# The BBP Top 100 for 2007

## *This year's leaders in the fiber market continue to innovate and to drive FTTx deployments*

**W**ant evidence that our industry continues to evolve? Look no further than the BBP Top 100. Three years ago, we gave special emphasis to organizations with the guts to deploy fiber to the home – specific housing developers, for instance, and VoIP providers. Last year's list still included many technology companies that certainly enabled fiber builds, but whose emphasis was deeper in the network – bringing fiber to the neighborhood, for instance, or specializing in carrier Ethernet. We admired their network management technologies and their contribution to First Mile fiber.

But the bar continues to rise. Size still matters, but to make this list this year, innovation and a specific commitment to fiber – especially fiber to the home – counted a lot more. Thus, some of the world's largest telecommunications equipment suppliers dropped off the list this year – Fujitsu and Siemens among them (although a Siemens spinoff to Nokia made the cut). Dropped were companies that have been true innovators in carrier Ethernet, such as WWP, but that are no longer as prominent in FTTx-specific products and services. Some firms in the same space are missing simply because they were acquired – Entrisphere, Stratos, and Netcentrex among them. Others are gone because while their products – power backups, for instance – are vital to fiber, FTTH accounts for a small part of their overall business.

At the same time, Occam Networks and Zhone, also concentrating on carrier Ethernet, made the list this year after being passed over in 2006. Why? Both companies' products and services are showing up in many new fiber-to-the-home deployments.

As for service providers, Zoomy and Connexion Technologies have been joined by firms like LTS Group. Tenvera made the list last year as our smallest company – it was just getting started. It remains on the list, confirming our faith in its management and business plan. Some larger telcos such as Shentel and SureWest – and, of course, Verizon – continue on the list, partly for their innovative business plans and partly for the sheer amount of money they are pouring into fiber networks, money that stimulates smaller innovators and helps to drive down deployment costs for everybody. Just two years ago, we honored cable companies and SBC (not AT&T). No longer.

Note that we also tend to be North American-centric. NTT in Japan runs neck-and-neck with Verizon as the worldwide leaders in capital investment as they build out huge fiber networks. But although NTT uses many American products, our mainly American readers are interested in NTT more as providing a business model to study than as a partner. We also see innovative new companies coming into the service provider business – companies like DirecPath (which missed because it is still

mainly coax) and Hiawatha Broadband Communications.

Other tough calls for us along the international fault line were companies like Prysmian – a major fiber and copper cable vendor worldwide (it was spun out of Pirelli) that is expanding its fiber business here, selling such products as its blown fiber and massive fiber ribbon cables – but which has been making a bigger FTTx impact in the US only in the past year or so. It didn't make the Top 100 this year, but is definitely in our sights for the future.

We see more prominence in the years ahead for training companies – Light Brigade was added this year – and for firms that produce equipment and software meant specifically for network monitoring to ensure delivery of IPTV and other bandwidth-hungry, high-QoS services. Thus, companies like IneoQuest (specifically in network monitoring) missed this year, but rate increased attention for the years ahead. Also on our watch list are security companies like InGrid and LenSec. They were not quite fiber-specific enough to make the list this year, but their services help enable business plans for new First Mile fiber.

In short: the target continues to become tougher to hit. Fiber has continued to mature. Today, thanks to many companies, the cost of fiber-optic deployments is half what it was a year ago – and a year ago it was half of 2005 costs. Already this year, Corning has announced a new tough, bendable fiber that will cut costs again, especially in MDU deployments.

Demand for broadband content is also growing fast. The technology risk compared to coax and other competing broadband approaches was nil last year. Now, the risk of NOT deploying fiber is real, and increasing – just look at AT&T, which has seen disappointing penetration for its FTTN network and is rumored to be considering FTTH and FTTC overbuilds starting soon – perhaps later this year.

For us, the key tiebreaker question, as always, 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 more than 50 companies this year, and more than a half-dozen made the list – companies we might not otherwise have known about.

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### About the Authors

Our Top 100 list was researched by Marianne Cotter, Rachel Ellner and Kassandra Kania, supervised by Telecom Editor Masha Zager and overseen by Editor-in-Chief Steve Ross. Suggestions for next year? E-mail steve@broadbandproperties.com.

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|---|---|---|---|
| 180 Connect | www.180connect.net | 303-395-6000 | 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 | www.adc.com | 952-938-8080; 800-366-3889 | Fiber and copper connectivity products, structured cabling solutions, wireless equipment |
| Adesta | www.adestagroup.com | 402-233-7700 | Design, construction and maintenance of stand-alone or integrated communications networks and security systems |
| ADTRAN | www.adtran.com | 256-963-8000 | Solutions for broadband access, outside plant, Carrier Ethernet, optical access and mobile backhaul; IP business solutions |
| Advanced Media Technologies (AMT) | www.amt.com | 954-427-5711; 888-293-5856 | GePON fiber-to-the-home solutions, fiber-to-the-node solutions, cabling, digital headends, set-top boxes |
| AFL Telecommunications | www.afltele.com | 864-433-0333; 800-235-3423 | FTTx electronics, fusion splicers, test equipment, and systems engineering |
| Alcatel-Lucent | www.alcatel-lucent.com | 908-582-3000 | Fixed, mobile and converged broadband networking, IP technologies, applications, and services |
| Alliance Fiber Optic Products | www.afop.com | 408-736-6900 | High-performance fiber optic components, electronics, and integrated modules |
| 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 | Power systems for the broadband communications industry |
| Amedia Networks | www.amedianetworks.com | 732-440-1992 | Premises gateways and switched Ethernet access solutions |
| APA Cables and Networks, Inc. | www.apacn.com | 763-476-6866 | Fiber optic components for independent and rural telcos, cable TV providers, utilities and municipal networks |

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|---|---|---|---|
| Applied Optoelectronics | www.ao-inc.com | 281-295-1800 | Diode lasers, photodiodes, transceivers, subassemblies and related modules and equipment for CATV, telecommunications, FTTx, and wireless applications |
| ARNCO/DuraLine | www.duraline.com, www.arncocorp.com | 800-847-7661, 800-321-7914 | Extruded high-density polyethylene (HDPE) duct, pipe and conduit products for the telecom, power utility, electrical and cable markets |
| Astec Underground | www.astecunderground.com | 865-408-2100; 800-527-6020 | Trenchers, vibratory plows and directional drilling equipment |
| Atlantic Engineering Group | www.atlantic-engineering.com | 706-654-2298 | Fiber optic design and engineering, construction, technical services and construction management |
| Blonder Tongue Laboratories | www.blondertongue.com | 732-679-4000; 800-523-6049 | Headend equipment, test equipment, systems design engineering, 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 |
| Calix | www.calix.com | 877-766-3500, 707-766-3000 | Multiservice access platforms and software, fiber-to-the-premises equipment; IP service edge nodes for fiber-to-the-node |
| Canobeam (Free Space Optics division of Canon) | www.canobeam.com | 201-807-3300; 800-321-4388 | Optical transceivers |
| Carlon | www.carlon.com | 216-464-3400 | Fiber optic, copper and coaxial cable protection |
| C-Cor | www.c-cor.com | 814-238-2461; 800-233-2267 | Equipment and software that expand network capacity, assure service quality, and deliver on-demand and advertising services |
| Charles Industries | www.charlesindustries.com | 847-806-6300 | Outside plant fiber optic distribution pedestals and enclosures, wireless backhaul multiplexers and terminals, extended-reach DSL systems |
| Cisco / Scientific Atlanta | www.cisco.com, www.scientificatlanta.com | 770-236-5000 | Digital set-top boxes and accessories, cable modems, headend equipment, addressable network management systems, wireless |

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|---|---|---|---|
| ClearMesh | www.clearmesh.com | 626-535-2800 | Wireless optical mesh solutions for metro grids |
| 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 |
| Communication Technology Services (CTS) | www.cts1.com | 800-834-5838 | In-home and in-business structured wiring, wireless LANs, VoIP, carrier network services including construction management |
| Communications Data Group (CDG) | www.cdg.ws | 888-234-4443 | Billing and provisioning systems |
| Connexion Technologies | cnxntech.com | 919-535-7329 | Design, build, operate and invest in fiber optic networks |
| Corning, Corning Cable Systems | www.corning.com, www.corningcablesystems.com | 828-901-5000 | Optical fiber, optical fiber cable, coaxial interconnect systems, telecommunications hardware and equipment |
| Ditch Witch | www.ditchwitch.com | 800-654-6481 | Construction tools for laying fiber |
| Draka Comteq | www.drakacomteq.us | 800-879-9862 | Optical fiber and cabling solutions |
| EMBARQ Logistics | www.embarqlogistics.com | 913-791-7000; 800-755-3004 | Telecommunications equipment; logistics, engineering, integration and deployment services |
| Emerson Network Power | www.emersonnetworkpower.com | 440-246-6999; 800-800-1280 | Power systems, precision cooling, outside plant solutions, racks and integrated cabinets, embedded power and computing, connectivity |
| 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 |

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|---|---|---|---|
| Ericsson | www.ericsson.com/us | 972-583-0000 | VDSL2 and FTTH solutions, Ribbonet broadband installation solution for FTTx applications, cables and interconnect products, microwave networks, network management tools, stations and broadband switches, IPTV middleware |
| ETI Software | www.etisoftware.com | 770-242-3620 | Convergent cable billing, provisioning and subscriber management services |
| Foxcom | www.foxcom.com | 609-514-1800 | Broadband fiber optic MDU distribution systems for video and data; satellite downlink signal transport over fiber |
| Gibson Technical Services | www.gibsontech.com | 770-345-1670 | Engineering, technical, and construction services to the cable, fiber optic, and wireless industries |
| Graybar | www.graybar.com | 800-GRAYBAR (472-9227) | Distributor of fiber connectors, couplers, housings, panels, splice trays, fusion splicers, cleaners, test equipment; provider of VAR services |
| 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, electronic and optical components, wireless |
| InfiniSys Electronic Architects | www.electronicarchitect.com | 386-236-1500 | Technology solutions to the multifamily industry including the Fiber-to-the-Apartment system and iPod-Ready Apartment Home |
| JDSU | www.jdsu.com | 408-546-5000 | Fiber optic communications components and testing equipment |
| KiS Communications | www.kis-comm.com | 731-986-0178 | Engineering and technical services for broadband and wireless service providers |
| KT Communications | www.ktcom.tv | 877-485-3557; 573-446-3693 | Satellite-delivered video programming |

| Leviton | www.leviton.com | 718-229-4040 | Premises wiring, outside plant, central office solutions and home automation products |
|---|---|---|---|
| Light Brigade | www.lightbrigade.com | 800-451-7128; 206-575-0404 | Fiber optic training for industry professionals that focuses on design, installation and maintenance |
| LTS Group | www.LTSCompany.com | 206-275-6707 | Development, design, deployment, sales and operation of fiber-to-the-premises networks |
| MetaSwitch | www.metaswitch.com | 510-748-8230 | Class 4/5 softswitches and application solutions |
| Michels Communications | www.michels.us | 920-583-3132 | Fiber optic network design and construction |
| Motorola Broadband (BCS) and Canopy | broadband.motorola.com, motorola.canopywireless.com | 888-944-HELP (BCS), 866-515-5825 (Canopy) | Metro-area WiFi, cable modems, cordless phones, digital audio players, home entertainment, home monitoring and control, VoIP, home networking |
| Multilink | www.multilinkone.com | 440-366-6966 | Manufacturer of telecommunications network components |
| Nokia Siemens Networks | www.nokiasiemensnetworks.com | 404-257-4000 | Products, services and solutions for fixed and mobile network infrastructure |
| NorthStar Communications Group | www.northstar.net | 877-862-8682 | Complete services for ISP and OSP telecommunications infrastructure, engineering solutions |
| Occam Networks | www.occamnetworks.com | 805-692-2900 | IP- and Ethernet-based Broadband Loop Carriers (BLC) and related telecommunications access equipment |
| On Trac | www.ontracinc.net | 423-317-0009 | FTTx consulting, design and installation services |
| Optelian | www.optelian.com | 877-225-9428 | Optical transport systems for access, metro and regional networks |
| Optical Cable Corporation | www.occfiber.com | 540-265-0690 | Fiber optic cables |

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|---|---|---|---|
| Optical Entertainment Network | www.fision.net | 713-357-9600 | FISION triple play service |
| Optical Fiber Solutions (OFS), a Furukawa company | www.ofsoptics.com | 770-798-5555; 888-342-3743 | Optical fiber, optical cable, optical connectivity products including fiber distribution hubs, and specialty photonics |
| Ortronics/Legrand | www.ortronics.com | 877-599-5393 | Structured wiring, cable and fiber assemblies, associated hardware, engineering services |
| Pace | www.pacemso.com | 507-288-1853; 800-444-7223 | Wholesaler for coaxial and fiber cables and outside plant; system design, technical support and training |
| PacketFront | www.packetfront.com | 603-888-5100 | Integrated control and provisioning system, switches, routers, IP DSLAMs |
| Pannaway | www.pannaway.com | 603-766-5100 | Optical line terminals, optical network terminals, ADSL equipment, IP chassis, network management |
| PMC-Sierra | www.pmc-sierra.com | 408-239-8000 | Integrated circuits including FTTH/PON products, networking chips, wireless BSC/BTS solutions and system-on-chip digital home convergence solutions |
| Preformed Line Products | www.preformed.com | 440-461-5200 | Products and systems for underground and overhead cable and wire installation and maintenance |
| Primal Solutions | www.primal.com | 949-260-1500; 800-438-0921 | Communications software allowing usage-based billing for IP services |
| Proxim Wireless | www.proxim.com | 800-229-1630 | Wireless gigabit, wireless backhaul, WiMAX, WiFi mesh, wireless LAN and network management systems |
| Redcom | www.redcom.com | 585-924-7550 | Telecom switching systems and transportable telecommunications 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 | Fiber optic products for the telecom and data communications industries |

| Shentel (Shenandoah Telecom-munications) | www.shentel.com | 800-743-6835 | ISP services, telephony, wireless, long-distance, Internet, and cable TV services in the mid-Atlantic and southeastern US |
|---|---|---|---|
| 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 | Telephone, high-speed Internet (up to 50 Mbps symmetrical), digital and HD television, and 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 multiservice transport and access products, multiplexers, distribution hubs, transport terminals and digital cross-connectors |
| Telect | www.telect.com | 800-551-4567 | Triple-play connectivity, power, rack, cabinet and cabling solutions for the global communications industry |
| Telkonet | www.telkonet.com | 866-375-6276 | Powerline carrier networking solutions |
| Tellabs | www.tellabs.com | 630-798-8800 | Broadband access equipment for wireline and wireless networks |
| TelStrat | www.telstrat.com | 888-658-8572 | Broadband loop carrier, emergency stand-alone solutions, network element management solutions, OEM remote access solutions |
| Tenvera | www.tenvera.com | 615-224-9300 | Fiber-in-the-home solution |
| Terawave | www.terawave.com | 510-429-5300; 866-766-8372 | GPON/BPON optical line terminals, optical network terminals, integrated network terminals and management-layer software |
| Tetra Tech | www.tetratech.com | 626-351-4664 | Communications planning, project management, engineering and operations services |
| Toner Cable Equipment | www.tonercable.com | 215-675-2053; 800-523-5947 | Distributor of headend equipment, fiber optic cable, coaxial cable, taps and splitters, connectors, tools, test equipment, optical transmitters, amplifiers |

