The Hottest Distributors and VARs for 2008

Traditional video-equipment distributors are adding fiber products to their catalogs and adding the fiber expertise necessary to design many inside plant networks

A BBP Staff Report

Are you a distributor or value-added reseller offering fiber-related products or services in the US or abroad? Let us know. Either e-mail our editor at steve@broadbandproperties.com, or fill out our online form at www.broadbandproperties.com.

e looked at more than 80 distributors this year before settling on our choices. Some, like Graybar and EMBARQ, are multibillion-dollar global companies. Some have fewer than 10 employees. Some are familiar fiber suppliers that offer design services and systems integration using products other than their own (in short, they act like VARs). Some made our list because of the size of their catalog offerings. Others made it because we heard from contractors and developers about superior VAR services. We also took a few tips from some fiber suppliers and equipment makers about their satisfaction with their own supply chain.

The growth in the number of noteworthy distributors on our list is startling - up from just four in 2005 and fewer than 30 in 2006. What happened? Once FTTH started to reach the mainstream market, smaller operators and contractors increasingly required both quick parts shipments for maintaining and expanding older FTTH networks, and help with basic network design for new, smaller builds.

For developers wishing to use fiber in place of copper, the distributers have offered a boon. Just as you can go to the local "coax guys" and ask for a quick-anddirty cable network installation, you can now do the same with fiber - getting much more bandwidth, lower operating costs, and higher reliability. With copper prices so high, the materials cost won't be much different. And with distributor VAR services, the design costs won't be much different, either.

Fiber standardization has helped, too. By late 2005, the only major interoperability issues revolved around the point-to-point and GePON fiber universe (equipment built to IEEE standards) versus the BPON/GPON world (ITU standards). Suppliers had figured out which connectors behaved well when matched with other specific vendors' connectors. Cabinets, pedestals and other enclosures, and their innards, have evolved to meet accepted industry standards as well.

Compare this to the RF/coax world, where there are almost 200 interfaces and the cost of the electronics is high. That makes for technology that's hard to stock and hard to service. Fiber components, on the other hand, are standard and cheap and, especially in the GPON world, quite interoperable from one vendor to another.

Over the years, many distributors we've talked to claim, in fact, that fiber's stocking risk is even lower than coax with fewer variables and more comprehensive standards. There are, however, more types of fiber cable than there are coax and Cat 5/6.

Among distributors and VARs, it has become clear that there's a simple pathway to success with fiber for those who have been serving the telcos: Start with cables, connectors and boxes, then move to active components like OLTs and ONTs, and passives like splitters. Add testing equipment, splicers, and training courses.

For those serving the cable TV industry now, fiber nodes, cable and connectors along with digital headends and network monitoring software are the ticket.

For the big fiber vendors, who are trying to broaden the market as greenfield residential construction falters, one key to success is to offer ever more comprehensive VAR services to ever-smaller operators. AFL is one example of that approach. OFS, ADC, Corning Cable Systems and others are going down the same road. (AFL and Broadband Properties recently created an extensive FTTH Planning and Implementation Guide. Filled with helpful information, the planning guide includes industry updates on FTTH market statistics, technology innovations and numerous case studies on end-to-end solutions provided by AFL Telecommunications. For a complimentary copy, visit www. afltele.com, or call 864-433-8072.)

One thing is certain: There will be a lot more distributors on the next list! BBP

About the Authors

Our list was put together by Kassandra Kania and Rachel Ellner, supervised by Editor-in-Chief Steve Ross.

Hints on Using Distributors

or developers and contractors, the comfort level engendered by distributors is not yet equal to the level that local copperoriented suppliers have achieved. These hints will help close the gap:

- Some distributors concentrate on fast delivery service and low price, but supply little or no reliable help with design choices. Choose the distributor most appropriate for your situation.
- Distributors are more likely to expend effort on your project if you concentrate your buying with them. Consider it a "quantity discount." But many distributors told us they value the steady contractor even more, even if the contractor is buying only a few select items – drop cables or splicer consumables or duct – each time.
- Demand rush orders only when you need them. Often, the initial part of an order may need to be rushed, but deliveries can be stretched out. This helps distributors juggle supply against multiple contractors' demands, in an industry where demand is still hard to predict. Similarly, if you come up short on a job, you should be able to forecast the problem a few days ahead and place a fill-in order appropriately. Many distributors are great at supply-chain management, too, and can help your cash flow.
- Train yourself and your personnel ahead of time. Several distributors told us they were amazed to be selling training materials with rush orders! Fiber installations are, of course, less forgiving than are copper builds.
- Get more than one price quote.
- If a developer must approve purchases or delivery dates, have the developer on the phone with you.
- Establish credit ahead of time just as you did for copper if you are not using the same distributors.
- Coax installers are well known for ignoring fire and other safety standards. Fiber suppliers have been more careful, requiring that distributors certify use so that, for instance, a fire-rated fiber is used indoors where necessary. Note that whereas single-family residences may have looser fire rating rules than multifamily for coax, this is not always the case for fiber.
- Many distributors for fiber are entirely online. But before you fill out the Web site form, it would be wise to talk to a live person at the distributor about the latest technologies. There are new items coming out every day in this business.

