and individual consumers. New England Broadband is the parent company. Vision Broadband Now is the trademark for the operations outside of New England. Services range from designing and provisioning “Fiber to the Home” (FTTH) telecommunication systems and installing an in-home data network to programming a customer's universal TV remote control. For owners and developers of planned communities and multiple dwelling unit properties, services include business and case model development; call center solutions; technology platform assessments; high level network planning; development and implementation of budgets, timelines, ROI analysis and exit

strategies; development of outside plant and structured wiring specifications; planning and negotiations for the call center, billing platforms and other customer service related functions; programming negotiations; development and implementation of a strategic marketing plan including subscriber retention, subscriber upgrades and PPV orders; product service offerings; customer satisfaction surveys. Both companies are based in Londonderry, New Hampshire. In New England they serve Massachusetts, New Hampshire and Maine, and outside New England operate in Virginia, Maryland, Georgia, North Carolina and Florida. The companies have 17 employees, up from 14 in 2005. Sales for the combined operations in 2005 were \$2.5 million, up from \$1.8 million in 2004.

94. Wave7 Optics

www.wave7optics.com
678-339-1040

Key Products: Optical broadband access systems

Summary: Wave7 Optics markets optical broadband access systems based on IP and Ethernet or ATM standards, for “triple play” voice, video and data services. The company’s patented Last Mile Link system and Trident7 optical access platform are aimed at service providers in the IOC, CLEC, MSO, municipal, utility and real estate development categories. Based in Alpharetta, Ga., Wave7 Optics was founded in 2000, has approximately 100 employees, and has raised more than \$86 million in funding to date. The company has established a state-of-the-art research and development lab to support product design, development, prototype production and testing. Both hardware and software engineering are located in the headquarters facility. FTTH Council Member.

95. Westek Electronics

www.westek.com
831-465-3500; 800-526-CORD (2673)

Key Products: Custom fiber and coax test and patch cabling, cable assemblies, fiber jumpers, attenuators, adaptors, patches, cleaning kits, multi-breakouts, multi-fiber puller (Fiber Connector Insertion Removal Tool), web slitter kit, tech support laptop kit, tel-line tester.

Summary: Westek was founded in 1986. This Santa Cruz, California, company specializes in OEM test cords, patch and hardwire installed cable leads. Westek Electronics Inc. uses highly durable, lightweight, state-of-the-art materials to manufacture and customize its high-quality cables and components

as well as electronic test kits for communication systems. Westek can work from client drawings or assist clients in generating them. Clients include Qwest, Verizon, AT&T, and Bell South. Registered with Lloyd’s Register Quality Assurance.

96. White Rock Networks

www.whiterock.com
972-543-6900

Key Products: Multi-service optical access, transport, and aggregation products

Summary: Headquartered in Richardson, Texas’s Telecom Corridor, White Rock Networks sells products that serve the full array of data, voice, and video optical transport and service delivery applications. It specializes in leveraging in-place SONET/TDM access infrastructures and separate/expensive edge routers and digital cross-connect systems. In June 2006 White Rock announced it had added Ethernet transport capability and a protected chassis to the VLX300 and VLX400 Service Edge Concentrators, which enables them to receive customer Ethernet traffic originating on T1s, terminate it on channelized DS3 interfaces, and trunk the traffic using VLANs over Gigabit Ethernet. The VLX300 and VLX400 are the industry’s only service edge concentrators. And in May 2006 White Rock announced it had added a 10 Gbps VT1.5 groomer option to its VLX2020 Optical Transport System, which combines a SONET ADM, a DCS (Digital Cross-Connect System), and an edge Ethernet aggregation platform in a single 2 RU package. White Rock has established OEM or remarketing relationships with Tellab, Marconi Federal, and Polaris Networks. Founded in the late 1990s, White Rock’s products are now installed in the networks of more than 75 service provider networks including those of ILECs, CLECs, IXC, CATVs, ISPs, wireless providers, and institutional customers including the federal government.

