

Following the Technology Curve Where are Your Customers Headed?

Transitional FTTx Deployments

Preparing the Central Office for GPON Migration

A Revolution In Evolution - IPTV

A TDM to VoIP Migration Strategy



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Introducing “The Skinny Wire”

Customer Focus

For more than 35 years Walker and Associates has practiced customer-centric principles. While some organizations made the discovery of 360 degree customer relationship management during the last ten years, we remained committed to a core value - “the ultimate focus of every associate is the needs of the customer!” It should come as no surprise that customers know us as a company dedicated to high levels of customer satisfaction, customized innovation applied to customer challenges, and flexibility that allows for win-win-win outcomes.

This kind of reputation doesn’t come easily, and it is achieved only with commitment from individual associates. Across the country we are regularly asked about specific associates who still work for us as well as those that have moved elsewhere. The degree of friendliness and familiarity we develop with customers appears to be part of our formula for success.

We understand that our customers are people who buy from people. Relationships between our associates and our customers are an important part of the process that moves us forward. More important is the knowledge that our customers are people who provide services and sell to other people. If we don’t get that right, you can’t deliver on your own commitments to your customers. That would be unacceptable to us. You deserve only “Distribution Done Right!”

Editor in Chief *Jennifer Beck*
Production Editor *Randy Turner*

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The Wise Guy*

Transitional FTTx Deployment

by Rodney Wise
Director, Engineering Services
Walker and Associates

Copper vs. Fiber, DSL vs. PON, Active vs. PON, Centralized vs. Distributed, can't we all just get along? We've gone so far with our competitive nature that VERSUS has its own television channel! In our business, there will always be debate about which technology, architecture, medium or strategy is best. The debate around DSL and FTTx deployments are usually cost tradeoffs.

The evolution of DSL technology and pricing has helped copper outlive all expectations. Who would have thought in 1989 when BellSouth was deploying its fiber to the home vision in Heathrow, Florida that seventeen years later copper would still be a viable solution for voice, video and data services? However, the ever-expanding world market's demand for copper in providing services and in manufacturing is pushing copper to precious metal territory. New copper deployments should be rare. Wouldn't that be a nice business plan to write? Dear Business Development Manager, I am replacing my copper with fiber, increasing my service delivery capability, and adding 10% to the bottom line by

***The WISE GUY - As Director of Engineering Services, Rodney Wise confronts a variety of technical questions on a daily basis. His broad background provides him a real-world perspective of challenges and opportunities telecom engineers and project planners face in the field. This experience, along with continual training from the manufacturing community and a staff of equally talented Sales Engineers provide customers with a wealth of pre and post-sales engineering support. The Wise Guy is a regular feature in The Skinny Wire and on our website.**

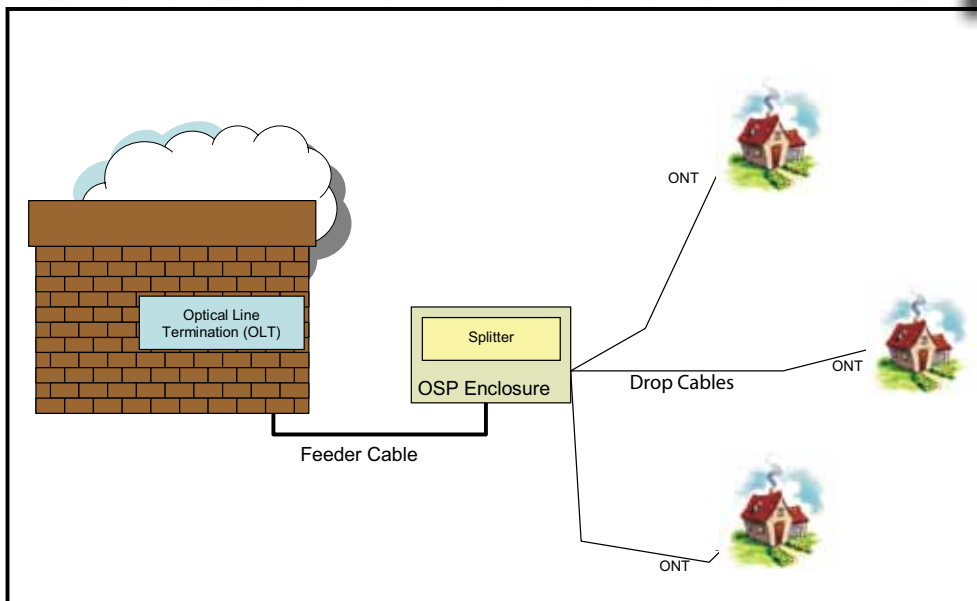


Figure 1 - PON Network

scrapping the copper, is that ok? You betcha! That is a bit farfetched but everyone should dream occasionally. In contrast, sand is not as precious so scrapping our PON fiber for the raw material is not really dream worthy.