DISTRIBUTOR/VAR

3SAE Technologies

Accu-Tech

Adams Global Communication

ADTRAN

Advanced Media Technologies Inc. (AMT)

AFI

Anixter, Inc.

APA Cables and Networks Arris TeleWire Supply

ATX

Cable Network CablesPlusUSA

Computer Sciences Corp. (CSC) Corning/Corning Cable Systems

DAWNco

DF Countryman **EMBARQ Logistics**

Emerson

Fiber Instrument Sales Fiber Optic Cable Shop

Fiberoptic.com

Gravbar Harmonic Huber+Suhner **ITW Chemtronics**

KGP Leviton Mega Hertz

Metrotek Industries

Multicom, Inc.

Multilink

Nickless Schirmer Company

North American Cable Equipment

Opticomm

Ortronics/Legrand **PACE Electronics**

PDI-SAT

Pico Macom

Power & Telephone Supply Preformed Line Products Satellite Engineering Group **Skywalker Communications**

Tessco Technologies Inc.

The Light Brigade

Toner Cable Equipment, Inc. TVC Communications

Westek

WEB SITE

www.3sae.com www.accu-tech.com www.adamsglobal.com www.ADTRAN.com www.goamt.com www.afltele.com www.anixter.com www.apacn.com www.arris.com

www.atxincorporated.com www.cablenetwork.net www.cablesplususa.com

csc-service.com

www.corningcablesystems.com

www.dawnco.com www.dfcco.com

www.embarqlogistics.com www.emersonnetworkpower.com www.emersonnetworkpower.com

www.FiberOpticCableShop.com

www.fiberoptic.com www.graybar.com www.harmonicinc.com

www.hubersuhnerlinc.com www.chemtronics.com www.kgptel.com

www.leviton.com www.megahz.co

www.metrotek.com www.multicominc.com

www.multilinkone.com www.nsccom.com

www.northamericancable.com

www.opticomm.com www.ortronics.com www.pacemso.com www.pdisat.com www.picomacom.com www.ptsupply.com www.preformed.com

www.sateng.com www.skywalker.com

www.tessco.com www.lightbrigade.com

www.tonercable.com www.tvcinc.com www.westek.com

3SAE Technologies Inc.

318 Seaboard Lane, Suite 212 Franklin, TN 37067 615-778-8812 www.3sae.com

Products: Fiber optic fusion splicers, recoaters, cleavers, automated fiber strippers, all-in-one fiber preparation units, VAR services

3SAE Technologies develops and markets tools and technologies for optical fiber fusion splicing and related applications. The company's handheld fusion splicers by Future Instrument AB have been successfully deployed at several of the largest fiber-to-the-home builds throughout the country. Past projects include supplying tested harsh environment fiber optic cable harnesses to prime government contractors. Most recently, 3SAE was chosen to be the sole source supplier of a custom fiber optic cable assembly for the US Air Force. Earlier this year, 3SAE and The Furukawa Electric Co. Ltd. jointly developed an advanced splicing machine for work with high-power laser systems, medical devices, military defense systems, and other high-tech applications. The company's partners include Burch Investment Group LLC., Nyfors Teknologi AB, Fitel, and Ericsson Network Technologies.

Accu-Tech

200 Hembree Park Drive Roswell, GA 30076 770-740-2240 Fax 770-740-2260 www.accu-tech.com

Products: End-to-end copper and fiber optic cable networks, connectivity products, active electronics, structured cabling, test equipment, training

Accu-Tech was founded in 1984 as Accu-Tech Cable, a local electrical wholesaler servicing the expanding Atlanta, Georgia, area. In 1987 Accu-Tech gambled on a cutting-edge product, the wireless cable adapter, and launched itself full force into the networking world. The firm now has 27 stocking locations nationwide and has been selling internationally since 1991. It distributes products from hundreds of vendors.

Adams Global Communications (AGC)

15445 Metcalf Ave. Overland Park, KS 66223 800-451-1762 www.adamsglobal.com

Products: Headend components, transceivers, splitters, CPE drop nodes, VAR services

AGC purchases and sells a broad range of equipment, materials and supplies to the global cable and wireless industries. The company is an authorized distributor for C-Cor, Blonder Tongue, Century Wire Products, BLANKOM and Dev. AGC also offers services including repair, refurbishment, engineering and design, as well as consultative capabilities. AGC's 62,000-square-foot warehouse stocks more than 5,000 SKUs of new, used and refurbished distribution equipment, line gear and set-top converters. The company works closely with the security departments of major manufacturers to ensure all used and refurbished converters are purchased by legally authorized cable system operators. In order to maintain a large, diverse inventory, AGC purchases new, surplus and used equipment and cleans, tests, upgrades, polybags and professionally packages each piece prior to resale.

ADTRAN

901 Explorer Boulevard Huntsville, AL 35806 800-9ADTRAN 256-963-8000 www.adtran.com

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

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.