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| TT Technologies | www.tttechnologies.com | 800-533-2078 | Trenchless equipment for pipe pulling, pipe ramming, pipe bursting, sliplining, and directional boring |
| Verizon Communications, Verizon Enhanced Communities | www.verizon.com/fios, communities.verizon.com | 212-395-2121 | FiOS fiber optic and DSL-based communications services, including video, games, voice, and data |
| Vermeer Manufacturing Company | www.vermeer.com | 888-837-6337; 641-628-3141 | Horizontal directional drilling equipment |
| Wave7 Optics | www.wave7optics.com | 678-339-1040 | Optical broadband access systems |
| Westek | www.westek.com | 831-465-3500; 800-526-CORD (2673) | Test cords, patch and hardwire installed cable leads |
| Windstream Communications | www.windstream.com | 866-961-9463 | Phone, broadband and digital TV services |
| Ygnition Networks | www.ygnition.com | 206-574-5480 | Triple-play services for MDUs and commercial data services |
| Zhone | www.zhone.com | 510-777-7000; 877-946-6320 | Telecommunications equipment for broadband access, VoIP, IPTV, and Ethernet applications |
| Zoomy Communications, Inc. | www.zoomyco.com | 970-928-7722 | Design, engineering, planning, project management, construction management, operation and maintenance for fiber-to-the-home networks |
| ZyXEL Communications Corp | www.us.zyxel.com | 714-632-0882; 800-255-4101 | xDSL routers and gateways, carrier-grade aggregation, access and premises solutions for gigabit and 100 Mbps fiber deployments |

*"The industry trends driving the demand for cable and satellite service offerings…include the convergence of technology; the strong upgrade trend from basic to digital cable and HDTV; the introduction and adoption of other new technologies, including DVRs, VoIP and cable telephony; and the growth of 'digital homes' wired for sound, video and data."*
**– Peter Giacalone, President and CEO, 180 Connect**

**BroadbandProperties**
**2007**
**Top 100**
**w w w . b b p m a g . c o m**

## 1. 180 Connect
www.180connect.net
303-395-6000

**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. Head-quartered in Denver, Colorado, it has more than 85 operating locations and employs more than 4,000 skilled technicians and 750 support personnel. Installation services include initial contracting through final certification and testing. Earlier this year, 180 Connect signed an exclusive structured wiring agreement with Ryland Homes in Northern California. The company also announced an agreement to install and integrate fiber-to-the-home triple play services for Optical Entertainment Network, a Houston, Texas–based company providing video, internet and voice to residential and commercial customers over a system designed to optimize FTTH technology. Other current projects include providing FTTH to an estimated 30,000 new homes and 2 million square feet of commercial and mixed use space in Ontario, California, and helping the City of Boise Airport Authority in Boise, Idaho, upgrade its CCTV storage system and install fiber optic cable. 180 Connect's revenue for 2006 was $335.4 million.
**Member, 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 fiber-to-the-premises optical pipeline – the full universe of physical-media layer capabilities for implementing FTTP in the central office, outside plant and customer premises. This includes discrete and multifiber splices and tools; epoxy, epoxyless and hot melt connectors in FC, SC and ST configurations; GGP cable assemblies using glass/glass/polymer fibers that are designed to be more flexible and durable than standard fibers; cross-connect and interconnect fiber cable management systems (ODF, FDUs) 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;

and Dynatel locating and marking products for fault-finding, locating and permanent marking and mapping of buried facilities and points of special interest. The 3M Communication Markets Division is headquartered in Austin, Texas.
**Member, FTTH Council.**

## 3. ADC
www.adc.com
952-938-8080; 800-366-3889

**Key Products:** Fiber and copper connectivity products, structured cabling solutions, wireless equipment and professional services

**Summary:** ADC is a global supplier of network infrastructure products and services for the delivery of Internet, video, data and voice services to consumers and businesses over wireline, wireless, cable, broadcast, and enterprise networks worldwide. 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 WiFi and WiMAX. ADC employs approximately 8,500 professionals worldwide, holds thousands of patents, and had sales of $1.3 billion in FY 2006. The company has sales, manufacturing and development offices in more than 35 countries and sells into more than 130 countries. ADC is headquartered in Eden Prairie, Minnesota, and has regional sales offices in Berlin, Shanghai and Berkeley Vale, Australia. ADC's customers include Verizon, AT&T, Qwest, T-Mobile, Sprint Nextel, BT, Deutsche Telekom, Hong Kong Telecom and many others.
**Member, FTTH Council.**

## 4. Adesta
www.adestagroup.com
402-233-7700

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

**Summary:** Headquartered in Omaha, Nebraska, Adesta is a systems integrator and project management company for communications 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 six markets – telecommunications, wireless technology, regional broadband initiatives, commercial security, critical infrastructure and public safety – and has deployed more than 2 million miles of fiber and built more than 800 electronic security systems in the United States, Asia, Europe, Central America and the Middle East. The company maintains 10 regional offices throughout

# Service Providers and Network Owners

From among the thousands of great ISPs and network owners in North America, these firms have shown particular vision in expanding broadband use. BBP Top 100 companies are in bold. Does not include purely municipal systems.

| Company Name | Web Address |
|---|---|
| AT&T | www.att.com |
| BroadRiver Digital | www.broadriver.com |
| **Broadweave Networks** | **www.broadweave.com** |
| Charter Communications | www.charter.com |
| ClearWire | www.clearwire.com |
| Comcast | www.comcast.com |
| **Connexion Technologies** | **www.cnxntech.com** |
| Cox Communications | www.cox.com |
| DirecTV Group | www.directv.com |
| FTTH Communications | www.ftthcom.com |
| Guadalupe Valley Telephone Coop | www.gvtc.com |
| Hiawatha Broadband Communications | www.hbci.com |
| Korcett Holdings | www.korcett.com |
| **KT Communications** | **www.ktcom.tv** |
| Long Lines, Ltd | www.longlines.com |
| **LTS Group** | **www.LTSCompany.com** |
| Multiband | www.multibandusa.com |
| Omega Communication Services | www.omegacomminc.com |
| **Optical Entertainment Network (OEN)** | **www.fision.net** |
| Pavlov Media | www.pavlovmedia.com |
| Paxio | www.paxio.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.timewarnercable.com |
| TotalVision | www.total-vision.net |
| **Verizon Enhanced Communities** | **connected.verizon.com** |
| **Verizon FiOS** | **www.verizon.com/fios** |
| WildBlue | www.wildblue.com |
| **Windstream Communications** | **www.windstream.com** |
| Xittel | www.xittel.com |
| **Ygnition Networks** | **www.ygnition.com** |
| **Zoomy Communications** | **www.zoomyco.com** |

# Cabinets, Enclosures (OSP)

These firms supply "outside plant" equipment including hubs, ducts, connectors and boxes for broadband. BBP Top 100 firms in bold.

| Company Name | Web Address |
|---|---|
| **3M Company** | **www.3M.com/telecom** |
| **ADC** | **www.adc.com** |
| **ADTRAN** | **www.adtran.com** |
| **AFL Telecommunications** | **www.afltelecommunications.com** |
| **Alcatel-Lucent** | **www.alcatel-lucent.com** |
| American Power Conversion (APC) | www.apcc.com |
| **APA Cables and Networks** | **www.apacn.com** |
| **Calix** | **www.calix.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 Cable Systems** | **www.corningcablesystems.com** |
| **Emerson Network Power** | **www.emersonnetworkpower.com** |
| **Emtelle** | **www.emtelle.com** |
| **Ericsson** | **www.ericsson.com** |
| Fujitsu Network Communications | us.fujitsu.com/telecom |
| **Leviton Manufacturing** | **www.leviton.com** |
| LS Cable | www.lscable.com |
| **Motorola Broadband (BCS) and Canopy** | **broadband.motorola.com (BCS) and motorola.canopywireless.com (wireless and BPL)** |
| **Nokia Siemens Networks** | **www.nokiasiemensnetworks.com** |
| Nortel Networks | www.nortelnetworks.com |
| **OFS** | **www.ofsoptics.com** |
| **Ortronics/Legrand** | **www.ortronics.com** |
| Pico Macom | www.picomacom.com |
| **Preformed Line Products** | **www.preformed.com** |
| Prysmian | www.prysmian.com |
| RadUSA (RAD Data Communications) | www.radusa.com |
| **SENKO Advanced Components** | **www.senko.com** |
| **Sumitomo Electric Lightwave** | **www.sumitomoelectric.com** |
| TeleCrafter Products | www.telecrafter.com |
| **Telect** | **www.telect.com** |
| **Tellabs** | **www.tellabs.com** |
| **Terawave** | **www.terawave.com** |
| Tyco Electronics | www.tycoelectronics.com |
| **Zhone Technologies** | **www.zhone.com** |

# Thinking of FTTH but not sure how to proceed?

## Prysmian can help you see the light.

www.prysmianUSA.com

As a world leader in optical communications, Prysmian can help you identify and build the best FTTH network for your business.

**To find out how we can help you, give us a call at 800 669 0808. And, be sure to visit our booths at the upcoming Broadband Properties and FTTH shows.**

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CABLES & SYSTEMS

the US. Customers include the Maryland Broadband Cooperative, Mid-Atlantic Broadband Cooperative, Five College Net, Northern Enterprises/North-Link, Chicago Transit Authority, Connecticut Telecommunication System, State of Iowa, New Jersey Turnpike Authority, US Army Corps of Engineers, US Bureau of Reclamation, Alabama State Port Authority, Port of Baltimore, Port of Beaumont, Port of Corpus Christi and Port of Houston. Adesta's revenue in 2006 was $75 million and its employee count was 326. **Member, FTTH Council.**

### 5. ADTRAN
www.adtran.com
256-963-8000

**Key Products:** Solutions for broadband access, outside plant, carrier Ethernet, optical access and mobile backhaul; IP business solutions

**Summary:** ADTRAN is a global provider of networking and communications equipment with a portfolio of more than 1,600 products for use in the first mile of telecommunications networks. Widely deployed by carriers and enterprises alike, ADTRAN solutions enable voice, data and video communications across copper, fiber and microwave network infrastructures. ADTRAN solutions are currently in use by every major US service provider and many global providers, as well as by thousands of public, private and governmental organizations worldwide. Recent product announcements include the Total Access 5006 Multi-Service Access and Aggregation Platform, the Total Access 1124P Outside Plant Broadband Loop Carrier and the NetVanta 1335 Multi-Service Access Router with WiFi and Layer 3 switching capabilities. ADTRAN is headquartered in Huntsville, Alabama, and is publicly traded. Sales for 2006 were $472.2 million.

### 6. Advanced Media Technologies (AMT)
www.amt.com
888-293-5856; 954-427-5711

**Key Products:** Digital, analog and IPTV headends; amplifiers; Motorola digital set-top converters, Amino IPTV set-top converters, cable modems, fiber nodes, FTTx and FTTH products

**Summary:** Advanced Media Technologies is a stocking distributor of high-end broadband products by manufacturers such as Motorola, Blonder Tongue, Emcore, Amino and Pacific Broadband Networks. AMT targets emerging broadband technologies including digital video, MPEG-2 and MPEG-4 encoders, point-to-point and point-to-multipoint FTTx, FTTH electronics, HDTV products, IPTV set-top converters and digital signage. AMT customers include major MSOs in the United States and Latin America as well as telcos, PCOs, and entertainment and multimedia content delivery

companies around the world. Started in 1985 under the DX Communications name, AMT has a large staff of industry veterans who can help supply solutions to most technical problems. Located in Deerfield Beach, Florida, AMT is a wholly owned subsidiary of Itochu International, the North American subsidiary of ITOCHU Corporation of Japan. With operations in more than 80 countries, in a broad range of industries, ITOCHU's revenues place it among the world's largest corporations.

### 7. AFL Telecommunications
www.afltele.com
864-433-0333; 800-235-3423

**Key Products:** FTTx electronics, fusion splicers, test equipment, fiber and copper interconnect products including fiber, connectors, and OSP hardware, and systems engineering

**Summary:** Headquartered in Nashville, Tennessee, 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 a division of Fujikura Ltd., with manufacturing, sales and administrative offices located in the US, United Kingdom, Japan, Mexico and China. (Fujikura bought out Alcoa's share of the company 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 inspection equipment and Keptel fiber and copper interconnect products. Recently introduced products include a device to identify active optical network terminals (ONTs) from the fiber distribution hub as well as a Peel & Seal Grommet System for outside plant. **Member, FTTH Council.**

*"The major trend we see happening with current broadband access technologies in the FTTH market is having the CPE [customer-premises equipment] consolidated into a one-box solution – a residential gateway connecting directly to the access network."*

**– Andy Vought, CEO, BroadLight**

# Subscriber and Network Management

Once your system is up and running, these firms provide network management, network test, and/or customer billing and services. Those marked with * offer equipment or software for subscriber or network management, but not services.  PCOs all, by definition, handle such services. BBP Top 100 companies are in bold.

| Company Name | Web Address |
| --- | --- |
| **180 Connect** | **www.180connect.net** |
| **ADC Telecommunications** | **www.adc.com** |
| **Adesta** | **www.adestagroup.com** |
| ADVA Optical Networking | www.advaoptical.com |
| Advanced Digital Broadcast | www.adbglobal.com |
| Agilent Technologies* | www.home.agilent.com |
| **Alcatel-Lucent** | **www.alcatel-lucent.com** |
| Alvarion | www.alvarion-usa.com |
| American Power Conversion (APC) | www.apcc.com |
| Anritsu* | www.anritsu.com |
| AT&T | www.att.com |
| **Blonder Tongue Laboratories*** | **www.blondertongue.com** |
| Broadstar | www.broadstar.net |
| **Broadweave Networks** | **www.broadweave.com** |
| c9 Networks* | www.c9networks.com |
| **Calix*** | **www.calix.com** |
| Capanis Networks* | www.capanis.com |
| Charter Communications | www.charter.com |
| **Cisco Systems** | **www.cisco.com** |
| Coaxial Networks | www.coaxialnetworks.com |
| Comcast | www.comcast.com |
| **Communication Technology Services (CTS)** | **www.cts1.com** |
| **Communications Data Group, Inc. (CDG)** | **www.cdg.ws** |
| Comverse | www.comverse.com |
| **Connexion Technologies** | **www.cnxntech.com** |
| Cox Communications | www.cox.com |
| Digeo | www.digeo.com |
| DirecTV Group | www.directv.com |
| Display Systems Inernational* | www.displaysystemsintl.com |
| Eagle Broadband | www.eaglebroadband.com |
| ECI | www.ecitele.com |
| **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 |
|---|---|
| IneoQuest | www.ineoquest.com |
| Irdeto | www.irdeto.com |
| **JDSU*** | **www.jdsu.com** |
| **KT Communication** | **www.ktcom.tv** |
| Martin Group | www.martin-group.com |
| MDU Communications | www.mduc.com |
| **MetaSwitch*** | **www.metaswitch.com** |
| **Motorola Broadband*** | **broadband.motorola.com** |
| MRV Communications* | www.mrv.com |
| **Nokia Siemens Networks** | **www.nokiasiemensnetworks.com** |
| Nortel Networks | www.nortelnetworks.com |
| **NorthStar Communications Group** | **www.northstar.net** |
| **On Trac** | **www.ontracinc.net** |
| Oracle/MetaSolv | www.oracle.com/metasolv |
| **PacketFront*** | **www.packetfront.com** |
| **Pannaway*** | **www.pannaway.com** |
| Phoenix Broadband* | www.phoenixbroadband.com |
| Pirelli Broadband Solutions* | www.pirelli.com |
| **Primal Solutions** | **www.primal.com** |
| **Proxim Wireless*** | **www.proxim.com** |
| RadUSA (RAD Data Communications) | www.radusa.com |
| **SaskTel International** | **www.sasktel-international.com** |
| **Shentel (Shenandoah Telecommunications)** | **www.shentel.com** |
| SMS – Satellite Management Services | www.smstv.com |
| SPATIAL*info** | www.spatialinfo.com |
| **SureWest Communications*** | **www.surewest.com** |
| **Telco Systems** | **www.telco.com** |
| Teledyne Technologies | www.teledyne.com |
| TeleGuide | www.4teleguide.com |
| **Tellabs** | **www.tellabs.com** |
| **TelStrat*** | **www.telstrat.com** |
| **Tetra Tech** | **www.tetratech.com** |
| Time Warner Cable | www.timewarnercable.com |
| TotalVision | www.total-vision.net |
| **Verizon Enhanced Communities** | **connected.verizon.com** |
| Vision Broadband/New England Broadband | www.visionbroadbandnow.com or www.newenglandbroadband.net |
| **Wave7 Optics*** | **www.wave7optics.com** |
| World Wide Packets* | www.worldwidepackets.com |
| **Zhone*** | **www.zhone.com** |
| **Zoomy Communications** | **www.zoomyco.com** |
| **ZyXEL Communications*** | **www.zyxel.com** |

# The latest in fiber technology is a beautiful thing. Beautiful in a win more customers kind of way.

EMBARQ Logistics understands that you need to be innovative. That's why we're dedicated to providing the latest in industry-leading communications technology from FTTx to IP voice and carrier Ethernet equipment. With our continually expanding product portfolio, we can help you serve more subscribers with more offerings in the fastest and most cost-effective way possible. For more than 100 years, we've been on the forefront of communications infrastructure. Let us show you how we can provide the necessary resources to succeed.