97. World Wide Packets

www.worldwidepackets.com
509-242-9000

Key Products: Optical Ethernet access portals, concentrators, distributors and network management

Summary: World Wide Packets got its start in the Northwest, building some of the earliest FTTH networks. It has pioneered the expansion of Ethernet solutions deeper into metro-area fiber rings, where Ethernet has supplemented ear-

lier telco SONET and cable networks. WWP's carrier-quality IEEE 801.1 Ethernet solutions have allowed network providers a high level of flexibility and reliability in the deployment of high-bandwidth revenue-generating services. WWP's popular "active" (switched point-to-point is a more descriptive term) Ethernet LightningEdge family is used in muni and greenfield networks to leverage the flexibility and low cost of Ethernet to reduce capital and operating expenses of serving IPTV, VoIP, and mission-critical data over pure FTTH or short copper loops. Founded in 1999 and privately held, World Wide Packets is based in Spokane Valley, Washington and does business worldwide directly and through partnerships with Ericsson, Lucent and Tellabs. The company has 125 employees. FTTH Council member.

98. Ygnition Networks

www.ygnition.com
206 574 5480

Key Products: Triple-play services for MDUs and commercial data services

Summary: Ygnition provides broadband services – including video, voice and data (both wired and wireless) – to the multi-dwelling unit market. The company may be the largest revenue generating private (non-RBOC, non-MSO) provider of services in the national apartment industry, with about 140,000 units served and over 1,000 business customers. It currently operates in 34 states. The firm has 155 employees and is headquartered in Seattle. The company was started in 2001 by Glenn Meyer, its founder and executive chairman, and has experienced consistent double-digit percentage revenue growth in each year of its existence. The company has raised \$36 million of equity since its inception, and broke into the black in 2005.

99. Zoomy Communications

www.zoomyco.com
970-928-7722

Key Products: Design and engineering services, planning and feasibility studies, project management, network construction management, network operation and maintenance.

Summary: Zoomy Communications (ZoomyCo) provides design, engineering, construction management and ongoing consulting, operation and maintenance of FTTP networks for real estate developers, municipalities, public utility districts

and telecommunication companies. The company markets turnkey design and implementation of complete broadband solutions that support voice communications, Voice over IP services, very high-speed data and Internet services, cable TV, video-on-demand and high definition TV. In addition to technical support and implementation, ZoomyCo provides business plans and feasibility studies. ZoomyCo's customers have included Qwest, AT&T Broadband, Level 3 Communications, 360 Networks, Media One and Verizon Wireless, as well as communities including Sandpoint, Idaho, and Morgan County, Colo. ZoomyCo is based in Glenwood Springs, Colo. FTTH Council Member (CEO Diane Kruse is chair of the council this year).

100. ZyXEL Communications

www.zyxel.com
714-632-0882; 800-255-4101

Key Products: ADSL2/2+, VDSL, VDSL2, g.SHDSL IP DSLAM and CPEs, Ethernet switch/adaptor, Wireless LAN, Internet Security, VoIP, WiMAX, Network Management

Summary: ZyXEL Communications Corp., headquartered in Hsinchu, Taiwan, is the world's largest DSL router provider. Gartner Dataquest ranks ZyXEL as the world's leading manufacturer of xDSL gateways. Its broad line of IP networking solutions includes access multiplexers, customer premise equipment, Internet security, Wireless LAN and VoIP equipment, enabling high-performance network services for telcos, cable operators, ISPs, small to medium-sized businesses, residential/SOHO and institutional MTU/MDU (multi-tenant unit/multi-dwelling unit) markets. ZyXEL maintains offices in Anaheim, Calif. and in Europe and Asia. The company has more than 2,100 employees worldwide, and markets its products in more than 150 regional markets in 70 countries through more than 70 distributors. US sales last year were \$43 million; revenue worldwide \$390 million. **BBP**

**A Multitude of Exhibitors and Speakers
Will be at This Years Broadband Properties
Summit. Do not Miss this Opportunity.
Time is Running Out for Registration.
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877.588.1649 for more information.**