Advanced Media Technologies Inc. (AMT)

720 S. Powerline Rd., Suite G Deerfield Beach, FL 33442 888-293-5856 954-427-5711 www.goamt.com

Products: Fiber optic cables, jumper cables, transmitters, receivers/nodes, splitters, couplers, VAR services

Advanced Media Technologies Inc. (AMT) is a stocking distributor of high-end broadband products for companies such as Motorola, Blonder Tongue, DX Antenna and Amino. AMT targets emerging technology applications in broadband, including RF and fiber distribution, video, data, IP, and HDTV, and has a specialty in satellite communications, system integration, and turnkey CATV/TELCO/MATV headend construction. In October 2007, AMT joined RGB Networks' partner program to sell and distribute RGB's digital video processing products to cable and telecom customers in the United States and Latin America. Located in Deerfield Beach, Florida, AMT is a wholly owned subsidiary of ITOCHU International, the North American subsidiary of ITOCHU Corporation, one of Japan's leading companies. With operations in more than 80 countries

covering a broad range of industries, ITOCHU's revenues place it among the world's largest corporations of any type.

AFL Telecommunications

170 Ridgeview Circle Duncan, SC 29334 800-235-3423 864-433-0333 www.afltele.com

Products: Fiber, connectors, distribution hardware, systems engineering

AFL Telecommunications is an industry leader in providing fiber optic products, engineering expertise and integrated services to the telecommunications industry. It manufactures, engineers and installs the fiber optic products and equipment that communications providers need to provide high-speed voice, video and data services. Its experience in both design and application crosses markets from telco, broadband and wireless, to electric utility, OEM, enterprise and private networks. AFL's Access Solutions business unit is a FTTx System Integrator that can help design and implement an end-to-end solution. In addition to offering a full line of passive infrastructure including connectivity, closures and test equipment, AFL's FTTH expertise and product solutions include point-to-point and PON solutions, RF and IP video platforms, wireless solutions, bandwidth management and provisioning/billing solutions. AFL offers an exclusive "FTTH Made Easy" process, including an extensive cost model and return on investment (ROI) analysis tool, that takes customers from a site plan to a connected community. Recent announcements include complete system integration capabilities for DIRECTV's new MFH3 IP-based distribution platform.

Anixter, Inc.

2301 Patriot Blvd. Glenview, IL 60026 800-ANIXTER (264-9837) 224-521-8000 www.anixter.com

Products: LAN and WAN networking products, optical fiber cabling systems, connectors, patch cords, and racks and cabinets; also technical expertise, global supply chain, and other e-business services.

Founded in 1957, Anixter has become the world's largest distributor of communication products and electrical and electronic wire and cable. It is also a leading distributor of fasteners and other small parts ("C" class inventory components) to original equipment manufacturers. The company stocks cables, connectors, cabinets, cameras, DVRs, tools, test equipment and fasteners from suppliers for the retail, financial, education, health care, government, contractor/integrator, natural resources, service provider, transportation and manufacturing markets. Its inventory of more than 350,000 products is worth \$900 million. With 7,500 employees, Anixter has 239 sales and warehouse locations in 46 countries. The company's 2006 revenue was \$4.9 billion.

APA Cables and Networks

5480 Nathan Lane Plymouth, MN 55442 800-422-2537 763-476-6866 Fax 763-475-8457 www.apacn.com

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

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, Century-Tel 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.

Arris TeleWire Supply

3871 Lakefield Dr. Suwanee, GA 30024 866-36-ARRIS 678-473-2000 www.arrisi.com

Products: Accessories, adapters/couplers, attenuators, closures, cable, loops, fiber management, receiver service cables, splicers, jumpers and pigtails, opto-electronics, test equipment, tools, VAR services

Arris TeleWire Supply is a global communications technology company specializing in the design and engineering of broadband networks. The company develops, manufactures and supplies cable telephony, video and high-speed data equipment, as well as outside plant construction and maintenance equipment for cable system operators. Arris offers a wide selection of brands from hundreds of trusted manufacturers as well as its own Regal and Digicon brands. For almost 60 years, the company has provided an extensive inventory, a variety of valueadded services, and personal customer support to broadband service providers, schools and institutions, businesses, contrac-

tors and consumers. It has two distribution centers - one in Cary, North Carolina, and the other in Ontario, California. In September 2007, Arris announced that it will acquire C-COR for approximately \$730 million in cash and stock. With more than 250 customers around the world, the companies collectively reported revenues of more than \$1.2 billion over the past 12 months. The merged company will be the largest pure-play provider of equipment and solutions to the cable industry.

ATX

1-501 Clements Road West Ajax, ON L1S 7H4 Canada 800-565-7488 (USA and Canada) 905-428-6068 Fax 866-427-1964 Fax 905-427-1964 www.atxincorporated.com

Products: Cable TV, deployment services, VoIP, headend, MDU prewire and postwire, fiber optic management, components, fiber cable, design services

Since its inception in 1999, ATX has experienced rapid growth focused on broadband cable products and equipment and a growing product portfolio achieved through a series of acquisitions. ATX designs, manufactures, markets and delivers a broad range of solutions and services to the global broadband cable and broadcast industries. Its cable solutions and services enable cable television operators to configure their networks to offer new and enhanced digital services such as video on demand (VOD), HDTV, high-speed data (Internet), and digital telephony (VoIP). Broadcast solutions and services enable its customers to operate, upgrade and transition their networks to emerging digital broadcast standards.