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Deployment Solutions
Equipment

**800-755-3004**
**embarqlogistics.com**

**EMBARQ**™
**Logistics**

## 8. Alcatel-Lucent
### www.alcatel-lucent.com
### 908-582-3000

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

**Summary:** Alcatel-Lucent, a worldwide telecommunications giant formed in 2006 by a merger between already huge Alcatel and Lucent, is a leader in fixed, mobile and converged broadband networking, IP technologies, applications, and services. The company provides communications solutions to telecommunications carriers, Internet service providers and enterprises for delivery of voice, data and video applications to their customers or employees. Alcatel-Lucent 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. The company has emerged as a major proponent of GPON and continues to supply equipment using that standard and, of course, xDSL. Its investment in GPON has paid off as Alcatel-Lucent is a major supplier for Verizon's massive FTTH build. With sales of $24.9 billion and 79,000 employees in 2006, Alcatel-Lucent operates in more than 130 countries. **Member, FTTH Council.**

## 9. 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 (AFOP) 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; and integrated subsystems. Based in Sunnyvale, California, the company serves communications equipment manufacturers who deliver optical networking systems to all three segments of the communications network: long-haul, metropolitan and first-mile access. AFOP was founded in 1995, has 800 employees, and maintains manufacturing and product development facilities in the US, Taiwan and China. In 2006, AFOP generated sales of almost $27 million. **Member, FTTH Council.**

## 10. Alloptic
### www.alloptic.com
### 925-245-7600; 866-255-6784

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

**Summary:** A privately held company founded in 1999 and based in Livermore, California, Alloptic is a global player in the development of Passive Optical Network and deep fiber technology. Alloptic systems are in use around the world and offer years of field-hardened operational experience. The Alloptic solution leverages industry-standard protocols and architectures with cutting-edge technology to deliver gigabits of bandwidth to residential and business users. With a patented ability to support traditional TDM over an Ethernet-based platform, Alloptic provides a full suite of emerging and legacy services to support voice, data, and video applications. Service providers worldwide rely on Alloptic to deliver communications, entertainment, building automation and security services. **Member, FTTH Council.**

## 11. Alpha Technologies
### www.alpha.com
### 360-647-2360

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

**Summary:** Founded in 1977, Alpha Technologies is a major player in power systems to the broadband communications industry worldwide. Alpha's broad line of products provides critical power conditioning and emergency backup to cable television, data and voice networks. Rapid growth in global communications and the connection between system power and overall network reliability have created a strong demand for Alpha's products across a wide array of communications applications. Alpha's customer base includes major cable television system operators, telecommunications service providers, and some of the most progressive full-service communications 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: to create powering solutions for communication, commercial, industrial and renewable energy markets. **Member, FTTH Council.**

# Free Space Optics

There are many companies in this area; these have distinguished themselves with superior technology and pricing. BBP 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 |
| fSONA | www.fsona.com |
| LaserBit | www.laserbit.net |
| LightPointe | www.lightpointe.com |
| MRV Communications | www.mrv.com |
| Terabeam | www.terabeam.com |
| Unity Wireless | www.unitywireless.com |

## 12. Amedia Networks
www.amedianetworks.com
732-440-1992

**Key Products:** Premises gateways and switched Ethernet access solutions

**Summary:** Amedia, based in Eatontown, New Jersey, designs and develops premises gateways and switched Ethernet access solutions. These secure and flexible solutions are used by network 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 VoIP services. Amedia's strategic and channel partners include Adesta Group; Danella Engineering; ARRIS; Motorola; LightRiver Technologies; LightSpeed Technologies; and Tellord. In early 2007, the company announced the development of the first GPON home gateway with built-in home networking capabilities and a personal media library. HG-G1000 combines the capabilities of a broadband home router with an optical network terminal, offering a single appliance for fiber-to-the-premises connections that meets full home networking and in-home media distribution needs. **Member, FTTH Council.**

## 13. APA Cables and Networks
www.apacn.com
763-476-6866

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

**Summary:** APA Cables and Networks (APACN) provides fiber management and connectivity systems for independent telephone, cable television and municipal networks.

The APACN product line includes fiber frames and panels, outside plant (OSP) cabinets and optical components. It offers a modular and scalable platform designed for use in central office and OSP environments. Headquartered in Plymouth, Minnesota, the company is a leader in optical performance, harsh environment performance stability, and port density. The APACN Fiber Distribution System offers panel densities from 12 to 288 ports for a variety of applications, as well as a suite of complementary products including WDMs, DWDMs and passive optical components. APACN also provides a complete line of OSP cabinets and pedestals for FTTP deployments and a line of fiber and copper assemblies for controlled and outside plant environments. APACN's customers include multiple service operators such as Wide Open West, Comcast, Time-Warner Cable and Mediacom; competitive local exchange carriers including AT&T Local Services; and independent telephone companies such as SureWest Communications, CenturyTel, and Paul Bunyan Telephone. APACN, which had revenues of $18.3 million in 2006 with 110 employees, is a wholly owned subsidiary of APA Enterprises, 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. **Member, FTTH Council.**

*"As new products and services are developed for high-bandwidth networks, we fully expect customer demand for our services to continue to grow."*
**– Steve Oldham, President and CEO, SureWest**

# Wireless

These companies design and build equipment for wireless systems, or design the systems themselves. Does not include owners such as Google or Earthlink.  BBP Top 100 firms in bold.

| Company Name | Web Address |
|---|---|
| **ADC** | **www.adc.com** |
| **Adesta** | **www.adestagroup.com** |
| **ADTRAN** | **www.adtran.com** |
| **AFL Telecommunications** | **www.afltele.com** |
| Airspan | www.airspan.com |
| **Alcatel-Lucent** | **www.alcatel-lucent.com** |
| Alvarion | www.alvarion-usa.com |
| Aperto Networks | www.apertonetworks.com |
| Axcera | www.axcera.com |
| **Canobeam** | **www.canobeam.com** |
| **Charles Industries** | **www.charlesindustries.com** |
| **Cisco Systems/Scientific Atlanta/Linksys** | **www.scientificatlanta.com, www.cisco.com** |
| **ClearMesh** | **www.clearmesh.com** |
| **CommScope** | **www.commscope.com** |
| **Corning Cable Systems** | **www.corningcablesystems.com** |
| **CTS (Communication Technology Services)** | **www.cts1.com** |
| D-Link Corporation/D-Link Systems | www.d-link.com |
| ECI | www.ecitele.com |
| **Emerson Network Power** | **www.emersonnetworkpower.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** |
| **JDSU** | **www.jdsu.com** |
| **KiS Communications** | **www.kis-comm.com** |
| **MetaSwitch** | **www.metaswitch.com** |
| **Motorola Canopy** | **motorola.canopywireless.com** |
| MRV Communications | www.mrv.com |
| **Nokia Siemens Networks** | **www.nokiasiemensnetworks.com** |
| Nortel Networks | www.nortelnetworks.com |
| **Ortronics/Legrand** | **www.ortronics.com** |

| PMC-Sierra | www.pmc-sierra.com |
|---|---|
| Primal Solutions | www.primal.com |
| Proxim Wireless | www.proxim.com |
| RadUSA (RAD Data Communications) | www.radusa.com |
| Redcom Laboratories | www.redcom.com |
| SaskTel International | www.sasktel-international.com |
| Samsung | www.samsung.com/us/ |
| SMC Networks | www.smc.com |
| Soma Networks | www.somanetworks.com |
| Tellabs | www.tellabs.com |
| Ygnition | www.ygnition.com |
| ZyXEL Communications | www.zyxel.com |

## 14. Applied Optoelectronics
www.ao-inc.com
281-295-1800

**Key Products:** Diode lasers, photodiodes, transceivers, subassemblies and related modules and equipment for CATV, telecommunications, FTTx, and wireless applications

**Summary:** Applied Optoelectronics, Inc. (AOI) was founded in February 1997 and provides leading-edge semiconductor component solutions. Its work was named as the Sensors and Instrumentation Technology of the Year 2000 by NASA Tech Briefs magazine. That year the company moved into its 24,000-square-foot manufacturing and office plant in Sugar Land, Texas, which received ISO certification in 2002. In February 2006, AOI 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 the latter half of 2006, it also announced a transceiver product line. AOI maintains a sales office in Attleboro, Massachusetts, additional manufacturing in Asia, and an R&D facility in Sunnyvale, California, where it works on III-V material growth via molecular beam epitaxy and wafer processing technologies, areas that are problematic for laser developers. The management team includes researchers with more than sixty patents in electrical engineering, specializing in laser technology. The company has 700 employees.
**Member, FTTH Council.**

## 15. ARNCO/Dura-Line
www.arncocorp.com
800-321-7914
www.duraline.com
800-847-7661

**Key Products:** Extruded high-density polyethylene (HDPE) duct, pipe and conduit products for the telecom, power utility,

*"We are seeing a transition in the MDU/ hospitality marketplace in terms of requirements from high-speed Internet access to smart building applications … including alarms, security, surveillance, digital signage, lighting controls, energy management, and multimedia services including IPTV, video on demand and networked personal video recording."*
**– Ron Pickett, CEO, Telkonet**

electrical and cable markets

**Summary:** This April, Audax Group, a private equity company, announced its acquisition of Dura-Line and ARNCO. The two companies, which are being merged, will operate independently as ARNCO/Dura-Line. Dura-Line supplies fiber optic conduit solutions to companies in the telecom, cable TV, power and other markets. The company's customers include AT&T, Cablevision, Qwest, Telmex, Time Warner Cable and Verizon. Based in Knoxville, Tennessee, Dura-Line operates manufacturing plants in the US, India, Mexico and the Czech Republic, and sells its products in more than 30 countries. In 1981 Dura-Line became the first manufacturer to develop a duct for the installation and protection of fiber optic cables. In 2004, Dura-Line introduced a complete line of fiber optic microduct products. **Member, FTTH Council.**

ARNCO, also a leading supplier of conduit, has four facilities including its main plant in Elyria, Ohio, and for cable-related products covers product development, engineering, testing, manufacturing and administration. Satellite manufacturing and warehousing operations are located in Utah, South Carolina, and Mexico. The company provides infrastructure

# Test Equipment

These companies make and sell test equipment for broadband networks. Does not include distributors who resell test equipment. BBP Top 100 in bold.

| Company Name | Web Address |
|---|---|
| **3M Company/Communication Markets Division** | **www.3M.com/telecom** |
| **ADC** | **www.adc.com** |
| **AFL Telecommunications** | **www.afltelecommunications.com** |
| Agilent | www.agilent.com |
| **Alcatel-Lucent** | **www.alcatel-lucent.com** |
| Applied Instruments | www.appliedin.com |
| **Blonder Tongue Laboratories** | **www.blondertongue.com** |
| Brix Networks | www.brixnet.com |
| **Calix** | **www.calix.com** |
| **Charles Industries** | **www.charlesindustries.com** |
| **Cisco Systems/Scientific Atlanta/Linksys** | **www.scientificatlanta.com, www.cisco.com** |
| **Corning Cable Systems** | **www.corningcablesystems.com** |
| **Emerson Network Power** | **www.emersonnetworkpower.com** |
| **Ericsson** | **www.ericsson.com** |
| EXFO | www.exfo.com |
| Fluke | www.fluke.com |
| Ineoquest | www.ineoquest.com |
| Ixia | www.ixiacom.com |
| **JDSU** | **www.jdsu.com** |
| Multidyne Video & Fiber Optic Systems | www.multidyne.com |
| RADCOM | www.radcom.com |
| **REDCOM Laboratories** | **www.redcom.com** |
| **SENKO Advanced Components** | **www.senko.com** |
| Spirent Communications | www.spirent.com |
| **Sumitomo Electric Lightwave** | **www.sumitomoelectric.com** |
| Sunrise Telecommunications | www.sunrisetelecom.com |
| Symmetricom | www.symmttm.com |
| Telecast Fiber Systems | www.telecast-fiber.com |
| **Tellabs** | **www.tellabs.com** |
| **Westek Electronics** | **www.westek.com** |
| Westover Scientific | www.westoverscientific.com |

the most **powerful** technology amenity available...

all in a **tiny** strand of glass.

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 nonmetallic conduit. Recent products include Signal-Guard, an HDPE resin locatable conduit.

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### 16. Astec Underground
www.astecunderground.com
865-408-2100; 800-527-6020

**Key Products:** Trenchers, vibratory plows and directional drilling equipment

**Summary:** Astec Underground, a subsidiary of Astec Industries, 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. The company manufactures and markets Astec utility trenchers and horizontal directional drills as well as Trencor heavy-duty mechanical chain trenchers and specialty rock excavation machines. (The Astec line of trenchers and horizontal directional drills was acquired from Case in 2002, while the Trencor brand was purchased in 1988.) Customers include small contractors operating a single trencher; large utility providers and contractors with fleets of underground construction equipment; horizontal directional drilling specialists; and contractors building giant cross-country pipelines. Headquartered in Loudon, Tennessee, Astec had revenues of $58 million in 2006 and has nearly 300 employees. It operates a 330,000-square-foot facility that includes corporate offices, a new research and development center, training facilities, a manufacturing plant and a custom paint facility. **Member, FTTH Council.**

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### 17. Atlantic Engineering Group
www.atlantic-engineering.com
706-654-2298

**Key Products:** Fiber optic design and engineering (central office and outside plant), construction (headend, aerial and underground), technical services (splicing, testing and turn up) and construction management.

**Summary:** Atlantic Engineering Group (AEG), based in Braselton, Georgia, and founded in 1996, provides design, engineering, construction, technical services and construction management for telecommunications providers, primarily municipalities, municipal utilities and independent telcos, including Rural Development–funded projects. AEG is not an integrator; it has significant in-house resources. It has completed or is in the process of designing and/or building 16 FTTP deployments using five different electronics solutions. AEG citywide (or city- and countywide) FTTP projects include Bristol Tennessee Essential Services; Bristol Virginia Utilities;

Dalton Utilities, Georgia; Jackson Energy Authority, Tennessee; the Borough of Kutztown, Pennsylvania; Crawfordsville Electric Power and Light, Indiana; Morristown Utility Systems, Tennessee; North Kansas City, Missouri; Provo, Utah; Pulaski, Tennessee; Quincy, Florida; and Sallisaw Municipal Authority, Oklahoma. Two new FTTP projects for Atlantic Engineering Group are a design/build for Clarksville, Tennessee and design and contracts administration for Lafayette, Louisiana. **Member, FTTH Council.**

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### 18. Blonder Tongue Laboratories
www.blondertongue.com
732-679-4000; 800-523-6049

**Key Products:** Headend equipment for analog video, digital video, high-definition video, IP video, high-speed data, telephony, microwave, fiber optic distribution, coaxial distribution, addressable/interdicted subscriber provisioning, test equipment, systems design engineering, and technical training

**Summary:** Blonder Tongue Laboratories designs, manufactures and sells products for the acquisition, processing, encoding and distribution of analog and digital video, voice and data signals transmitted via the coaxial cable and fiber optic networks of today and the IP-based networks of the future. Blonder Tongue's customers include franchised and private cable operators, lodging/hospitality markets, and institutional markets such as hospitals, prisons and schools. The company, founded in 1950 and headquartered in Old Bridge, New Jersey, has 250 employees and in 2006 had sales of over $35 million. Blonder Tongue's product lines are evolving to focus on the needs created by IPTV, digital video and HDTV signals and the integration of these signals into the optical networks of the future. The Technical Services Group of Blonder Tongue provides system design, installation, technical training, on-site system engineering and turnkey services around the globe for a wide variety of clients.