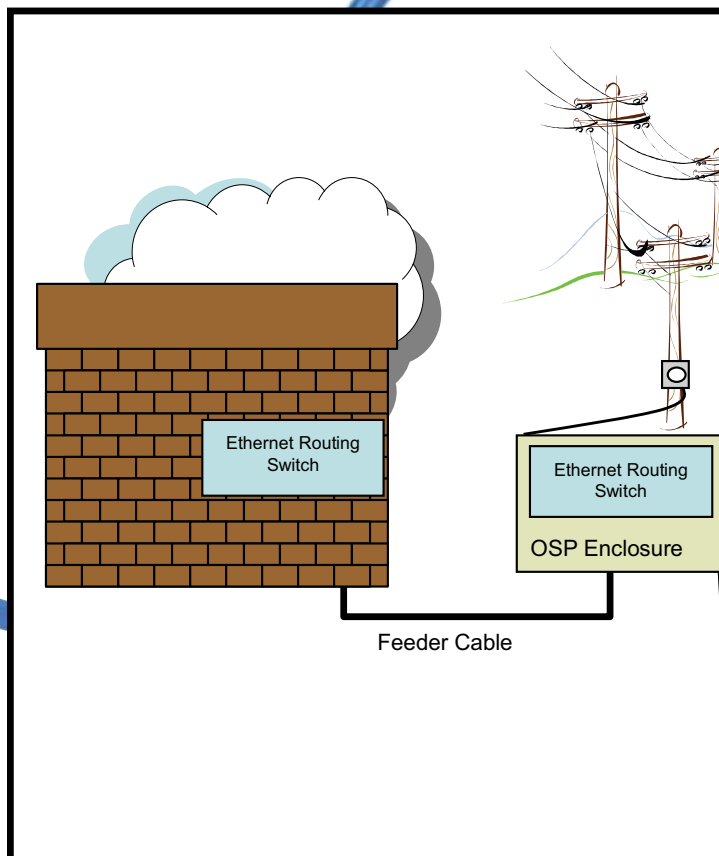


Figure 2 - Active Network

Deployments

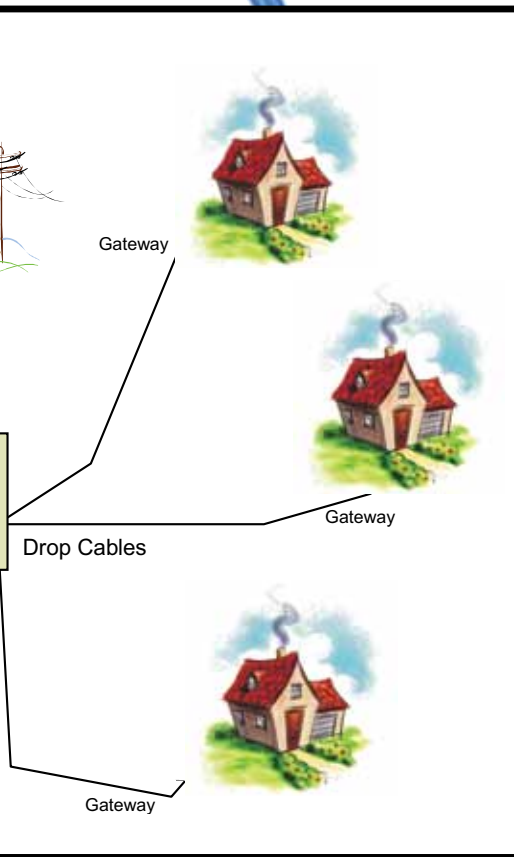
Today's GPON deployments offer considerable distance and bandwidth advantages over previous PON standards. Some GPON manufacturers provide 2.5 Gbps downstream and 1.2 Gbps upstream and serve up to 60 km. GPON also offers a few advantages over active Ethernet solutions. GPON deployment costs are generally lower. Also, operating costs savings are gained since power is not required for components between the optical line termination (OLT) and the optical network terminal (ONT) (see Figure 1). Yeah, save some coal for another day.