CableNetwork Associates

5001 Northwest 13th St. Deerfield Beach, FL 954-312-1200 Fax 954-312-1078 www.cablenetwork.net

Products: Headend equipment, fiber nodes, receivers, antennas, connectors, cables, power supplies and pedestals, installation and cable tools and materials, test equipment, construction and design services

CableNetwork is headquartered in Deerfield Beach, Florida, with offices throughout South America, Europe and Asia. CableNetwork started in 1997 with service and distribution of cable TV equipment. In 2004, CableNetwork launched its first proprietary line of CNA modulators, followed by lines in fiber optics, distribution equipment and headends, as well as a construction/design division.

CablesPlus

2818-B Hungary Road Richmond, VA 23228 866-678-5852 804-716-9007 www.cablesplususa.com Products: Data communication connectivity solutions, fiber optic cable, connectors, TFOCA, network cables, fiber patch panels, MTP/MTO cassettes and custom-designed cables

CablePlus sells all kinds of network infrastructure. It was founded in 2002 mainly to serve the military, but it has grown along with the fiber and Ethernet business and its customer base is also expanding. It is ranked number 1,278 out of the top 5,000 companies listed in Inc. Magazine's "2007 Fastest Growing Private Companies in America," and 54th in the telecommunications category. Revenue this year was about \$4.8 million. The company has about 10 full-time employees.

Computer Sciences Corporation (CSC)

2100 East Grand Avenue El Segundo, CA 90245 310-615-0311 www.csc.com

Products: Front-end consulting and planning, systems integration and outsourcing

Despite its name, CSC is an active partner in network builds. In 1959, fewer than 4,000 computers existed in the world. Manufacturers rarely included software with their computers, so the early machines were concentrated in large organizations, such as aerospace companies, universities and government – the only entities with the resources to write the software to make these machines work. Two young computer analysts working in the aerospace industry saw the opportunity for a new kind of business. They set out to provide computer manufacturers with assemblers, compilers and operating systems, thereby expanding the potential market for the products. In fiscal year 2007, CSC reported record major business awards of \$16.1 billion from continuing operations. Revenue from continuing operations for the fourth quarter was \$4.05 billion, up 4 percent over last year's comparable quarter. Net earnings of \$388.8 million were reported. CSC has approximately 87,000 employees in 92 countries worldwide.

Corning/Corning Cable Systems

3180 Centre Park Boulevard

Winston-Salem, North Carolina 800-743-2671 828-327-5000 Fax 828-325-5060 www.corning.com, www.corningcablesystems.com

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

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 coexists 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. 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 with implementing 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 Gilbert manufactures a comprehensive line of broadband coaxial interconnect systems and microwave connectors.

DAWNco

3340 S. Lapeer Rd. Orion, MI 48359 248-391-9200 www.dawnco.com

Products: Fiber and satellite networking and test equipment, mainly inside plant

DAWNco is a small firm that was founded in 1987 to service the satellite video industry. It began selling fiber products in 1994. Its fiber catalog now includes thousands of products, ranging from bulk fiber and drop cables to splitter assemblies, nodes and enclosures, and test equipment.

DF Countryman

425 E 26th St. Minneapolis, MN 55406 800-328-6820 612-729-1300 www.dfcco.com

Products: Broadband and fiber optic installation, integration, fiber-to-the-premises networks

DF Countryman is a value-added distributor of broadband and fiber optic products from more than 60 manufacturers. It targets the integrated communications provider market, including multiple service operators (MSOs) and telcos. Since 1958, this Minneapolis-based company has enjoyed steadily growing revenues. It employs a dozen people and last year opened an office in San Antonio, Texas. DF has distribution agreements with IMC Networks, Alloptic, EGT and many others.

EMBARQ Logistics

600 New Century Pkwy. New Century, KS 66031 800-755-3004 913-791-7000 www.embarqlogistics.com Products: Telecommunications equipment; logistics, engineering, integration and deployment services.

EMBARQ Logistics 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 in telecommunications equipment. EMBARQ stocks more than 30,000 products from more than 1,500 manufacturers, and maintains distribution centers nationwide. EMBARQ distributes Wave7 Optics's "universal PON" Trident7 optical access platform and Last Mile Link Ethernet-based FTTP system. Founded in 1905 as Union Electric in Abilene, Kansas, the company has 995 employees and annual revenues of \$500 million (2006 sales). It is a subsidiary of EMBARQ, a Fortune 500 company. EMBARQ deployed the United States' first all-digital, fiber-optic network and an awardwinning Tier 1 Internet backbone. FTTH Council Member.

Emerson Network Power

8000 West Florissant Avenue St. Louis, Missouri 63136-8506 800-800-1280 440-246-6999 Headquarters: 314-553-2000 www.emersonnetworkpower.com

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

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.

Fiber Instrument Sales

Fiber Optic Research Park 161 Clear Road Oriskany, NY 13424 800-5000-FIS 315-736-2206 www.fiberinstrumentsales.com

Products: Training, test equipment, connectors, cable and cable assemblies, tools and tool kits, fiber optic consumable

products, Category 5e and 6 cabling products, active network equipment, and fiber optic security systems and components.