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### 19. BroadLight
www.broadlight.com
650-937-1130

**Key Products:** Standards-based communication semiconductors and software solutions

**Summary:** BroadLight provides GPON silicon components and software for central office and customer premises equipment. The company's BL3000 series of Optical Line Terminal GPON MAC and controlling devices and BL2000 System on Chip (SoC) series of Optical Network Terminal components are found in leading equipment manufacturers' products worldwide. BroadLight's technology also powers some of the largest BPON service providers in the world. The company recently introduced the BL3458 Quad OLT GPON Controller,

which provides the industry's highest-density and lowest-power solution while significantly driving down central office equipment costs. BroadLight also recently announced the BL2348 Residential Gateway (RG) SoC solution for fiber-to-the home applications. This solution provides the performance, integration and functions needed for the new breed of cost-effective RG customer premises equipment that will connect the high-speed digital home to fiber-to-the-home services.

## 20. Broadweave Networks
### www.broadweave.com
### 801-407-6000

**Key Products:** FTTH and FTTP networks

**Summary:** Headquartered in South Jordan, Utah, Broadweave deploys fiber-to-the-premises networks in greenfield communities. Broadweave Networks' high-capacity fiber optic networks 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.

*"The driving force today in fiber optics is the need for bandwidth and reliable communication. As long this need remains, the need for training in fiber optic systems will exist."*
**– Larry Johnson, President, The Light Brigade**

## 21. 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. The latest release of its C7 multiservice access platform enhances the ability of service providers to deliver Ethernet services. The C7, which can support up to 20 interfaces and 5,120 attached subscribers, integrates all functions required to transport and deliver voice, data, and video services

over both optical and copper networks. Calix also recently introduced a new GPON interface for the C7 that provides full 2.4 Gbps to each of four optical line terminal (OLT) ports. The Calix F-Series, which provides a complete GPON FTTP system, serves more than 300 FTTP communities and is the most widely installed FTTP system in North America. The E-Series allows service providers to deliver 30 to 40 Mbps of services over existing copper plant. Calix also offers management tools that can be accessed via a standard Web browser. Outdoor cabinets, ranging in size from 120 to 2,880 lines, facilitate conversion of narrowband subscribers to fiber or copper service. Founded in 1999, Calix has more than 300 employees and is headquartered in Petaluma, California, with offices in Boston and Minneapolis.

*"The exciting part -- the wide deployment of video-ready broadband services for customers -- is just beginning to happen. The combination of high-bandwidth video up- and download with network intelligence and IP applications that can bridge the gaps between today's separate wireless, wireline, broadband and cable/satellite networks is going to change the way we live, work and play."*
**-- Tim Krause, Chief Marketing Officer for North America, Alcatel-Lucent**

## 22. Canobeam
### (Free Space Optics division of Canon)
### www.canobeam.com
### 201-807-3300; 800-321-4388

**Key Products:** Optical transceivers

**Summary:** Canon USA pioneered the technology for Free Space Optics line of optical transceivers, which it now markets to businesses and other users that want to transmit data over the air on beams of laser light. The models in the Canobeam series deliver data speeds from 25 Mbps to 1.25 Gbps and cover distances 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 other factors. Like optical fiber, Canobeam systems are protocol-independent 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, New Jersey. The

# Content Aggregators and Distributors

These are the companies whose products drive demand for broadband. Network owners can contract with them to acquire content for broadcast video, video on demand, Web-based video, music, network-based games, and other entertainment services. See the December 2006 issue for providers of specific content; several are listed here because they also do aggregation. BBP Top 100 companies are in bold.

| Company Name | Web Address |
|---|---|
| 4Com | www.4com.com |
| Accedo Broadband | www.accedobroadband.com |
| Akimbo | www.akimbo.com |
| Broadband Enterprises | www.broadbandenterprises.com |
| **HDNet** | **www.hd.net** |
| JumpTV | www.jumptv.com |
| **KT Communication** | **www.ktcom.tv** |
| Movielink | www.movielink.com |
| MobiTV | mobitv.com |
| **Optical Entertainment Network** | **www.fision.net** |
| Pandora | www.pandora.com |
| RealNetworks | www.realnetworks.com |
| Revver | www.revver.com |
| SES Americom | www.ses-americom.com |
| SIVOO | www.sivoo.com |
| Starz Entertainment Group | www.starz.com |
| Synacor | www.synacor.com |
| TVN Entertainment | www.tvn.com |
| TVTonic | www.tvtonic.com |
| Total Video | www.totalvid.com |
| Yahoo! | www.yahoo.com |
| YouTube | www.youtube.com |

company is listed as one of Fortune's Most Admired Companies in America and is rated number 35 on the Business Week/Interbrand list of "Top 100 Brands" for 2006. Its parent company, Canon Inc., is a top patent holder, ranking second overall in the US and having global revenues of $34.6 billion last year.

## 23. Carlon
**www.carlon.com**
**216-464-3400**

**Key Products:** Fiber optic, copper and coaxial cable protection

**Summary:** Carlon, the largest division of Lamson & Sessions, a thermoplastic processing company based in Cleveland Ohio, supplies fiber optic, copper and coaxial cable protection. Customers include regional Bell operating companies, cable televi-

sion companies, state departments of transportation and the electrical wholesale distributor market. Some of the products manufactured for outside plant applications include direct-bury multiple-celled conduit for low voltage use, trenchless PVC conduit for telecommunication and utility installations, weatherproof outlet covers, thermoplastic enclosures, flexible underground raceways, conduit bodies, utility cable protection and organizing devices, fittings, and rigid conduit. In the customer premises area, products include floor boxes, flexible conduit and wiring device boxes.

## 24. C-COR
**www.c-cor.com**
**814-238-2461; 800-233-2267**

**Key Products:** Equipment and software that expand network capacity, assure service quality, and deliver on-demand and advertising services

# Central Office Equipment

These firms supply central office electronics for broadband networks such as line cards, broadband loop carriers and multiservice access platforms. BBP Top 100 firms in bold.

| Company Name | Web Address |
| --- | --- |
| **ADTRAN** | **www.adtran.com** |
| **Alcatel-Lucent** | **www.alcatel-lucent.com** |
| Allied Telesis | www.alliedtelesis.com |
| **Alloptic** | **www.alloptic.com** |
| Alphion | www.alphion.com |
| Aurora Networks | www.aurora.com |
| **Calix** | **www.calix.com** |
| ECI | www.ecitele.com |
| **Ericsson** | **www.ericsson.com** |
| **Hitachi** | **www.hitel.com** |
| **Motorola** | **broadband.motorola.com** |
| **Nokia Siemens Networks** | **www.nokiasiemensnetworks.com** |
| **Occam** | **www.occamnetworks.com** |
| **PacketFront** | **www.packetfront.com** |
| **Pannaway** | **www.pannaway.com** |
| **Tellabs** | **www.tellabs.com** |
| **TelStrat** | **www.telstrat.com** |
| **Terawave** | **www.terawave.com** |
| UTStarcom | www.utstar.com |
| **Wave7 Optics** | **www.wave7optics.com** |
| **Zhone Technologies** | **www.zhone.com** |
| ZTE USA | www.zteusa.com |

**Summary:** C-COR's modular broadband capacity solutions, operational service support and universal platform for on-demand services enable service providers around the world to build and maintain sustainable, competitive networks. Founded in 1953, the company has 1,700 employees and is organized into three divisions: Broadband Access, OSS, and On Demand. C-COR's Outside Plant and Installation Services businesses were sold to Source Broadband Services, LLC, in June. C-COR is based in State College, Pennsylvania, and maintains regional offices for Europe in Germany and Spain, and for Asia Pacific in Australia and China. The company also does business in Africa, the Middle East and South America. In the 1960s, C-Cor was the first to introduce integrated circuits on telephone poles; in the 1990s, it pioneered the first optical 1 Gbps amplifier; and in 2006, it served over 1 million 1GHz segmentable nodes in the first year following the product launch. C-COR's customers include Bright House, Cablevision, Charter, Comcast, Cox, Mediacom, Insight, Time Warner Cable, UPC, ONO and Virgin Media. In 2007, the company introduced two key products: The CHP eQAM, the industry's first 1GHz EdgeQAM device, lets service providers

deliver on-demand and switched digital video services, using a modular design that offers high density and low power consumption; the OptiMax 2700 Optical Upgrade, which converts amplifiers to optical nodes, lets service providers leverage their existing infrastructure to gain more capacity. C-COR had revenues of $262.5 million for fiscal 2006.

## 25. Charles Industries
### www.charlesindustries.com
### 847-806-6300

**Key Products:** Outside plant fiber optic distribution pedestals and enclosures, wireless backhaul multiplexers and terminals, extended-reach DSL systems

**Summary:** Charles Industries designs and manufactures buried distribution pedestals for fiber optic applications. The company introduced nonmetallic fiber pedestals to the industry in 2001, and has continued to provide new solutions for virtually all fiber deployment architectures. Charles Fiber Distribu-

tion Point (CFDP) pedestals offer GR-771–compliant closed architecture protection of both ribbon fiber and loose buffer tube fiber. CFDP pedestals can accommodate loop-through and stub-out distribution cable, branch and drop splices, and fusion, mechanical or preconnectorized splicing. BDO open-architecture fiber pedestals offer a lower-cost alternative for cost-conscious deployments. Charles Industries, which is head-quartered in Rolling Hills, Illinois, has about 500 employees and manufactures all of its products in five US facilities.
**Member, FTTH Council.**

## 26. Cisco Systems/Scientific Atlanta
   **www.cisco.com, www.scientificatlanta.com**
   **770-236-5000**

**Key Products:** Digital set-top boxes and accessories, cable modems, headend equipment, addressable network manage-ment systems and wireless (Linksys division)

**Summary:** Scientific Atlanta, which became a Cisco company in February 2006, is a leading supplier of set-top boxes and cable modems, transmission networks for home broadband access, and digital interactive subscriber systems for video, high-speed Internet and VoIP networks. With regard to fiber, the company is focused on the convergence of the PC and the TV and is extending 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. Last month, the company announced new compact, high-density Prisma II optics products to improve the performance of existing fiber as well as a new DOCSIS Passive Optical Network (D-PON) architecture that will help cable operators upgrade to FTTH technology. Scientific Atlanta's annual sales average $2 billion, with nearly 10,000 employees worldwide. Its acquisi-tion increased Cisco worldwide employment to over 50,000. Headquartered in Lawrenceville, Georgia, the company also maintains North American regional offices in Pennsylvania, Colorado, Ontario, and Mexico City. Overseas, Scientific Atlanta has offices in Belgium, Argentina, Australia, Brazil, China, India, Japan, Korea, and U.A.E.
**Member, FTTH Council.**

## 27. ClearMesh
   **www.clearmesh.com**
   **626-535-2800**

**Key Products:** Wireless optical mesh solutions for metro grids

**Summary:** Founded in 1996 and headquartered in Simi Val-ley, California, ClearMesh Networks is a division of Idealab.

The company is a communications equipment vendor offering wireless optical mesh solutions to service providers and small-to middle-sized businesses. ClearMesh offers 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 customer, or use the grid as a high-capacity distribu-tion core for municipal WiFi networks. The ClearMesh Metro Grid delivers high-margin business communications distri-bution architecture for dense metropolitan markets, license-free. ClearMesh Networks enables service providers to close the gap between expensive fiber buildouts and legacy copper infrastructure. The ClearMesh technology combines three well-established technologies: wireless deployment, optical transmission, and integrated mesh networking. Recently the company launched its next-generation wireless mesh solution, the ClearMesh Sentry Mesh, suited to colleges, shopping malls and industrial parks that seek a wireless alternative to video surveillance. Using Sentry Mesh, organizations with sprawling facilities can roll out wireless networks providing 100 Mbps of full-duplex bandwidth per node to support high-resolution video surveillance and IT applications.

*"We continue to see strong demand for solutions capable of providing 'true' broadband services. There appears to be no waning of consumer demand for faster and faster access, especially as complexity and richness of IP-based applications continues to grow. YouTube, streaming or time-shifted news, and entertainment video are the types of high-bandwidth services consumers are looking for on an on-demand basis."*

**– Ric Johnsen, CEO, Alloptic**

## 28. CoBank
   **www.cobank.com**
   **800-542-8072**

**Key Products:** Infrastructure loan products and financial services

**Summary:** A cooperative bank in business since 1916, Co-Bank specializes in financing agribusinesses, rural communica-tions and energy systems and Farm Credit associations. In the communications arena, CoBank provides financing to expand fiber optic networks, build new transmission lines, make acquisitions, and add services like wireless technology, satellite

# Customer Premises Equipment

These firms supply inside plant equipment (not the fiber itself) for broadband, but are not themselves service providers. BBP Top 100 companies in bold.

| Company Name | Web Address |
|---|---|
| **AFL Telecommunications** | **www.afltelecommunications.com** |
| **Alcatel-Lucent** | **www.alcatel-lucent.com** |
| **Alloptic** | **www.alloptic.com** |
| **Alpha Technologies** | **www.alpha.com** |
| Alphion | www.alphion.com |
| **Amedia Networks** | **www.amedianetworks.com** |
| American Power Conversion (APC) | www.apcc.com |
| Amino | www.aminocom.com |
| Belkin | www.belkin.com |
| **Blonder Tongue Laboratories** | **www.blondertongue.com** |
| **Calix** | **www.calix.com** |
| **Cisco Systems/Scientific Atlanta/Linksys** | **www.scientificatlanta.com, www.cisco.com** |
| Coaxsys | www.coaxsys.com |
| **Communication Technology Services (CTS)** | **www.cts1.com** |
| Conexant | www.conexant.com |
| Eagle Broadband | www.eaglebroadband.com |
| ECI | www.ecitele.com |
| **Emtelle** | **www.emtelle.com** |
| **Ericsson** | **www.ericsson.com** |
| **Foxcom** | **www.foxcom.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 |
| **Nokia Siemens Networks** | **www.nokiasiemensnetworks.com** |
| Nortel Networks | www.nortelnetworks.com |
| Omnitron Systems Technology | www.omnitron-systems.com |
| **PacketFront** | **www.packetfront.com** |
| **Pannaway** | **www.pannaway.com** |
| Ruckus Wireless | www.ruckuswireless.com |
| **Telco Systems** | **www.telco.com** |
| **Telkonet** | **www.telkonet.com** |
| **Tellabs** | **www.tellabs.com** |
| **TelStrat** | **www.telstrat.com** |
| **Tenvera** | **www.tenvera.com** |
| **Terawave** | **www.terawave.com** |
| TXP | www.txpcorporation.com |

| Tyco/AMP | www.ampnetconnect.com |
|---|---|
| UTStarcom | www.utstar.com |
| **Wave7 Optics** | **www.wave7optics.com** |
| **ZyXEL Communications** | **www.zyxel.com** |

TV and telemarketing services. 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 offers cash investment services, letters of credit, leasing services and interest rate risk management services. The company has approximately 600 employees serving 2,300 US customer-owners nationwide from its national office located in Denver, Colorado, and banking centers located across the United States. CoBank also has representative offices in Mexico City and Singapore. CoBank's net income for 2006 was $335 million.

## 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, CommScope had revenues in 2006 of $1.6 billion and is a world leader in the design and manufacture of first-mile cable and connectivity solutions for communication networks. It is also the world's largest manufacturer of coaxial cable for hybrid fiber-coax (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 additional facilities in Alabama, Nevada, Texas, Brazil, Belgium, Australia, Ireland, and – as of 2005 – in Asia. The company has more than 4,500 employees worldwide. **Founding member, FTTH Council.**

## 30. Communication Technology Services (CTS)
### www.cts1.com
### 800-834-5838

**Key Products:** In-home and in-business structured wiring, wireless LAN, IDAS and ODAS, public safety solutions, kiosk and digital signage solutions, 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 evolved into a national organization providing a broad array of communications infrastructure services including structured cabling, other inside wiring, public safety solutions, wireless local area networks and VoIP, including IP PBX. The company is headquartered in Marlborough, Massachusetts. CTS has more than 600 professional field technicians and project managers around the US, all full-time CTS employees.

## 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 divesture 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 now serves more than 200 telecommunications companies nationwide, including 21 of the nation's largest independent telephone companies. CDG has about 135 employees.