Similar to other PON standards, GPON CPE units still share the OLT bandwidth, which is not the case in active Ethernet solutions. In the PON shared network, each subscriber must have the same ONT and each subscriber receives the same bandwidth. This inherent PON design creates deployment issues when one subscriber requests additional

bandwidth or when new technology or firmware is introduced into the network. The technology or firmware upgrade will have to be completed for all the CPE units and the OLT at the same time.

DSL and PON are excellent transitional solutions to deliver voice, video and data prior to deploying an active Ethernet FTTx network. See, we can all just get along. An active network provides dedicated circuits to each subscriber from powered Ethernet routing switches located in the outside plant (see Figure 2). Active Ethernet provides higher bandwidths (up to 10 Gbps currently) and a larger serving area up to 120 km (versus 60 km with GPON). Since every home has a dedicated circuit, bandwidths can continue to climb with every advance in Ethernet switch capability. Active Ethernet is gaining momentum in FTTx deployments.

I wonder what technology and standards lie ahead to satisfy our increasing appetite for bandwidth and immediate demand for services... stay tuned...



Westell - Intelligent Carrier-class Products

By Westell

Westell Technologies, Inc. (NASDAQ: WSTL) is a holding company for Westell, Inc. and ConferencePlus, Inc. Westell, Inc. is a Tier-1 provider of intelligent, carrier-class broadband access and networking products, manufactured using a TL9000 registered quality management system. ConferencePlus is a collaborative Application Service Provider that manages and hosts voice, video, IP applications and back-office services.

Founded in 1980 and IPO in 1995, Westell is headquartered near Chicago, Illinois, U.S.A. Westell was an early pioneer of DSL technology and a founding member of the DSL Forum. In 1996 Westell led the world in DSL tests for telephone companies, long-distance carriers, Internet Service Providers

and other businesses in this expanding field.

A summary of the company's three sectors include:

Customer Networking Equipment

Westell's broadband customer networking solutions enable residential, small business and Small Office Home Office (SOHO) users to access the Internet through the power of broadband xDSL technology, and to network multiple computers, phones and other communications devices. These devices include all-in-one mediastations, gateways, routers, and modems that enable the delivery of high-speed data, VoIP, IP video, and emerging IP Multimedia Subsystem (IMS)-based services.

Network Service Access

Westell network service access products enable the transmission, maintenance, and troubleshooting of multiple broadband solutions from the customer access point to the serving Central Office (CO). This division

is responsible for Westell carrier transport and multiplexers. These products enable our customers to provision and manage a range of broadband services from the end-serving Central Office (CO) to end point facilities.

Conferencing Services

ConferencePlus, a Westell subsidiary, offers complete conferencing services including voice, video, and IP data conferencing, to carriers and multi-national corporations throughout the world.

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Preparing the Central Office for GPON Migration

By ADC

Future-proofing is the key to any successful fiber-to-the-premises (FTTP) network. Without a crystal ball to examine future bandwidth needs and determine winning technologies, service providers face some major challenges in getting it right the first time.

There are many considerations when building a passive optical network (PON) that will enable the flexibility of easy migration to accommodate next generation requirements. Practical considerations, based on informed decision-making, provide the foundation for a cost-effective transition between legacy and future access technologies.

For FTTP networks, the advent of Gigabit passive optical network (GPON) further validates the need for network flexibility. GPON promises to dominate the access market by allowing service providers to deliver high speed, high bandwidth and packaged services to business and residential customers.

The importance of future-proofing networks will pay huge dividends to service providers faced with a migration to GPON. Those who make informed choices in building a flexible, interoperable, reconfigurable network will reap substantial benefits in the move to GPON. *Regardless, the motivation to make the early move to GPON is compelling and ensuring your network is ready not only in the Outside Plant, but in the Central Office as well, is absolutely crucial.*

GPON-Readiness in the CO

the CO, flexibility is the key. A network should never be built for a single application. Rather, it should be built with long-term flexibility in mind so that the network can adapt to changes in equipment and technology. A cross-connect network offers the necessary flexibility for configuration points. The output connector side is an important consideration and should include high quality connectors that can accommodate higher power. The angle-polish connector will offer both the flexibility and adaptability as optical output levels increase to support the migration to GPON technology.