Fiber Instrument Sales, Inc. (FIS) is a manufacturer and fullline distributor of communication fiber optics products. It was founded in 1985 and has 220 employees including highly trained engineers and technicians. FIS supplies all segments of the fiber optics industry including telecommunications, contractors, resellers/distributors, researchers, government, education, cable TV operations, and telephone R&D facilities. Its 90,000-square-foot headquarters at the Fiber Optic Research Park in the town of Oriskany in Central New York State serves 11,000 customers in 110 countries. FIS-manufactured products include fiber optic power meters, light sources, OTDRs, talk sets, visual fault locators, optical return loss test sets, pulse suppressors, cable assemblies, connectors, splice trays, splice protection sleeves, in-line attenuators and connector heat ovens. In addition, FIS distributes products of 3M, AMP/Tyco Electronics, Molex, Seikoh Giken, Corning, Corning Cable Systems, AFL Telecommunications, Leviton, Garrett Com, The Light Connection, FIS Blue and other major fiber optic suppliers. It refurbishes, rents and sells a wide selection of test and fabrication equipment. The company is privately held, by Frank Giotto.

Fiber Optic Cable Shop

136 South Second Street Richmond, CA 94804 800-777-6269 510-234-9090 fiberopticcables.stores.yahoo.net

Products: Fiber optic cable assemblies (including custom configurations), breakout/distribution fiber assemblies, indoor/outdoor cables, mode-conditioning patch cables, 10Gb cables, fiber optic attenuators, switches, connectors, media converters, and network interface cards

Based in Richmond, CA, this affiliate of Support Systems International has been manufacturing data communications cable assemblies since 1976 and is a major supplier to aerospace, technical, communications, educational institutions and military bases around the world. The Fiber Optic Cable Shop has distributed quality cable and interconnect products throughout the world. It can fabricate and ship custom fiber optic assemblies in one day. Honored as an Inc. 500 company for three consecutive years, Fiber Optic Cable Shop has 25 employees and generated over \$5 million in sales in 2005.

Fiber Optic.com

One TEK Park, Suite 220 9999 Hamilton Boulevard Breinigsville, PA 18031 877-529-9114 215-529-9114 www.fiberoptic.com

Products: Active network devices, attenuators, cable, cable management, connectors, couplers, splitters, enclosures, splicers, test equipment, training

Since its formation in 1995 (as the name implies, it started as an online vendor), Fiber Optic.com has become one of the largest Web-based providers of fiber optic products, training and rental solutions. The company's customers include Fortune 500 firms, telecommunications providers, the military, installers, contractors and educational institutions from across the globe. It offers classroom, on-site and online training. The company also offers equipment rentals including fusion splicers and OTDRs.

Graybar

34 N. Meramec Avenue St. Louis, MO 63105 800-GRAYBAR (472-9227) www.graybar.com

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

Graybar, founded in 1925 as a spinoff by Western Electric, is one of the largest distributors of electrical products in the US and one of the nation's largest employee-owned companies. Fiber is a fast-growing area in its million-product catalog (from 4,200 manufacturers), and (as would be expected from its heritage; Western Electric was owned by AT&T) 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 and 14 regional warehouses throughout the US, Canada, Mexico and Puerto Rico. Its value-added services including kitting and multimanufacturer integrated solutions, as well as sophisticated logistics and project management. Last year it opened new locations in Kent, Washington, and Wallingford, Connecticut.

Harmonic

549 Baltic Way Sunnyvale, CA 94089 800-788-1330 408-542-2500 Fax 408-542-2511 www.harmonicinc.com

Products: Digital video and fiber optic systems for network operators, design services

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. 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 Sys-

tems, 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.

Huber+Suhner American Operations

19 Thompson Drive Essex, VT 05452 866-482-3778 Fax 802-878-9880 www.hubersuhner.com

Products: Fiber optic cabling and network systems

The Swiss-based HUBER+SUHNER Group is a leading global supplier of components and systems for electrical and optical connectivity in communications, industrial and transportation markets. Two family-owned companies founded in the 19th century evolved independently along similar lines before merging in 1969. The company today offers technical expertise in radio frequency technology, fiber optics, cables and polymers under one roof. It achieved double-digit growth in the third quarter of 2007. For the first nine months of the year, sales rose 12.3 percent compared to the previous year, to about \$500 million. Core business sales, excluding polymers, actually rose almost 20 percent, giving some measure of the strength of fiber network-building. The company's MASTERLINE fiber optic cabling divider system family includes a new compact flat divider that houses loose-tube cables with diameters ranging from 2 mm to 5 mm. Up to 12 fibers can be quickly divided into individually strain-relieved fan-out tails and terminated afterward. The compact divider can easily be placed in small wall boxes, distribution systems and so forth.

ITW Chemtronics

8125 Cobb Center Drive Kennesaw, GA 30152 800-645-5244 Fax 770-424-4267 www.chemtronics.com/

Products: Dusters, fiber optic cleaning kits, fiber optic cleaning swabs, heavy-duty degreasers, precision cleaners, presaturated swabs and wipes, wipes

Since 1958, Chemtronics has grown from being primarily a vendor of solvents to seller of precision rework and repair tools and solvents for the electrical, electronics and telecommunications industry. Since 1999, the company has been a wholly owned subsidiary of Illinois Tool Works Inc. (www.itw.com).