## 32. Connexion Technologies
### www.cnxntech.com
### 919-535-7329

**Key Products:** Fiber optic networks (invests, designs, builds, and operates); ecosystem management of converged technology services; telecommunication infrastructure investments in properties and developments; service provider management program

**Summary:** Based in Cary, North Carolina, Connexion Technologies uses its own capital to fund and deploy turnkey FTTH solutions for single-family, MDU and resort properties. Connexion Technologies leverages its technology investment to provide additional Revenue Generating Unit (RGU) opportunities for service providers. Service providers arrange

with Connexion Technologies to deliver Internet, television, VOD, phone, security and other applications over Connexion's fiber networks, while Connexion takes responsibility for managing the networks and billing. This arrangement provides control and flexibility, as well as permitting service-level guarantees. Connexion's staff has almost quadrupled in the past few years, and the company currently operates networks in more than 170 properties and communities across the country (and soon internationally). Connexion has more than 150,000 committed units with plans for more than 250,000 by year-end, making it the nation's second largest provider of FTTH behind Verizon. **Member, FTTH Council.**

## 33. Corning/Corning Cable Systems
www.corning.com/www.corningcablesystems.com
828-901-5000

**Key Products:** Optical fiber, optical fiber 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 technology. Corning engineers developed the first fiber optic cable for communications in 1970, and its telecommunications business segment – consisting of Corning Cable Systems, Corning Optical Fiber and Corning Gilbert – continues to lead the industry with its optical innovations (most recently, a highly bend-insensitive fiber that co-exists easily with existing connector technology). Corning Cable Systems develops and manufactures fiber optic cable, hardware and equipment including terminals, cabinets, test and splice equipment, cable assemblies and fiber optic connectors. The company also provides network services including design, bill of material generation, installation and testing. Its Evolant Solutions for Evolving Networks delivers tip-to-tip product and service offerings for access, CATV, data center, metropolitan, long-haul and wireless applications and its preconnectorized solutions have revolutionized the way FTTx networks are deployed. Through its Evolant Solutions, Corning Cable Systems provides a broad range of optical cable, hardware and equipment designed to make FTTx deployments faster, easier, more reliable and less costly. The Corning Connected Community Program assists homebuilders and community developers implement fiber optic infrastructures into their building plans, while the Corning Total Access Program provides design, engineering, furnishing and installation companies with the tools necessary to ensure successful fiber-to-the-home and wireless deployments. Corning Optical Fiber produces optical fiber products designed to perform in a variety of applications, and it leads the telecommunications industry in the development of new fiber designs. Corning Optical Fiber has deployed more fiber than any other fiber manufacturer, and its high-performance optical fibers form the foundation of optical networks worldwide. Corning Gilbert manufactures a comprehensive

line of broadband coaxial interconnect systems and microwave connectors. Corning is a founding member of the of the newly formed DAS Forum, which encourages fiber-fed distributed antenna systems. **Founding member, 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 trenchers, 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 Services (DWFS) offers a variety of financing and lease options. Headquartered in Perry, Oklahoma, The Charles Machine Works has more than 1,300 employees. **Member, FTTH Council.**

*"This growth in demand [for Alpha's backup power systems] reflects the success our customers are seeing with the introduction of new broadband services. With all these services, the need for hardened powering networks has never been so critical."*

**– Paul Humphreys, Vice President of Marketing, Alpha Technologies**

## 35. Draka Comteq
www.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 a global wire and cable company that provides innovative cabling solutions for a wide range of applications. Draka Comteq is jointly owned by Draka NV and Alcatel-Lucent and is one of the world's largest optical fiber producers, with more than 20 million miles of fiber deployed in North America alone. Draka Comteq's newest single-mode fiber, BendBright, is optimized for enhanced low macrobend-

# Fiber and Fiber Cables

These firms supply optical fiber for fiber-to-the-home deployments. BBP Top 100 firms in bold.

| Company Name | Web Address |
|---|---|
| **3M Company/Communication Markets Division** | **www.3M.com/telecom** |
| **AFL Telecommunications** | **www.afltele.com** |
| **Alcatel-Lucent** | **www.alcatel-lucent.com** |
| Belden | www.belden.com |
| **CommScope** | **www.commscope.com** |
| **Corning Optical Fibers, Corning Cable Systems** | **www.corning.com, www.corningcablesystems.com** |
| **Draka Comteq** | **www.draka.com** |
| **Emtelle** | **www.emtelle.com** |
| **Ericsson** | **www.ericsson.com** |
| Fiberoptic Systems | www.fiberopticsystems.com |
| General Cable | www.generalcable.com |
| Nexans | www.nexans.com, www.nexansinterface.com |
| **Optical Cable Corporation** | **www.occfiber.com** |
| **Optical Fiber Solutions (OFS)** | **www.ofsoptics.com** |
| Prysmian | www.prysmian.com |
| **Sumitomo Electric Lightwave** | **www.sumitomoelectric.com** |
| Timbercon | www.timbercon.com |

ing sensitivity. Its enhanced macrobending loss characteristics guarantee that the 1625nm window (L-band) will be available for future bandwidth expansions. In 2006 Draka had net sales of $3.39 billion and 9,145 employees. **Member, FTTH Council.**

## 36. EMBARQ Logistics
**www.embarqlogistics.com**
**913-791-7000; 800-755-3004**

**Key Products:** Telecommunications equipment; logistics, engineering, integration and deployment services

**Summary:** EMBARQ Logistics, headquartered near Kansas City, Kansas, is a supply chain integrator serving network service providers, manufacturers and resellers throughout North America. Formerly known as Sprint North Supply, the company offers expertise in logistics, engineering, integration and deployment, as well as telecommunications equipment. EMBARQ stocks more than 30,000 products from more than 1,500 manufacturers, and maintains distribution centers nationwide. The FTTH equipment carried by EMBARQ includes fiber optic cabling, central office equipment, fiber distribution systems, network installation solutions and customer

premises equipment. Founded in 1905 as Union Electric in Abilene, Kansas, the company has about 1,000 employees and revenues of $530 million in 2006. It is a subsidiary of EMBARQ, a Fortune 500 company with $6.4 billion in annual revenues in 2006. EMBARQ deployed the United States' first all-digital fiber optic network as well as an award-winning Tier 1 Internet backbone. **Member, FTTH Council.**

## 37. Emerson Network Power
**www.emersonnetworkpower.com**
**440-246-6999; 800-800-1280**

**Key Products:** AC and DC power systems, precision cooling, outside plant solutions, racks and integrated cabinets, embedded power and computing, connectivity

**Summary:** Emerson Network Power, based in Columbus, Ohio, is the global leader in enabling Business-Critical Continuity – the assurance that critical technology investments will not fail due to power loss and disrupt a company's business. Emerson Network Power, a business of Emerson, serves telecommunications networks, data centers, health care and industrial facilities worldwide. Its power solutions include inbound power, connectivity, power supplies, power systems

and precision cooling. In 2006, Emerson extended its presence in the telecommunications market by introducing NetSpan FTTH Solutions, a line of outside plant equipment that supports the transition from copper to fiber networks. Backed by the largest global services organization in the industry, Emerson Network Power offers network reliability programs encompassing engineering, installation, project management and support services. 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 has an estimated 25,000 employees and fiscal 2006 sales of $4.4 billion. This year, the company reached an agreement to acquire Stratos International, a designer and manufacturer of optoelectronic, fiber optic, RF and microwave components and subsystems. **Member, FTTH Council and Green Grid.**

*"This is an exciting time and the future looks bright for fiber deployments in America. The debate about this solution recently changed from 'if' fiber will become the norm to 'when' it will be common. AEG believes the demand for bandwidth will only continue to grow explosively and that fiber optic solutions are the only answer for meeting that demand."*

**– James H. Salter, CEO, Atlantic Engineering Group**

## 38. Emtelle
www.emtelle.com
602-953-6657

**Key Products:** Ducted network and blown fiber technology

**Summary:** Emtelle, originally established in 1980 as a vendor of ducted networks for the telecommunications industry, is now one of the world's leading providers of 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 in Phoenix, Arizona, 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 was chosen to connect 7,600 homes in Nuenen, The Netherlands, and to establish a large fiber optic Metropolitan Area Network in the Athens region for the 2004 Olympic Games. The company has 180 employees worldwide, and had revenues of $73

million in 2006. It recently announced plans for a merger with Dantex, the leading supplier of HDPE multiduct systems in Scandinavia. **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. Earlier this year, the company acquired Albis Optoelectronics AG, a leading supplier of photodiodes for the datacom and FTTH markets. **Member, FTTH Council.**

*"Communications service providers everywhere are discovering that the delivery of multiple information, communication, and entertainment services over very high-speed, packet-based fiber and copper access networks not only increases average revenue per user and decreases customer churn, it also dramatically reduces ongoing operating expenses. In order to realize these benefits, providers are ratcheting up broadband speeds – in effect redefining broadband – and using IP as an underlying delivery protocol."*

**– Carl Russo, President and CEO, Calix**

## 40. Ericsson
www.ericsson.com/us
972-583-0000

**Key Products:** VDSL2 and FTTH solutions, Ribbonet broadband installation solution for FTTx applications, cables and interconnect products, microwave networks, network management tools, stations and broadband switches, IPTV middleware

**Summary:** Ericsson, founded in 1876 and based in Stockholm, Sweden (US headquarters are in Reston, Virginia), is a world leader in nearly all aspects of telecommunications. Having expanded its fiber portfolio by acquiring most of Marconi in 2005 and Entrisphere in 2007, it supplies broadband multiservice 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 networks, including distributed antenna systems. Ericsson announced last month that its GPON solution will be deployed by CYTA, the leading operator in Cyprus. The company's recent acquisitions of Redback and TANDBERG Television give it strong positions in the edge router and IPTV middleware markets; it has also been successful in markets for VoIP, soft switching and public Ethernet access. Its joint venture for mobile communications, Sony Ericsson, has had five successful years. Ericsson's services include consulting, systems integration, managed services, network deployment and optimization, education and technical support services. Ericsson has 64,000 employees in 140 countries. Revenue worldwide last year was about $27 billion. **Member, FTTH Council.**

## 41. ETI Software Solutions
**www.etisoftware.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. (ETI) was founded in 1992 to provide software solutions for the converging broadband technologies of television, telephony and data communications; today it has more than 100 customers, among them the nation's largest FTTP service providers. The company has three key products for the control and management of broadband technologies: Triad and énConcert are billing and operational support systems, and VideoDirect is a digital and analog ad insertion solution. ETI's Triad and énConcert systems automate provisioning of FTTH networks with out-of-the-box, plug-and-play interfaces that eliminate multiple data entry points associated with the activation of services for telecommunications technology management systems. VideoDirect is a comprehensive end-to-end ad insertion solution that enables video providers to sell, manage and bill local advertisements or content. With VideoDirect, local activities such as government meetings and sporting events can be recorded and played back on public access channels. ETI is a privately held company with 20 employees who own and control 100 percent of the company stock. **Member, FTTH Council.**

## 42. Foxcom
**www.foxcom.com**
**609-514-1800**

**Key Products:** Broadband fiber optic MDU distribution systems for video and data; satellite downlink signal transport over fiber

**Summary:** Foxcom, a division of OnePath Networks, is a provider of fiber optics solutions to the MDU first-mile access market and the professional satellite earth station and video distribution markets. Founded in 1993, Foxcom has two product lines: point-to-multipoint distribution platforms for the MDU and first-mile access market and point-to-point transport of satellite signals in Earth stations, broadcast facilities, cable TV headends and other satellite gateway applications. Foxcom's global sales and marketing office in Princeton, New Jersey, supports customers in North and South America; the research and manufacturing center, in Israel, supports sales into Europe, Asia and Africa. Foxcom revenues for 2006 were $7.2 million, representing an annual growth rate of over 20 percent. The company has 35 employees.

## 43. Gibson Technical Services
**www.gibsontech.com**
**770-345-1670**

**Key Products:** Engineering, technical, and construction services to the cable, fiber optic, and wireless industries

**Summary:** Gibson Technical Services (GTS) is a full-service contractor providing engineering, technical and construction services and equipment including broadband engineering; construction and certification; wireless LANs and WANs; telecom network infrastructure design; structured cabling; wireless medical telemetry; equipment provisioning and staging; and rapid equipment deployments. With 75 employees and more than 250 subcontractors working on a daily basis, Canton, Georgia–based GTS has had revenues of about $40 million for each of the past three years.

## 44. Graybar
**www.graybar.com**
**800-GRAYBAR (472-9227)**

**Key Products:** Fiber connectors, couplers, housings, panels, splice trays, fusion splicers, cleaners, test equipment, VAR services

**Summary:** Graybar, founded in 1925 as a spinoff by Western Electric, is one of the largest distributors of electrical products in the US. Although it caters mainly to electrical contractors, fiber is a fast-growing area in its million-product catalog, and (as would be expected from its heritage) telecommunications

providers have always been major customers. Graybar Financial Services, a subsidiary originally formed as joint venture with Newcourt Financial (formerly AT&T Capital), offers project funding. With more than $5 billion in revenue last year, Graybar employs nearly 8,000 at more than 250 distribution centers throughout the U.S., Canada, Mexico, and Puerto Rico. Its value-added services including kitting and multi-manufacturer integrated solutions, as well as sophisticated logistics and project management. The company is now headquartered in St. Louis. Last year it opened new locations in Kent, Washington, and Wallingford, Connecticut.

*"The communications world will change over the next five years in a fairly dramatic way. Currently, on average, there are 22 devices per home, which require a 3 Mbps pipe to support them comfortably. However, in five years, due to the introduction of surface computing, individualized advertising through IPTV and other large-bandwidth applications, there will be 35 devices per home, requiring an 85 Mbps pipe. Also, in the coming years, multicast cable television for the top 30 channels will cost a homeowner nothing in many parts of the country. Fiber will be a minimum requirement, not a feature. Homes with fiber connectivity will sell for a $5,000 premium in comparison to similar homes connected with a standard hybrid fiber coax network or a traditional copper network."*

**– Glen Lang, CEO, Connexion**

## 45. Harmonic
www.harmonicinc.com
800-788-1330; 408-542-2500

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

**Summary:** Harmonic provides 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 operators to offer services such as video on demand, high-definition digital television, VoIP and, of course, high-speed Internet access. Harmonic is headquartered in Sunnyvale, California. The company also offers consulting, service and support to its customers – including network planning, system/network management, middleware integration and training. Harmonic maintains R&D, sales and system integration centers worldwide. In 2006, it generated revenues of $247.7 million and employed 689 people. Harmonic's customers include Cablevision Systems, Charter Communications, Comcast, Cox Communications, DIRECTV, EchoStar, Insight Communications, Sinclair Broadcasting, Thales and Time Warner Cable. International customers include Alcatel, Aliant, Bell ExpressVu, Canal Plus, Hong Kong Cable Television, NTL, Ono, SaskTel, Siemens, SkyPerfectTV, Softbank, Sumitomo/BNMux and Telewest.

## 46. 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 HDNet World Report, Dan Rather Reports and Sound Off with Matt Pinfield, as well as licensed series from Paramount, Warner Bros., Sony and other studios. It also broadcasts live sports, such as National Hockey League and Major League Soccer games, NASCAR Grand National Division auto racing, and HDNet Boxing. A sibling network, HDNet Movies, delivers commercial-free, full-length feature films from major studios and 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 announced that Verizon would carry both HDNet and HDNet Movies on its FiOS TV service, and iIn 2006, 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.