Cable management is also critical in the CO, particularly bend radius protection. Serving an increased number of subscribers

requires careful consideration of loss budgets and physical fiber management techniques that protect the optical signal from any degradation. In summary, the CO considerations for GPON are easily boiled down into three words – flexibility, quality, and protection.

Flexible Networks = Simplified Migration

While service providers strive to meet the challenges of upgrading their FTTP networks to GPON, solution vendors should seek to make any migration as seamless as possible. Flexibility is always the key to achieving upgrades as easily, quickly, and painlessly as possible – and will likely be the differentiator among the service providers of the future. Although seeing into the future may not be an exact science, making informed decisions for your CO based on the most flexible and reliable designs available cannot be overemphasized.

The inevitable need to migrate to GPON technology is today's reality – with NGPON (next-generation GPON) already being envisioned for the near future. With a little thoughtful planning in the CO as well as the outside plant, service providers will ensure their network has the flexibility to make a smooth, cost-effective migration to GPON, NGPON and whatever access technologies tomorrow may bring.

Ben Dierker Receives 2006 Walker Top Performer Award

Tom Kane, Vice President of Sales, presented the Walker Top Performer Award at the Walker and Associates Annual Sales and Marketing Awards Dinner, held in November at the Hyatt Regency Pier Sixty-Six in Fort Lauderdale, FL.



Ben Dierker was this year's Top Sales performer recipient. Tom described Ben as someone marked by

consistency, hard work, and a mindset that challenges the process but always does the right thing. Ben's territory is the Pacific Northwest, in addition to California, Nevada, Hawaii and Colorado.



Ben Dierker, center, the 2006 Sales Person of the Year, flanked by Tom Kane, VP/Sales (L), and Derek Granger, Director/West Coast Region Sales (R).

Ben acknowledged that since beginning a career with Walker about 7 years ago, receiving this award has always been one of his goals. He also expressed appreciation to his inside team, his peers, marketing and Walker management.

In addition to a beautiful trophy and a trip to a 2007 national industry trade show of his choice, Ben received the coveted red blazer as a token of his award. The Walker red blazer is

a standing tradition for this award winner, and represents a strong sentiment for Walker's founder, **Chris Walker**, who made the red wool blazer his trademark when he first called on customers in the early 1970's. Walker's website visitors can view a personal account of the story of the first red blazer, as recorded by Chris Walker prior to his passing in 2000. Visitors to our corporate headquarters in Welcome, NC, are greeted in the lobby by one of Chris's red blazers, which was donated by his widow, **Virginia Walker**, who now serves as company CEO.

In addition to expressing appreciation to **Lisa Smiley** and the Marketing Team for their contributions to a successful sales year in 2006, **Tom Kane** also noted special thanks to Walker's vendor partners for their extended loyalty, confidence and a lasting partnership. It was a fitting tribute to Chris Walker's mantra - **"People, managers, the supplier, the customer are Walker. There can be nothing else!"**



Chris and Virginia Walker Photo, courtesy of the Walker Family

Intelligent Networking Solutions

from Multiservice Access to the Optical Core

By Sycamore Networks

Intelligent networking products from Sycamore Networks combine advanced technology with proven resiliency and performance in real-world deployments. They protect profitability while creating new revenue opportunities, and reduce risk while enabling change. Sycamore's comprehensive portfolio extends across the network, from multiservice access and regional backhaul to the optical core.

Multiservice Access

Network access products perform critical bandwidth management functions, such as grooming, access concentration, and circuit provisioning, in a range of transmission network applications. Sycamore network access products include scalable DNX multiservice cross-connects, OM optical multiplexers, BSG-1u and DNX-1u base

station access gateways, and ENvision Plus network management software.

Optical Switching

Intelligent optical switches deliver industry-leading capacity, scalability, and modularity, with best-in-class ring and mesh protection options for optimal performance in any network topology. Sycamore optical switching products include the SN 3000, SN 16000 SC, and SN 16000 intelligent optical switches, SILVX network management software, and SILVX InSight network design and analysis software.

Pragmatic Solutions

Intelligent networking solutions from Sycamore Networks enable fixed line and mobile network operators to optimize service bandwidth, streamline network operations, and deploy new services – while reducing costs and improving reliability.