KGP

2501 Morristown Blvd. Faribault, MN 55021 800-328-5142 Fax 507-334-2177 www.kgptel.com

Products: Fiber, cables, pedestals, cabinets, connectors, splicers, boxes, tools, power supplies, test equipment, active electronics from all major vendors, design services

KGP is a leading woman-owned distributor of voice, data, video and wireless products. Since its founding in 1985, it has expanded from a single distribution center in Faribault, Minnesota, to a national distribution network with 10 regional sales offices and eight regional distribution centers as well as two manufacturing centers. Its catalog has more than 150,000 items from 300 manufacturers. Its Solutions Group provides packaged solutions including factory-installed termination systems, high-density protection systems (PDA) and high-voltage interface systems that communications providers need to deliver high-speed voice, video and data.

Leviton Manufacturing

59-25 Little Neck Pkwy. Little Neck, NY 11362 800-323-8920 718-229-4040 Fax 718-281-6252 www.leviton.com

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

Founded in 1906, Leviton 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, which has a large international distribution operation and of course manufactures products of its own, 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.

Mega Hertz

4100 International Plaza, Suite 150 Ft. Worth, TX 76109 800-883-8839 or 800-628-0088 817-529-9898 Fax 817-529-0745 www.megahz.com

Products: Fiber cable, actives, splicers, connectors, drop cables, active electronics, racks, enclosures, test equipment, Ethernet and DOCSIS, ad insertion systems, digital simulcast solutions, digital network monitoring and transport, baseband audio-video processing, broadcast/

off-air signal processing, broadcast/satellite signal processing, emergency alert systems, power management and generation, design, engineering, integration, and project management

Mega Hertz began operation in 1975 as a manufacturer's rep for LRC Electronics. Today, with offices nationwide, MHz is a VAR of unique multivendor system solutions that support the deployment of advanced technologies in hybrid fiber/coax broadband/ IP networks. In addition it provides engineering, design, project management, training, testing and installation services. It has several exclusive national relationships with well-known manufacturers such as BigBand, Dolby, Thomson Grass Valley, Sage Alerting, Hitachi, Volicon, Triveni, Vecima and Wegener.

Metrotek Industries

6880 46th Ave. N., Suite 100 St. Petersburg, FL 33709 727-547-8307 Fax 727-547-0687 www.metrotek.com

Products: Connectors, adaptors, cable assemblies, attenuators, links, splices, tools, test equipment

Metrotek is a fiber optic specialty distributor with a large inventory of fiber optic equipment, supplies and accessories. It carries almost any fiber optic product used in the telecom or datacom industries. Its catalog includes most major manufacturers.

Multicom

1076 Florida Central Pkwy. Longwood, FL 32750 800-423-2594 407-331-7779 www.multicominc.com

Products: Fiber optic cables, connectors, receivers, transporters, amplifiers, attenuators, enclosures, splitters, splicers, tools, coaxial cables, hybrid fiber and coax systems, optoelectronics; design and VoIP services

Headquartered in Orlando, Florida, and maintaining sales offices, rep agencies, and subdistributors throughout North America and Latin America, Multicom is a full-line stocking distributor of broadband products for end-to-end integration of communications solutions for the cable television (CATV) and traffic signal system industries. Multicom, established in 1982, has a multimillion dollar inventory, stocking over 7,000 products from more than 85 of the world's major manufacturers. These products are used to acquire, process and distribute audio, video, television, data, energy and traffic control signals over fiber optic, copper and coax cable. Multicom's design and engineering team has worked throughout the United States, Latin America, Spain, Portugal and Europe. Recent design project clients include the Orange County Convention Center, the Olympic Coliseum in San Juan, Puerto Rico, the Gaylord Palms Hotel and Convention Center in Kissimmee, Florida, the Marriott Brighton Gardens (more than 80 locations), and Rams Stadium in St. Louis, Missouri. The company was honored this month as Foxcom's Distributor of the Year.

Multilink

580 Ternes Ave. Elyria, OH 44035 440-366-6966 Fax 440-366-6802 www.multilinkone.com

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

Multilink was founded in 1983 and 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 opticbased solutions.

Nickless Schirmer & Co.

6820 Power Line Drive Florence, KY 41042 800-543-1584 859-727-6640 Fax 859-727-6658 www.nsccom.com

Products: Satellite, headend, distribution, coax cable and connectors, fiber optic nodes, video, test and measurement equipment

Nickless Schirmer & Co. has been providing products and service to the cable TV, broadcast television, private cable, and related professional television industries since 1991, serving American customers from its warehouse and central office near Cincinnati, Ohio. It started moving into fiber several years ago. It stocks parts from about 50 vendors.

North American Cable Equipment, Inc. (NACE)

1085 Andrew Drive, Suite A West Chester, PA 19380 800-688-9282 Fax 800-230-1793 www.northamericancable.com

Products: Satellite downlink products, cable TV headend and distribution equipment, fiber optics, voice and data communications, electronic and industrial cable, sound, CCTV and access control systems, video and audio mounting systems, equipment racks, tools, test equipment, cable assemblies

NACE has turned the specialty distribution of satellite downlink products, cable headend systems, fiber optics, wire, cable, and related connectivity products into a successful operational network. Since its inception in 1992, NACE has grown to five locations across North America (in Pennsylvania, Florida, Missouri, and Nevada). The substantial inventory is available

for immediate delivery. It sells top brand-name products from Sony, Blonder Tongue, Channel Master, Spaun USA, Holland, VMP, Winegard, and Pico Macom, and also carries Cabletronix, its own brand of headend and distribution equipment.