*"The insatiable demand for bandwidth continues to rise exponentially. There doesn't appear to be any end to this in sight, which is why we see the increasing need for fiber systems as close to the user as possible. Energy-efficient systems and digital technologies are becoming increasingly intertwined. A building's technology infrastructure will have a significant impact on the real-time management and conservation of energy and other resources. Competition among telecommunications and video service providers is increasing in many markets. We're seeing bundling wars, new services and a high level of consumer-driven innovation from service providers, all of which ultimately will benefit residents. Regulators have come out in favor of this competition, so property owners need to build capacity for future requirements and plan for some flexibility in their cabling infrastructure to avoid proprietary or single-provider solutions. Developers need to ensure that their properties don't quickly become 'have nots' that cannot provide residents with access to the amenities they want and expect."*

**– Richard Holtz, CEO, Infinisys**

## 47. Hitachi Telecom (USA)
### www.hitel.com
### 770-446-8820

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

**Summary:** Hitachi Telecom develops and manufactures optical access equipment, including GPON FTTP solutions, and markets them to a wide variety of customers including telecommunications service providers, cable television service providers, municipalities and real estate developers. In 2006 the company's AMN1220 family of ONTs and OLTs became the first full-rate (2.4 Mbps downstream/1.2 Mbps upstream) GPON system deployed communitywide in the United States – in Bandon, Oregon. It was also the first to receive USDA acceptance for use in networks supported by the rural Broadband Access Loan program (in May 2007). The company also offers optical transport equipment for long-haul service providers. Hitachi Telecom, headquartered in Norcross, Georgia, is a subsidiary of Hitachi America, Ltd., and Hitachi, Ltd., of Japan. Hitachi, Ltd. has approximately 350,000 employees worldwide and in fiscal 2006 (ended March 2007) generated sales of $87 billion. Hitachi, Ltd., is ranked No. 3 in the electronics, electrical equipment category of the Fortune Global 500, and 48th overall. **Member, FTTH Council.**

## 48. InfiniSys Electronic Architects
### www.electronicarchitect.com
### 386-236-1500

**Key Products:** FTTA Fiber-to-the-Apartment system, iPod-Ready Apartment Home, strategic technology planning, low voltage system engineering and integration, in-building WiFi/cellular networks, resident technical support services, product design services, service provider contract negotiations, project management, technology assessment, due diligence services

**Summary:** Since 1990, InfiniSys has been providing comprehensive, flexible technology solutions to the multifamily industry. As independent electronic architects, the company creates technology-based amenity solutions for new and existing apartment communities, condominiums, mixed-use housing, student housing, master-planned communities and commercial real estate. In addition to developing standards-based, sustainable technology systems, InfiniSys represents developers and property owners in their negotiations with service providers and contractors. InfiniSys also works with electronics manufacturers and service providers to create new product and service offerings that benefit property owners and their residents. Headquartered in Daytona Beach, InfiniSys has 15 full-time employees.

## 49. JDSU
### www.jdsu.com
### 408-546-5000

**Key Products:** Fiber optic communications components and testing equipment including attenuators, circulators, couplers/splitters/WDMs, detectors/receivers, transmission, amplification, wavelength management modules, circuit packs, optical test platform

**Summary:** Based in Milpitas, California, JDSU 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. It also provides optical solutions for medi-

cal/environmental instrumentation, semiconductor processing, display, brand authentication, aerospace, defense and decorative applications. JDSU 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, and it has acquired more than 20 companies since that time. Its acquisition of the broadband company Acterna in August 2005 made JDSU a leader in optical communications subsystems, 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 $1.2 billion for the fiscal year ending June 30, 2006.

*"MetaSwitch has achieved record growth … but even more exciting has been hearing … what customers have accomplished with our technology. These telecom leaders have deployed high-quality, advanced offerings that dramatically improve the lives of their residential customer base and boost productivity for their business customers."*

**– MetaSwitch CEO John Lazar**

## 50. KiS Communications
www.kis-comm.com
731-986-0178

**Key Products:** Engineering and technical services for broadband and wireless service providers

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

## 51. KT Communication
www.ktcom.tv
877-485-3557; 573-446-3693

**Key Products:** Satellite-delivered video programming

**Summary:** KT Communication is a business-to-business

wholesale provider of satellite-delivered programming. The Columbia, Missouri–based company provides digital satellite video programming solutions for C-Band, Bulk, L-Band and Transport. Its video platform delivers content to independent multichannel 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; private cable operators; wireless cable operators; and franchise cable operators, particularly operators of small and rural systems. KT Communication helps its customers manage capital, cash flow and operating costs; maintain subscriber revenue and customer service in their communities; and 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.

## 52. Leviton Manufacturing
www.leviton.com
718-229-4040

**Key Products:** Premises wiring, outside plant, central office solutions and home automation products

**Summary:** Founded in 1906, Leviton Manufacturing is located in Little Neck, New York, and provides voice, data and home networking products for industrial, commercial, OEM and residential markets as well as basic electrical infrastructure and energy management products. Leviton takes fiber connectivity all the way from the central office to the jack inside the house, with fiber-to-the-home solutions including optical distribution cabinets, pedestals, drop terminals, network interface devices, fiber optic enclosures, optical splice components and accessories and fiber optic cable assemblies. The voice and data division produces both fiber and copper products at its manufacturing complex in Bothell, Washington. Residential structured cabling and home control products are offered to builders and homeowners through Leviton Integrated Networks and Controls. In January 2007, Leviton joined forces with Microsoft to offer homeowners a way to remotely control lighting and other Z-Wave-enabled home automation schemes using many popular consumer electronic products. **Member, FTTH Council.**

## 53. Light Brigade
www.lightbrigade.com
800-451-7128; 206-575-0404

**Key Products:** Fiber optic training for industry professionals that focuses on design, installation and maintenance

**Summary:** A 21-year-old independent training organization for the fiber optic industry, The Light Brigade tailors its education

and skill-building programs to the needs of the entire range of fiber optics professionals including technicians, engineers, installers, supervisors, network designers, managers and consultants. Clients include telecommunications manufacturers and network carriers; state, local and federal governments; electrical, telecom and data communications contractors, engineering and research institutes; schools, universities and colleges; medical facilities; aerospace companies; national and international military organizations; small to large commercial enterprises; utilities; information technology services; and end users. In addition to theory, terminology and hands-on skills, the courses cover fiber optic issues and how they impact future technologies and trends. The Light Brigade's state-of-the-art training facility is located in Tukwila, Washington, just south of Seattle, near SeaTac airport. The Light Brigade also offers custom courses for clients at their own sites. Classroom training is a multimedia experience incorporating traditional presentation techniques with DVD-based educational materials that have been developed over the years from live sites and installations.

*"Ortronics, and Legrand for that matter, sees the consumer demand for broadband communications as a progressive extension toward technology used in commercial applications today. Ortronics and their sister companies OnQ, Vantage and UStec anticipate more activity and interest in delivering intelligent home networks that enhance and augment user lifestyles."*

**– Chris Adams, Marketing Manager for the Advanced Marketing Group, Ortronics/Legrand**

## 54. LTS Group
www.LTSCompany.com
206-275-6707

**Key Products:** Development, design, deployment, sales and operation of fiber-to-the-premises networks

**Summary:** LTS' Network Development Group specializes in development, system design, deployment, sales and marketing of fiber-to-the-premises triple play services (voice, data and video) for rural broadband networks and telecom companies. Customers include CLECs and IOCs as well as property developers in resort and greenfield builds. LTS' Network Development Group has successfully developed, designed, engineered, constructed and turned up three operational FTTP networks in rural Oregon, and is in the advanced stages of planning networks in an additional nine rural com-

munities in Oregon and a number of resort properties across the United States. In March 2007, LTS Group acquired ComSpan USA, a local telecommunications operator based in Roseburg, Oregon, to form ComSpan Communications, an advanced full-service FTTP network operator in Oregon with a strategy of expanding into neighboring states. The company now has more than 200 employees, and revenue in 2006 was in excess of $50 million.

## 55. MetaSwitch
www.metaswitch.com
510-748-8230

**Key Products:** Class 4/5 softswitches and application solutions

**Summary:** MetaSwitch provides switching and applications solutions for both packet- and circuit-switched networks. Its call agent, media/signaling gateway and application server platform support a full range of Class 4/5 capabilities and hosted IP communications services. Based on open standards including IP Multimedia Subsystem (IMS), MetaSwitch solutions scale from a few hundred to millions of subscribers in both integrated and distributed configurations. Customers range from Tier 1 global carriers to regional service providers and include operators of wireline, cellular, broadband wireless, cable and fiber networks. With more than 450 deployments in North America, the Caribbean, Latin America and Europe, MetaSwitch reported revenues of $46 million in 2006. Recently the company has won several major customers, launched a new initiative targeting cable operators and introduced new applications including a conference call server and a portal that enables subscribers to self-provision services via the Web.

## 56. Michels Communications
www.michels.us
920-583-3132

**Key Products:** Fiber optic network design and 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 Corporation, 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; 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
and motorola.canopywireless.com
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, a Horsham, Pennsylvania-based unit of Motorola, enables the delivery of advanced broadband services over copper, optical, hybrid fiber coax and broadband wireless networks. 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 VoIP. Canopy has emerged as a major player in municipal WiFi deployments, hotspots and similar networks, including delivery of broadband over wireless and powerlines in MDUs. 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 work-at-home requirements. Motorola pioneered digital television, including the development of the world's first all-digital HDTV system, and is the global leader in digital set-top box shipments, with almost 1 million IPTV set-top boxes shipped by year-end 2006. Among its recent acquisitions in that area are Kreatel AG (IP set-tops with functions that address the needs of telecom service providers), Netopia (home gateways), and Broadbus Technologies (for distributing content-on-demand). Motorola is one of the three leading suppliers of ONTs and OLTs for Verizon's FiOS build. In 2006, Motorola, Inc. had sales of $42.9 billion (up 17 percent from 2005) and 66,000 employees. **Motorola BCS is a member of the FTTH Council.**

*"Telcos have adopted IP packet technology for the long term as the basis on which emerging broadband services will be deployed. This shift to packet technology will be the catalyst that unleashes the bandwidth in telco, first-mile and transport networks."*

**– Mike Skubisz, CTO, Pannaway**

## 58. Multilink
www.multilinkone.com
440-366-6966

**Key Products:** Network power supplies, enclosures and cabinets; fiber distribution and management solutions; optical couplers and passive WDM/CWDM multiplexers; MDU enclosures, and a full range of raceway and pathway solutions

**Summary:** Multilink, based in Elyria, Ohio, was founded in 1983. Multilink continues to evolve from a manufacturer of telecommunications network components to a worldwide supplier and integrator of end-to-end bundled solutions. The company's customers include independent telcos, utilities, local area network providers, and the 50 largest cable MSOs. Products are designed to meet the needs of both legacy plant and new technology applications; the company's new product development has been focused on fiber optic–based solutions.

## 59. Nokia Siemens Networks
www.nokiasiemensnetworks.com
404-257-4000

**Key Products**: A complete spectrum of products, services and solutions relating to fixed and mobile network infrastructure and services, driving IP convergence and providing end-to-end solutions

**Summary:** Beginning operations on April 1, 2007, Nokia Siemens Networks is a top-three supplier of communications infrastructure with strong end-to-end convergence capabilities. Its Broadband Access Division offers DSLAMs (a family of ATM and IP DSLAMs brings the end user up to 100 Mbps on existing copper infrastructure), carrier switches, access switches, narrowband/multiservice solutions and passive optical network solutions. PON solutions include both GePON and GPON technologies and allow for different architectures, such as fiber to the curb, building or home, as well as hybrid DSL/FTTC scenarios that re-use existing copper assets to optimize capex while allowing the delivery of up to 100 Mbps to the end user. Nokia Siemens Networks supports more than 600 providers and other customers in about 150 countries and is headquartered in Espoo, Finland. It combines Nokia's Networks Business Group and the carrier-related businesses of Siemens Communications with net sales of $23.6 billion (pro-forma) in fiscal year 2006.

## 60. NorthStar Communications Group
www.northstar.net
877-862-8682

**Key Products:** Complete services for ISP and OSP telecommunications infrastructure, engineering solutions

**Summary:** NorthStar, headquartered in Birmingham, Alabama, is the stand-alone telecommunications subsidiary of BE&K, one of the nation's largest privately held engineering, construction, and maintenance companies. Engineering News-Record 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. Services for broadband networks include network support functions such as a service response center, national field services, centralized problem management coordination, and general project management. Functional network expansion services include retrofitting of outside plant cabinets, turnkey design and building of loop electronics broadband networks, RF and fiber design, and posting and records management. NorthStar supports all the major broadband initiatives presently underway across the US. NorthStar was recognized in 2006 by AT&T as an outstanding supplier, and acknowledged by SafetyXChange magazine as a leader in workplace safety and health.
**Member, FTTH Council.**

> ## *"Different FTTH access standards are preferred by network operators in certain geographic areas and market segments."*
> ### – Emmanuel Vella, Chief Marketing Officer, Wave7 Optics

## 61. Occam Networks
### www.occamnetworks.com
### 805-692-2900

**Key Products:** IP- and Ethernet-based Broadband Loop Carrier (BLC) and related telecommunications access equipment

**Summary:** Occam Networks' broadband loop carrier (BLC) solutions enable telecommunications and other service providers to offer voice, broadband, IPTV and full triple play services over copper or fiber. Occam solutions give telco service providers the flexibility and scalability to continuously expand their offerings, with simplicity of service deployment. Founded in 1999 and headquartered in Santa Barbara, California, Occam services the needs of incumbent local exchange carriers (ILECs) and competitive local exchange carriers (CLECs) and is the leading provider of telecommunications access equipment in many of the key markets it serves. Many customers have reported that Occam's BLC solution offers a lower total cost of ownership than competitive offerings. Company highlights of the last 12 months include passing the 225 customers served mark, selling its millionth port, beginning shipments of a fiber-to-the-home product line, securing its first customer in the Caribbean Basin and introducing its first SIP-based solution. Occam was awarded the #1 listing in Deloitte & Touche's Technology Fast 500 program for being the fastest-growing tech company in North America between 2001 and 2005.

## 62. On Trac
### www.ontracinc.net
### 423-317-0009

**Key Products:** FTTx consulting, design and installation services

**Summary**: On Trac is a communications connectivity company providing FTTx contract design, construction, and systems management services to the telecommunications industry nationwide. Its corporate headquarters is in Talbott, Tennessee. Clients include Dalton Utilities in Dalton, Georgia; Morristown Utility Systems in Morristown, Tennessee; Bristol Tennessee Essential Services; Clarksville Department of Electricity in Clarksville, Tennessee (with Atlantic Engineering Group); Pulaski Electric System in Pulaski, Tennessee; GVTC in New Braunfels, Texas; and Outdoor Link (throughout North America). Field and professional services include FTTH splicing and installation; mainline fiber splicing; MDU design and installation; networking for video, voice and data; system audits; inventory control; and scheduling procedures.
**Member, FTTH Council.**

## 63. Optelian
### www.optelian.com
### 877-225-9428

**Key Products:** Optical transport systems for access, metro and regional networks

**Summary:** Located in Marietta, Georgia, Optelian designs and builds carrier-grade optical transport systems for the telco, CATV and utility industries as well as for enterprise, educational and government markets. The company's LightGAIN systems contain active and passive elements managed by the LightGAIN Management System and MGT-100 Management card. Optelian provides system solutions for optical network applications including IPTV transport, GigE extension, regeneration (10 Mbps to 10 Gbps) and amplification, OADM, DWDM, CWDM, WDM, mode and wavelength conversion, protection path switching, and splitter technologies supporting up to 40 Gbps rates and covering single- to 40-channel deployments. Optelian also provides an extensive selection of optical connectivity solutions. The company designs, develops, assembles and tests all products in the Optelian Research and Development facility in Ottawa, Canada. Optelian is currently an approved optical transport supplier for three of the top seven telcos in the US.

> ## *"Users need more speed to download and share videos without sacrificing reliability."*
> ### – Carl DeWilde, Executive Vice President of Broadband Products, Tellabs

## 64. Optical Cable Corporation
www.occfiber.com
540-265-0690

**Key Products:** Fiber optic cables

**Summary:** Optical Cable Corporation is a manufacturer of fiber optic cables primarily sold into the enterprise market, and the premier manufacturer of ground tactical fiber optic cable for the US military. Founded in 1983, Optical Cable Corporation pioneered the design and production of fiber optic cables for the most demanding military field applications, as well as fiber optic cables suitable for both indoor and outdoor use. The company's current broad product offering is built on the evolution of these fundamental technologies, and is designed to provide end users with fiber optic cables that are easy and economical to install, provide a high degree of reliability and offer outstanding performance characteristics. Optical Cable Corporation sells its products worldwide for uses ranging from commercial and campus installations to customized products for specialty applications and harsh environments, including military applications. The company manufactures its high quality fiber optic cables at its ISO 9001:2000 registered and MIL-STD-790F certified facility located in Roanoke, Virginia.