Opticomm

6827 Nancy Ridge Drive San Diego, CA 92121800-867-8426 858-450-0143 Fax 858-450-0155 www.opticomm.com

Products: Networks and network management, fiber, enclosures, racks, frames, power supplies, switches

Opticomm was established in 1986 and specializes in the design, development, supply and manufacture of advanced optical communications systems, offering the latest technology in fiber optics. As a prominent supplier to the optical communications industry for 20 years, Opticomm continues to maintain a strong presence as a leader in providing a wide range of fiber optic networking products to its growing list of customers in both the government and commercial sectors. Opticomm's video, audio, data and RF transmission systems serve both analog and digital requirements, providing cost-effective, flexible solutions geared for network reconstruction and expansion. VAR services handle small- to large-scale networking applications involving electrical-to-optical conversion, and transmission, of a broad selection of video, audio, data and RF protocols.

Ortronics/Legrand

125 Eugene O'Neill Drive New London, CT 06320 877-599-5393 860-445-3800 Fax 888-282-0043, 860-405-2970 www.ortronics.com

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

Ortronics is one of the largest suppliers of products for management of network cable (both copper and fiber), and for inbuilding 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 panels, patch cords, workstation outlets, cable management systems, and 110 cross-connect systems for copper and wireless as well as fiber. It may have the world's largest catalog of housing and commercial building products and systems for 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.

Pace

3582 Technology Drive NW Rochester, MN 55901 800-444-7223 507-288-1853 Fax 507-288-0831 www.pacemso.com

Products: Coaxial cables, fiber optic connectors, transmitters, receivers, splitters; system design for signal distribution; technical support

Founded in 1972, the company has grown from a regional distributor serving the upper Midwest to a national wholesaler servicing customers in all 50 states and Canada. Its mission to help direct TV operators gain more subscribers – has clearly paid off as it has doubled its revenue over the past two years. From its offices in Minnesota and Florida, Pace supplies products from the industry's most recognized manufacturers 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 warehouses and is an industry-leading distributor of equipment for DBS, SMATV, PCOs, REITs, system operators, installers, dealers and retailers.

PDI-SAT

6353 West Rogers Circle, Suite 6 Boca Raton, Florida 33487 800-242-1606 561-998-0600 Fax 561-998-0608 www.pdisat.com

Products: DIRECTV programming and hardware, in-home jumper cabling and structured wiring, 3GHz fiber end-to-end solution, engineering and design consultation, technical support, training

PDI-SAT, a division of PDI Communications, Inc., plans, constructs, and implements DIRECTV satellite programming at MDUs, hotels, and institutional settings. It builds its own pre-racked headend equipment and can handle design and construction of the headend, property backbone, and inunit structured wiring. It can also work with outside affiliates to take the role of system operator, handling all service calls. With about 1000 sites managed, PDI-SAT is a leading supplier of equipment, programming and engineering services. The company is also a registered Training Center for SBCA certification of installation technicians throughout North America. The firm is a master distributor of DIRECTV receivers, including buydown subsidized equipment for SMATV dealers handling MDU and hotel accounts. It is also one of only three master system operators for DIRECTV-supplied MDUs and is the largest DIRECTV "Super Affiliate" Free-to-Guest dealer in the US. It can help with broadband Internet into both the MDU and Lodging/Institution marketplace (including WiFi Mesh networks), and arrange PPV-VOD (Pay Per View - Video On Demand) into the hotel and institutional marketplace. The firm has a branch office in San Diego.

Pico Macom

6260 Sequence Dr. San Diego, CA 92121 800-421-6511 858-546-5050 Fax 858-546-5051 www.picomacom.com

Products: Headends, active and passive components, cable, connectors, design services

Pico Macom, founded in 1962 as the Product Identification Company, Inc. (PICO), is a worldwide leader in the engineering, development and manufacture of an extensive line of broadband network solutions, including electronics, systems equipment and installation components for the franchised cable, private cable and satellite television industries. It is now part of The Steren Group, a consortium of electronics and interconnect components manufacturers. Pico Macom products are installed in hundreds of broadband systems and networks around the globe in residential units, hotels, motels, schools, hospitals, and private and smaller-to-medium cable environments. Pico Macom maintains manufacturing operations in the United States, Mexico and Southeast Asia. The company brands most of what it sells.

Power & Tel

2673 Yale Avenue Memphis, TN 38112 800-238-7514 901-324-6116 Fax 901-320-3082 www.ptsupply.com

Products: Telecommunications and CATV products

Power & Tel, founded in 1963, is an independent distributor of material for the telecommunications and cable TV industries. The company stocks more than 10,000 products from top manufacturers worldwide. Customers include broadband/ cable TV providers and independent telephone companies. The Integrated Logistics Services (ILS) group is responsible for the development, implementation and operation of customized material management solutions for businesses such as Bell operating companies and OEMs. Power & Tel's network team helps build communication networks for enterprises, ISPs, CLECs, universities and other non-LEC or deregulated entities. The company has 11 offices in the US and Canada as well as operations in Mexico, Africa, Europe, Asia, South America, Central America and the Caribbean.