## 65. Optical Fiber Solutions (OFS), a Furukawa company
www.ofsoptics.com
770-798-5555; 888-342-3743

**Key Products:** Optical fiber, optical cable, optical connectivity products including fiber distribution hubs, and specialty photonics

**Summary:** OFS, based in Norcross, Georgia, was formed in 2001 by Furukawa Electric Co., Ltd., which purchased the Lucent Technologies Optical Fiber Solutions business from the former Bell Labs spinoff. Under Bell Labs, in 1976, OFS was the first commercial volume producer of optical fibers. The company also counts numerous other firsts 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 in Murray Hill, New Jersey, which continues some of the research heritage of Bell Labs. The solutions it has developed to help customers increase their capacity for video, voice and data transmission include AllWave Zero Water Peak Fiber; Laser-Optimized Multimode Fiber for delivering 10 Gbps at distances of 550 meters and beyond; TrueWave Nonzero Dispersion Fibers for applications that require ultra-long distance and high speeds; and FLEX bend-tolerant fibers for on-premises installations. The OFS manufacturing plant in Norcross is one of the world's largest fiber optic manufacturing facilities. The company also operates other facilities in Connecticut, Georgia,

New Jersey and Massachusetts, as well as in Denmark, Germany and Russia. Furukawa Electric is a multibillion dollar firm founded in 1884. **Member, FTTH Council.**

## 66. Optical Entertainment Network
www.fision.net
713-357-9600

**Key Products:** FISION triple play service

**Summary:** Optical Entertainment Network (OEN), based in Houston, Texas, is a triple play (voice, video and broadband Internet) service provider to residential and commercial customers in Houston, the nation's tenth-largest TV market. The company's flagship FISION offering, launched in February 2007 over fiber-to-the-home networks, offers up to 10 Mbps symmetrical high-speed Internet connections; VoIP local and long distance services; and entertainment programming that includes more than 400 linear channels, video on demand, and DVR service. Additional services such as gaming, videoconferencing and targeted advertising are planned. OEN has signed the largest number of IPTV carriage agreements to date, acquired directly from content providers, and it has developed a business model that will enable it to license content to other FTTH communities around the US and overseas. **Member, FTTH Council.**

*"An open access network does not work well for projects that have less than 500 customers, because the service providers need enough customers to make it worth their investment. Our projects are averaging over 4,000 units, so open access certainly works well within this environment."*

**– Diane Kruse, CEO, Zoomy**

## 67. 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 management of network cable (both copper and fiber), and for in-building structured wiring for planned communities, commercial apartment buildings, MDUs and campus environments. The company, originally founded in the US in the 1960s, is now a subsidiary of Legrand, based in Limoges, France. The combined company's products include patch pan-

els, 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 low-voltage electrical installations and broadband networks. Ortronics also partners with other Legrand companies like Wiremold, Cablofil and OnQ to bring integrated solutions to customers. Operating in more than 60 countries with 2006 sales of $3.8 billion, Ortronics/Legrand employs about 31,000, and its catalogs list more than 130,000 products.

## 68. Pace
www.pacemso.com
507-288-1853; 800-444-7223

**Key Products:** Coaxial cables, fiber optic connectors and splicers, fiber enclosures, transmitters, receivers, splitters; system design for signal distribution; technical support and training

**Summary:** The past 35 years have seen this Rochester, Minnesota–based company grow from a regional distributor to a national wholesaler servicing customers in all 50 states and Canada. Pace supplies products from the industry's most recognized manufacturers, such as Foxcom, CommScope and DIRECTV, as well as its own proprietary line of cable, passives, installation accessories, amplifiers, and 100 percent quality assured modulators, which it markets under the label Tradewind International. Pace operates four strategically located warehouses and distributes equipment for direct broadcast satellite, SMATV, private cable operators, REITs, system operators, installers, dealers, and retailers.

## 69. PacketFront
www.packetfront.com
603-888-5100

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

**Summary:** A pioneer in  open-access broadband networking, PacketFront develops advanced purpose-built solutions for fiber-to-the-home networks. PacketFront enables fully automated networks where many service providers can deliver competing services over a shared infrastructure. The company is committed to advancing technical and business innovation for open-access networks. PacketFront's products include the Layer 3 BECS control and provisioning system, Advanced Services Routers (ASRs), the SMT subscriber management tool, the HMT helpdesk management tool, all-IP DSLAMs, and customer-placed multiservice switches (DRGs). Last month, it made a strategic announcement that it was developing a GPON solution consisting of indoor and outdoor optical network terminals and a high-density optical line terminal.

Headquartered in Stockholm, Sweden, PacketFront is moving its North American office from Nashua, New Hampshire, to Denver, Colorado. PacketFront also operates branch offices in the Netherlands, Norway and China.
**Member, FTTH Council.**

## 70. Pannaway
www.pannaway.com
603-766-5100

**Key Products:** Optical line terminals, optical network terminals, ADSL equipment, IP chassis, network management

**Summary:** Pannaway provides a complete portfolio of IP broadband access, transport and management solutions that enable broadband service providers to offer advanced communications services to their subscribers. Pannaway's widely deployed Service Convergence Network solution empowers telcos and municipalities to deliver converged voice, video and data services. The privately held company, headquartered in Portsmouth, New Hampshire, has been building IP broadband access solutions since 2002, and recently announced MAGNM-20, a second-generation IP super chassis that leverages the company's IP access and management technologies. MAGNM-20 provides telcos and municipalities with a highly scalable system capable of supporting any IP-based technology – even those that are emerging – in an affordable chassis-based form factor.

## 71. PMC-Sierra
www.pmc-sierra.com
408-239-8000

**Key Products:** Integrated circuits including FTTH/PON products, networking chips, wireless BSC/BTS solutions, system-on-chip digital home convergence solutions, Fibre Channel and SAS/SATA storage chips, laser and multifunction printer chips, microprocessors, and SERDES devices

**Summary:** PMC-Sierra provides semiconductors for metro, access, FTTH, wireless, storage, laser printers and fiber access gateway equipment. The company offers more than 250 different semiconductor devices, including a portfolio of FTTH and FTTN solutions. As the only supplier with millions of gigabit PON devices in field deployment and a portfolio of home gateway devices that supports all major high-speed FTTx technologies, including GPON, GePON, VDSL2 and ADSL2+, PMC-Sierra supports fiber access deployments in all geographic markets using any network topology. Customers include the leading equipment manufacturers worldwide who provide storage, fiber-to-the-home, wireline and wireless solutions for enterprises and communications network providers. The company offers worldwide technical and sales support and has a network of offices throughout North America, Europe,

Israel and Asia. PMC-Sierra is publicly traded and its corporate headquarters is located in Santa Clara, California. Its 2006 revenues were $425 million.

*"As the broadband market matures and demand for more broadband-intensive applications and services increases, we expect to see more carriers adopt a variety of tiered-broadband offerings. Tiered broadband requires 'Broadband Assurance' solutions that monitor usage and settle transport inside and outside the carrier network."*

**– Joe Simrell, CEO, Primal Solutions**

## 72. Preformed Line Products
www.preformed.com
440-461-5200

**Key Products:** Products and systems for underground and overhead cable and wire installation and maintenance

**Summary**: Preformed Line Products (PLP) is a global designer, manufacturer and supplier of cable anchoring and control hardware systems, fiber optic and copper splice closures, and high-speed cross-connect devices. PLP core markets include communications, energy, non-utility, data communications and solar. The company serves all segments of the communications industry, including telecommunications network operators, cable television and broadband service providers, corporations and enterprise networks, government departments and agencies and educational institutions. PLP operates four domestic manufacturing centers, located in Rogers, Arkansas; Albemarle, North Carolina; Asheville, North Carolina; and Albuquerque, New Mexico. It serves worldwide markets through international operations in Australia, Brazil, Canada, China, England, Mexico, New Zealand, South Africa, Spain and Thailand. In 2006, Preformed had 1,583 employees and generated sales of $216.9 million. **Member, FTTH Council.**

## 73. Primal Solutions
www.primal.com
949-260-1500; 800-438-0921

**Key Products:** Advanced IP mediation; real-time event rating; prepay solutions for voice and data services on IP networks; convergent billing software solution

**Summary:** Headquartered in Irvine, California, Primal Solutions is a communications software company whose solutions and services allow usage-based billing for IP services. To help manage customer usage on multiservice 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. Primal's products are tailored both for startup service providers and for large, established service providers with millions of customers and mixed networks.

## 74. Proxim Wireless
www.proxim.com
800-229-1630

**Key Products:** Wireless gigabit, wireless backhaul, WiMAX, WiFi 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 technologies ranging from 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 for award were the WiMAX Forum Certified Tsunami MP.16 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. In May 2007, the company announced that the Village of Bellwood, Illinois, a suburb of Chicago, deployed a Proxim Wireless WiFi mesh municipal network in order to improve public safety, increase the ability of police officers to concurrently monitor multiple areas of the village, and promote traffic and pedestrian safety for residents and commuters.

## 75. REDCOM Laboratories
www.redcom.com
585-924-7550

**Key Products:** Telecom switching systems including the TRANSip IP technology suite, SLICE 2100, HDX, and transportable telecommunications systems

**Summary:** REDCOM is a telecommunications engineering, design and manufacturing company located in Victor, New York. REDCOM communications products include public and private network systems, ISDN systems, tactical systems, programmable platforms and test equipment. Since

1978, REDCOM products have served the needs of telecom providers, businesses, governments and communities around the world, in some of the most demanding environments on the planet. REDCOM recently introduced the new TRANSip technology suite, which integrates VoIP and TDM call management, media gateway services, media gateway controller, and other features into a single platform. TRANSip works seamlessly with a variety of communications technologies and protocols including GSM, radio, satellite, C7, SS7, GR-303, V5.2, and SIP. REDCOM's telecommunications solutions are tailored to the needs of public and private exchange carriers, government and defense networks, and emergency responders.

## 76. 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 wholly owned subsidiary of SaskTel, a full-service communications provider with 3,900 employees. 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 regional sales and agency offices located in Botswana, Ethiopia, Tanzania, Panama and the United Arab Emirates. SaskTel's 2006 operating revenues exceeded $1 billion.

## 77. SENKO Advanced Components
www.senko.com
858-623-3300

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

**Summary:** SENKO Advanced Components manages fiber optic offices in more than 10 countries, including the US, UK, Italy, Australia, Hong Kong, and Japan. A part of the SENKO Group, which was founded in Japan in 1946 and employs

more than 1,000 people worldwide, the advanced components division was created in 1997. With more than 1,000 fiber-related products already in its catalog, SENKO provides multinational corporations with the technical expertise of its engineers and the manufacturing flexibility to develop custom products for high-tech industries. **Member, FTTH Council.**

*"We continue to see a rise in fiber deployments along with rich voice, video and data services to the MDU residents who, being part of the younger demographic, are heavy Internet users and early adopters for new broadband services. In addition, wireless is fast becoming the norm in the hospitality industry. Consumers are used to wireless technology in their homes and expect the same experience at hotels. Hotel and property managers are turning to VoIP as a cost-effective alternative to traditional phone services for their residents. WiMAX is also on the horizon as a potential alternative for broadband access."*

**– Munira Brooks, Senior Vice President of Sales, Marketing and Business Development, ZyXEL**

## 78. Shentel (Shenandoah Telecommunications)
www.shentel.com
800-743-6835

**Key Products:** ISP services, telephony, wireless, long-distance, Internet, and cable TV services in the mid-Atlantic and southeastern US

**Summary:** Shenandoah Telecommunications is a 104-year-old diversified company providing both regulated and unregulated telecommunications services through its wholly owned subsidiaries. These subsidiaries provide wireless personal communications services as a Sprint PCS Affiliate of Sprint Nextel, as well as cable television, video, Internet and data services, local exchange and long distance telephone services, security, sale of telecommunications equipment, fiber optics facilities, paging and leased tower facilities. The company employs approximately 380 people. Total revenues for 2006 were up 15.6 percent to $169.2 million, from $146.4 million in 2005. Net income for the year was $17.9 million, up from $10.7 million in 2005. Shentel has emerged as a key player in the broadband

market, offering local and long distance voice, cable TV, Internet and data services on an exclusive and nonexclusive basis to multi-dwelling units in mid-Atlantic and southeastern regions. Earlier this year, Shentel was selected to provide voice, video, security and Internet services over fiber to Preston Lake, an upscale residential, retail and office development in Harrisonburg, Virginia. **Member, FTTH Council.**

## 79. 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 Industries is listed in the latest Cable Industry Analyst report as the largest fiber optic cable manufacturer in the world. While Sumitomo may not be a household name in the US, it is well known among major carriers and service providers. An independent study conducted by Frost & Sullivan several years ago ranked Sumitomo Electric Lightwave first in brand awareness in the fiber optic industry. The company, based in Research Triangle Park, North Carolina, specializes in tailored network solutions for the public communications and enterprise network markets, and also serves equipment manufacturers. Its target customers include ILECs, CATV providers, public network providers, contractors, systems integrators, and enterprise network operators, as well as equipment, component and contract manufacturers. Sumitomo recently introduced hybrid fiber bundles to its FutureFLEX blown-fiber LAN infrastructure, yielding a threefold increase in efficiency. Another new product, the Lynx CustomFit Splice-On Connector, which is compatible with a wide array of existing splicer and fiber holder brands, eliminates the need for customers to invest in specially designated splicer equipment. Sumitomo Electric Lightwave is a privately held company associated with Sumitomo Electric Industries (SEI), established in 1897. **Member, FTTH Council.**

## 80. SureWest Communications
### www.surewest.com
### 866-787-3937

**Key Products:** Full range of telephone, high-speed Internet (up to 50 Mbps symmetrical), digital and HD television, and wireless services

**Summary:** SureWest, a recognized technology leader, has more than 60,000 broadband subscribers and is one of the nation's largest purveyors of digital IPTV, offering more than 300 channels, 174 channels on digital choice, 75 premium multiplex channels, 40 channels of international program-

ming, live pay-per-view events and packages, and video on demand with more than 1,000 hours of programming per month including the latest blockbuster hits, concerts, TV favorites and how-to videos. This 93-year-old company with 832 employees provides services to nearly 150,000 total access lines, nearly 1.4 million residential and business voice-grade-equivalent (VGE) access lines, 52,000 wireless subscribers and roughly 25,000 customers receiving some combination of 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 33 percent. Its revenue was $223 million in 2006.

## 81. 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 design and construction of first-mile residential fiber optic networks. Customers include telecommunications and broadband communications providers, gas distribution companies, electrical utility companies, government agencies, public and private enterprises, commercial and residential developers, general contractors and educational institutions. 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 all 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 22 offices nationwide and 1,420 "teammates," or employees. The company is headquartered in Columbus, Ohio.

## 82. Telco Systems
### www.telco.com
### 800-227-0937

**Key Products:** TDM multiservice transport and access products, multiplexers, distribution hubs, transport terminals and digital cross-connectors

**Summary:** Founded in 1972 and based in Foxboro, Massachusetts, Telco Systems, a wholly-owned subsidiary of BATM Advanced Communications, integrates transport, access and packet technologies onto industry-leading platforms. Its carrier-class transport and access solutions for IP and TDM

networks are sold in carrier, service provider and enterprise markets. The product suite 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, and 10 Mbps/100 Mbps/Gigabit Ethernet products. Telco Systems is committed to developing transport, access, and packet products for carriers' central offices, co-location centers, and points of presence, as well as enterprise solutions for FTTH, SOHO, hospitality, education, and MTU/MDU. In April 2007, the company announced that its T5 Compact Ethernet switch product line has been accepted for use in FTTH telecommunication projects funded by the United States Department of Agriculture's Rural Development Utilities Program (RDUP). Telco Systems' revenue for 2006 was $73.5 million.