Preformed Line Products

660 Beta Drive Cleveland, Ohio 44143 440-473-9110 Fax 440-442-8816 www.preformed.com

Products: Products and systems for underground and overhead cable and wire installation and maintenance, design services

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.

Satellite Engineering Group

11605 South Alden Street Olathe, Kansas 66062 800-932-1555 913-324-6000 www.sateng.com/

Products: Satellite, CATV, broadcast, VSAT

Satellite Engineering Group Inc. was founded in 1979 with a primary focus on global sales and distribution of cable TV, broadcast and satellite-related products and services to private and government operators; it often works on networks that include fiber. Its technical staff can provide the expertise to assist in the procurement of products and services for a wide array of projects. There is a regional office in Atlanta, Georgia.

Skywalker Communications

9390 Veterans Memorial Pkwy. O'Fallon, MO 63366 800-844-9555 www.skywalker.com

Products: Satellite/cable TV installation products and consumer electronics

Skywalker Communications was founded by Lewis and Roger Criebaum in 1979. Operations began in O'Fallon, Missouri, with the manufacture and distribution of satellite television equipment. As the company grew, Skywalker ceased manufacturing in 1986 in order to concentrate solely on distribution (it private-labels its Skywalker Signature Series line of cable, installation tools and accessories), and it offers a lifetime warranty on many products. In addition to its corporate headquarters, the company operates fully stocked branch facilities in Indianapolis, Indiana; New Berlin, Wisconsin; and Las Vegas, Nevada.

TESSCO Technologies

Global Logistics Center 11126 McCormick Road Hunt Valley, MD 21031 800-508-5444 www.tessco.com

Products: Network infrastructure, mobile devices and accessories, install-test-maintenance, supplies, training and services TESSCO has served the wireless Industry since 1982, growing out of an earlier operation, the Towson Engineering Sales and Service Company, which installed the first engine-to-caboose two-way railroad radio in 1952. It now operates in 100 countries and seven languages. Its distribution operation is handled out of a 184,000-square-foot Global Logistics Center in Maryland, but West Coast US customers are served out of Reno. It has handled huge projects, supplying the base antenna system used in the second cellular build-out in 1983. Last year, TESSCO acquired TerraWave Solutions and GigaWave Technologies, leading suppliers of WLAN proprietary products and training programs - introducing the company to a large set of wireless users and resellers. The company often participates in FTTx builds.

The Light Brigade

837 Industry Drive Tukwila, WA 98188 800-451-7128 206-575-0404 www.lightbrigade.com

Products: Training, fiber optic supplies, tools and test equipment

The Light Brigade, the world's largest fiber optic training company, was founded in 1986 by Larry Johnson, who wanted to provide a growing population of fiber optic end users in the Pacific Northwest expertise with the technology. The name "The Light Brigade" evolved from the concept of a group of specialists that could be called upon to assist clients with their fiber optic needs and to serve as an engineering and installation consulting company. By the 1990s demand for training had grown, so the company minimized its contractor services, although high-level design and installation projects continued in order to acquire expertise for classroom applications. Over the last two decades, the company has trained more than 30,000 people from a wide variety of industries. The company is internationally recognized and is often invited to conduct short courses and to coordinate fiber-related special events at conferences around the world.

Toner Cable Equipment

969 Horsham Road Horsham, PA 19044 800-523-5947 215-675-2053 www.tonercable.com

Products: Headend equipment, fiber optic cable, fiber links and systems, FTTH, coaxial cable, passives, connectors, tools, test equipment, amplifiers, digital signal processors, modulators, antennas, transmitters, amplifiers

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 Cat 5 cabling. Toner can offer customers a solution for comprehensive and competitive TV signal distribution over fiber, coax, UTP and FTTH systems. 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.

TVC Communications US

800 Airport Road Annville, PA 17003 888-644-6075 www.tvcinc.com

Products: Wiring and connector blocks, connectors, splicers, enclosures, fiber cable, test equipment, active and passive equipment

For half a century, TVC has provided products and technical support for communications infrastructure. Today, TVC serves the entire United States, Canada, and Central and South America. It offers technical products and support services for fiber optic cable, twisted pair and coax. Growing through acquisitions, TVC has positioned itself to be a strategic player, with warehouses located throughout the Americas and sales offices in eight countries. The Caribbean and Latin American (CALA) division is headquartered in Miami and serves Mexico, the Caribbean, Central and South America. TVC has incountry staff in Mexico, the Dominican Republic, Colombia, Brazil and Argentina. Its Canadian division includes distribution and sales facilities in Toronto, Vancouver and Montreal with two additional sales offices in Calgary and Halifax.

Westek Electronics

2450 17th Ave. Suite 200 Santa Cruz, CA 95062 800-526-CORD (2673) 831-465-3500 www.westek.com

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

Westek was founded in 1986 and 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.