## 83. Telect
www.telect.com
800-551-4567

**Key Products:** Triple-play connectivity, power, rack, cabinet and cabling solutions for the global communications industry

**Summary**: In addition to central office communications solutions including cable management, copper connectivity, fiber optic distribution, power distribution, racks and cabinets, Telect offers outside plant solutions for housing network equipment, as well as structured cabling systems for the home or small office. Services include systems integration and custom product development. Telect is a privately held company headquartered in Liberty Lake, Washington. The company, which manufactures most of the products it sells, also has facilities in Plano, Texas (manufacturing and systems integration), Guadalajara, Mexico (manufacturing), Southampton, UK (sales and service), and Wroclaw, Poland (manufacturing). Its 700 employees include sales representatives all over the world.

## 84. Telkonet
www.telkonet.com
866-375-6276

**Key Products:** Powerline carrier networking solutions

**Summary:** Founded in 1999 and headquartered in Germantown, Maryland, Telkonet develops and markets technology for the transmission of high-speed voice, video and data communications over existing electrical wiring within a building. The Telkonet iWire System leverages the building's existing electrical infrastructure, using proven powerline communications (PLC) technology to deliver commercial high-speed broadband access from an IP platform that is easy to deploy, reliable and cost effective. Telkonet's products are designed for use in commercial and residential applications, including multi-dwelling units and

the hospitality and government markets. The Telkonet platform supports VoIP telephony, Internet connectivity, local area networking, video teleconferencing, IP surveillance, network energy management and many other IT services. The company's PLC solutions are marketed and sold by resellers throughout the United States, Canada, Europe and Latin America. This year, Telkonet was awarded a contract to deploy its FIPS 140-2 iWire System in the Tampa, Florida Convention Center. The system enables the delivery of multiple IP applications to nearly all of the electrical outlets in the 600,000-square-foot conference and event center, including high-speed Internet access to conference booth areas, VoIP to office locations and digital media throughout the facility. The company has 176 employees. Revenues for 2006 were $5.2 million.

## 85. Tellabs
www.tellabs.com
630-798-8800

**Key Products:** Optical transport systems, optical network terminals, multiservice access platforms, access and data networking, multiservice edge routers, managed access, digital cross-connects, transport switching, network management, voice-quality enhancement

**Summary:** Tellabs, based in Naperville, Illinois, enables service providers to deliver high-quality voice, video and data services over wireline and wireless networks around the world. Tellabs is one of the three major suppliers of customer premises equipment for Verizon's FiOS build. The company counts among its customers wireline, wireless and cable/MSO service providers, system integrators and original equipment manufacturers worldwide, including T-Mobile, NTT (Japan), Vodacom South Africa, Telekom Malaysia, TeliaSonera (Finland) and Telstra (Australia). Tellabs is the market leader in the US bandwidth management and fiber access markets. More than a third of the world's wireless calls are made on networks owned by Tellabs' customers. The company has about 3,800 employees and in 2006 it generated sales of slightly over $2 billion. Ranked among the Business Week InfoTech 100, Tellabs is part of the NASDAQ-100 Index, NASDAQ Global Select Market, Ocean Tomo 300 Patent Index and the S&P 500. **Member, FTTH Council.**

## 86. TelStrat
www.telstrat.com
888-658-8572

**Key Products:** Broadband loop carrier, emergency standalone solutions, network element management solutions, OEM remote access solutions

**Summary:** TelStrat is a global provider of communications solutions, including the Inteleflex Broadband Loop Car-

rier, a first-mile transport and service distribution platform for delivering converged communication and entertainment services. Deployed by more than 220 independent wireline service providers, Inteleflex leverages both copper and fiber, bridging today's circuit-switched networks with emerging packet-based services. Inteleflex lets service providers deliver a complete voice, data and video communication and entertainment experience. With simultaneous support for 2.4 GPON, ADSL2+ and 10-Gigabit Ethernet, Inteleflex supports both residential and business services. Additionally, TelStrat's Enterprise Business Group offers the CallParrot Business Call Recording portfolio, enabling call center quality monitoring and business liability protection, as well as a variety of remote access products sold under the Nortel name. Founded in 1993, the company is headquartered in Plano, Texas.

## 87. Tenvera
www.tenvera.com
615-224-9300

**Key Products:** Fiber-in-the-home solution

**Summary:** Headquartered near Nashville, Tennessee, Tenvera develops fiber optic-based end-to-end solutions for home and business. The company's "Fiber-IN-The-Premises Technology," introduced in 2006, goes behind the walls of a house to make available to the end user unlimited bandwidth and connectivity for all current and yet-to-be-developed consumer electronics. Products include optical distribution frames, optical gateways, transceivers, adapters, connectors, microduct, fiber reels and fiber accessories. **Member, FTTH Council.**

## 88. Terawave
www.terawave.com
510-429-5300; 866-766-8372

**Key Products:** GPON/BPON optical line terminals, optical network terminals, integrated network terminals and 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's inexpensive, high-density BPON ONTs are ideal for MDU deployments, and several of its GPON products for residential and business applications are in operation in Europe delivering full triple play services. The firm has sold ONTs, OLTs and INTs for more than 10,000 deployments on five continents. All GPON products are available for both indoor and weather-hardened use. Terawave's partners include some of the world's largest and best-known telecommunications equipment companies, systems integrators and defense contractors. The compa-

ny's products and silicon components are all designed in house by its 100 employees.

## 89. Tetra Tech
www.tetratech.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, California, Tetra Tech employs more than 7,500 people in 250 offices worldwide. Tetra Tech provides development and deployment for wired communications systems. It plans, designs, permits, constructs and maintains cell phone, coaxial 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. Tetra Tech is also a leading provider of specialized management consulting and technical services in the areas of resource management and infrastructure. In 2006, the company had revenues of $1.4 billion.
**Member, FTTH Council.**

## 90. Toner Cable Equipment
www.tonercable.com
215-675-2053; 800-523-5947

**Key Products:** Headend equipment, fiber optic cable, fiber links and systems, FTTH, coaxial cable, passives, connectors, tools, test equipment, amplifiers

**Summary:** Toner Cable Equipment is a large stocking distributor of television signal distribution equipment used by the cable television industry, private cable operators, the hospitality industry, educational facilities, business broadcasters and other markets. Toner is the largest distributor of equipment for Olson, Blonder Tongue, RL Drake, PBN, Sadelco, and Z-Band, whose equipment allows providers to distribute television channels over cabling (CAT-5). Toner can offer customers a solution for comprehensive and competitive TV signal distribution over fiber, coax, UTP, and FTTH systems. A company in business for 36 years, Toner Cable Equipment serves both government and international clients, recently providing an 80,000-subscriber cable system in Central America with a complete fiber optic upgrade. Its sales team offers nearly 230 years of combined industry experience including familiarity with a wide variety of international technical standards, formats, and requirements. In addition to its headquarters in Horsham, Pennsylvania, Toner has divisions in the UK and Latin America.

## 91. 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 more than 200 patents worldwide, TT specializes in trenchless applications for 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, Illinois, as well as regional shows, seminars and demonstrations throughout North America each year. **Member, FTTH Council.**

## 92. Verizon Communications, Verizon Enhanced Communities
www.verizon.com/fios, communities.verizon.com
212-395-2121

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

**Summary:** Verizon Communications, based in New York, markets its FTTH service under the FiOS brand name. By the end of 2007, FiOS is expected to be available to 9 million homes. More than 1 million customers in 1,700 communities have already signed up for FiOS services – three-quarters of all FTTH customers in the US. FiOS high-speed Internet access service offers residential connection speeds up to 50 Mbps or 30 Mbps downstream and 5 Mbps upstream, and FiOS TV service includes HDTV and DVR options. In addition to FiOS, Verizon offers DSL broadband Internet service to residential and commercial customers. Verizon Enhanced Communities, a business unit of Verizon Communications, 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. VEC also retrofits multifamily properties with the company's most advanced services, including FiOS TV. It serves well over 1 million dwelling units. Verizon has 242,000 employees (up 25,000 in the past year) and in 2006 generated operating revenue of $88.1 billion, up more than 26 percent from 2005.

## 93. Vermeer Manufacturing Company
www.vermeer.com
888-837-6337; 641-628-3141

**Key Products:** Horizontal directional drilling equipment

**Summary:** Vermeer Manufacturing Company is a manufacturer of agricultural, construction, environmental and industrial equipment based in Pella, Iowa. The company's long history of involvement in the fiber optics installation industry began with its 1991 launch of the Navigator horizontal directional drilling machine lineup. The Navigator HDD lineup 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. **Member, FTTH Council.**

## 94. Wave7 Optics
www.wave7optics.com
678-339-1040

**Key Products:** Optical broadband access systems

**Summary:** Wave7 Optics is a longtime industry provider of optical broadband access systems. The company has an expanding FTTP product portfolio featuring a variety of architectural options, based on IP and Ethernet standards, for triple play voice, video and data services. The company's patented Trident7 system, unique in its support of multiple access standards from a common platform, has been sold around the world. The Trident7 portfolio includes an optical line terminal (OLT) as well as a diverse selection of optical network terminals (ONTs) to address distribution and customer access in ITU GPON, IEEE GePON, and point-to-point standard access networks. Founded in September 2000, Wave7 Optics is a privately held company that has raised more than $104 million in funding to date and expects to become profitable in 2007. Currently employing 73 full-time employees and 28 part-time employees and consultants, Wave7 Optics has a state-of-the-art research and development lab at its Alpharetta, Georgia, headquarters facility to support hardware and software product development. **Member, FTTH Council.**

## 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 uses highly durable, lightweight, state-of-the-art materials to manufacture and customize its cables and components as well as electronic test kits for communications systems. Westek can work from client drawings or assist clients in generating them. Clients include Qwest, Verizon and AT&T. Registered with Lloyd's Register Quality Assurance.

## 96. Windstream Communications
### www.windstream.com
### 866-961-9463

**Key Products:** Phone, broadband and digital TV services

**Summary:** Headquartered in Little Rock, Arkansas, Windstream Communications offers phone, broadband and digital TV services to customers in 16 states. The company is building fiber-to-the-home networks in new subdivisions within its service areas in nine states: Alabama, Arkansas, Florida, Georgia, Kentucky, Nebraska, North Carolina, South Carolina and Texas. The first network, in Canton, Georgia, was deployed in summer 2006, and subsequent announcements included 23 subdivisions in Georgia and four in Florida, with more planned for the near future. Windstream has approximately 3.2 million access lines and 715,000 broadband customers. The company has about $3.2 billion in annual revenues. Windstream was formed through the spinoff of Alltel's landline business and merger with VALOR Telecom and has 8,000 employees. In May 2007, the company announced that it has entered into a definitive agreement to acquire CT Communications. The merger will add approximately 158,000 access lines and 29,000 broadband customers, nearly doubling Windstream's presence in North Carolina.

## 97. 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 150,000 units served and more than 1,000 business customers. Its commercial division offers connectivity for commercial businesses through the sale of private data lines for point-to-point data connections and Internet access. Headquartered in Seattle, the firm currently operates in nine states, mainly in the West and Southwest. In May, it acquired private cable system

assets serving six properties in the Orlando, Florida market. Ygnition 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. It is part of the $1.2 billion portfolio of companies held by ComVentures, a venture capital firm specializing in the communications industry.

## 98. Zhone Technologies
### www.zhone.com
### 510-777-7000; 877-946-6320

**Key Products**: Telecommunications equipment for broadband access, VoIP, IPTV, and Ethernet applications

**Summary:** Zhone Technologies is a global provider of advanced telecommunications equipment to more than 600 operators in both emerging and established markets. Zhone's MALC (Multi-Access Line Concentrator) Broadband Loop Carrier equipment enables operators to rapidly deploy revenue-generating access services using their existing infrastructure, while providing a migration path to cost-efficient, all-IP access networks. The company's products address a full range of applications including residential and business broadband, VoIP, IPTV and Ethernet over both copper and fiber access lines. Zhone pioneered the new category of products now commonly referred to as Broadband Loop Carriers (BLCs), one of the fastest-growing segments of the multibillion-dollar DSL market. Zhone is also first in the Ethernet over bonded copper (EFM) market. In 2007, Zhone entered the GPON fiber-to-the-home market with products for the central office, outside plant and customer premises. With corporate headquarters in Oakland, California, Zhone, which has 500 employees, operates development centers across North America and has sales and service facilities spanning the globe. Its revenues for 2006 were $194.3 million.

## 99. Zoomy Communications
### www.zoomyco.com
### 970-928-7722

**Key Products**: Design, engineering, planning, project management, construction management, operation and maintenance for fiber-to-the-home networks

**Summary:** Zoomy Communications partners with developers to provide new residential communities with an amenity built on a fiber-to-the-home (FTTH) network and a suite of communications, entertainment and lifestyle services. Zoomy designs, builds and operates advanced telecommunication networks capable of delivering ultra-high-speed Internet, television (HDTV, IPTV and traditional CATV), phone service (traditional telephone and VoIP), alarm monitoring, community Web portals, WiFi hot spots and home automa-

tion services. Zoomy then aligns its technology with service providers that supply the best in entertainment and connectivity, customized and fully integrated with its fiber optic solutions. The company ranks in the top five in the US in FTTH deployments for new real estate developments, and is one of a handful of experienced, independent firms capable of providing and delivering this full suite of services and capabilities for homeowners. The Company's CEO, Diane Kruse, has served as the Chairman of the FTTH Council, an international consortium of fiber industry companies promoting FTTH and its lifestyle enhancements. **Member, FTTH Council.**

### 100. ZyXEL Communications
**www.us.zyxel.com**
**714-632-0882; 800-255-4101**

**Key Products:** Ethernet switches for fiber deployments; xDSL DSLAMs and CPE; WLAN controller system; security solutions; VoIP; WiMAX; network management; Carrier Ethernet

**Summary:** ZyXEL Communications, founded in 1989, is now the world's largest provider of xDSL routers and gateways, according to Gartner Dataquest. In June 2007 ZyXEL moved into the FTTH supplier business with its Ethernet switch series; it provides carrier-grade aggregation, access and premises solutions for gigabit and 100 Mbps fiber deployments. Its broad line of IP networking solutions includes access multiplexers, customer premises equipment, Internet security, wireless LAN and VoIP equipment, enabling high-performance network services for the telco, cable operator, ISP, small- to medium-sized business, residential/SOHO, and institutional MTU/MDU (multi-tenant unit/multi-dwelling unit) markets. Customers include Sprint, Time Warner, Charter, Earthlink, Chunghwa Telecom, Deutsche Telekom, France Telecom, Telefónica Brazil, Telia and Verizon. ZyXEL is headquartered in Hsinchu, Taiwan, and maintains offices in Anaheim, California, in Europe and in Asia. The company has more than 2,800 employees worldwide and sells its products in more than 150 regional markets in 70 countries through more than 70 distributors. Revenue in 2006 was $394 million.



**BroadbandProperties**
**Top 2007 100**
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# Coming in October: Focus on Distributors
## *You Can Help*

As the progression from coax to fiber takes place nationwide, the role of distributors has expanded greatly. The nation's telecommunications distributors have started to make replacements, upgrades, and small deployments as routine for fiber as they are for coax. The distributors say stocking is easy, thanks to ubiquitous standards and easy interchangeability. There are far more varieties of fiber itself than of copper. But there are fewer types of physical interfaces and fewer variations in communications protocols. Cabinets, pedestals and other enclosures have evolved to meet accepted industry standards as well.

There are hundreds of interface specs for RF equipment, for example, and fewer than a dozen for fiber, even when one includes telephony's trunk connections. In short, the "technology risk" of mixing and matching the best fiber components for the job at hand had, by the start of 2006, been reduced to the same as coax.

We share the excitement. Two years ago, we found only four distributors who were making a big difference in fiber.

Now there are scores of them. We included a few in our Top 100 list. But we're delving deeper to bring you an in-depth report and distributor listing for October.

And, of course, with worldwide copper prices so high and with prices for fiber tumbling (thanks in part to the large-scale standardization), even smaller developers and contractors are looking more seriously for alternatives.

We've come across small, local distributors offering VAR services that in many ways match the industry's distribution giants, firms like Graybar and EMBARQ. Others are transitioning into fiber by stocking the basics – sometimes only patch cords.

For October, we have some early favorites for top distributor picks. But we also pay attention to customer accolades, and tips from equipment makers about their satisfaction with their own supply chain. Let us know about distributors who have helped you. Just email our Editor-in-Chief at steve@broadbandproperties.com.