In fixed line networks, concurrent support for traditional and next-gen networking functions dramatically improves network performance at key integration and aggregation points – and reduces costs. Advanced intelligence enhances mobile network migration from 2G to 3G and beyond, enabling just-in-time

expansion and market-leading mobile voice and data services.

The interoperability, capacity, and intelligence of Sycamore solutions play a key role in supporting mission-critical communications for the US government. And uncompromising reliability and remote management capabilities support gradual modernization for large utility networks, with an appropriate focus on survivability and security.

From access to core, in demanding, real-world network environments, Sycamore products deliver better solutions to diverse application challenges – and have been for years. Our technology empowers networks that serve millions of users and generate billions in service revenue. Our customers are respected worldwide for their business success as well as their networking innovations.

The Sycamore customer service philosophy focuses on our customers' priorities. We strive to get network investments into service quickly, tailor service level agreements to business needs, and supply training programs that help customers extract maximum value from their capital investment and minimize operating expenses.

A Revolution in Evolution - IPTV

By ADTRAN

Service providers are faced with optimizing their existing network infrastructure to support advanced services without stranding existing legacy services. Historically, wireline services have been delivered across disparate networks, each with its own infrastructure and expense. However, the maturation of industry standards related to Internet Protocol (IP) is enabling the convergence of these disparate networks across a unified network architecture. While enabling this convergence can be difficult, it is clear that service providers must drive toward increased subscriber revenues

through the delivery of enhanced broadband services (like IPTV) while simultaneously driving operational cost out of the network.

The ADTRAN Total Access® 5000 is designed to support this network evolution. It is a carrier class multiservice access and aggregation platform that bridges the gap between existing and next-generation networks. The Total Access 5000 supports emerging services such as IP Television (IPTV) and Voice over IP (VoIP) across both copper and fiber interfaces while simultaneously supporting legacy services including basic POTS and DS1. This broad range of services is possible because of the pure IP/Ethernet core of the Total Access 5000. All incoming services are converted to packet and transported across the backplane, creating a scalable service delivery model for next-generation services without stranding existing services.

The Total Access 5000's multi-service

architecture allows the deployment of an advanced packet network infrastructure that is capable of delivering a host of services including POTS, DSL, PON and Ethernet across a pure Ethernet core. This robust packet network architecture allows service providers to use the Total Access 5000 to economically address both legacy and next generation services while providing a seamless migration path towards a converged network architecture.



Creating a Cost-Effective Plug-and-Play FTTP Architecture

By Randy Reagan, FTTP Program Manager, ADC

Today's FTTP network planners must build flexible and reliable architectures at the lowest possible cost. New hardened connector technologies, coupled with Multiport Service Terminals (MSTs), accelerate plug-and-play deployment with reduced long-term operational expenditures.

Plug-and-play architectures are more technician-friendly by reducing the need for highly-skilled technicians to perform installation tasks. Reducing the number of splices, technicians and crews required to turn-up services reduces installation, maintenance and operational costs and makes deployment faster and easier.

Hardened Connectors are Key

Hardened connectors are designed and tested for Outside Plant (OSP) applications. They withstand harsh OSP environments and provide the same reliability and performance of spliced networks--with added benefits of lower installation costs, greater flexibility and easier access.

They are watertight and can be installed on the external surface of an enclosure, providing easy access in above- or below-ground installations. Each connector under-

goes tests designed to ensure high-performance and reliability in OSP applications and must meet Telcordia GR-326, GR-771 and GR3120 standards. The tests expose the connector to thermal-aging, thermal-cycling, humidity-aging, humidity condensation cycling and post thermal cycling.

The connector also undergoes vibration testing and mechanical stress tests including flex, torsion, proof and transmission with applied-load. Additional tests include impact and crush resistance to simulate incidental forces and water submersion and freeze-thaw testing. Additional optical monitoring tests verify that the connectors can maintain the required insertion loss and reflection performance during and after exposure to harsh environments.

Finally, products are tested for extended time periods while subjected to specific harsh conditions. The result is a hardened connector that withstands exposure to any OSP environment.

The Plug-and-Play Solution

Hardened adapters are mounted on enclosures at the street outside the residence and at the optical network terminal (ONT) on the side of the residence. A hardened drop cable is used to connect the enclosure and the ONT.

The drop cable is a factory-connectorized assembly with hardened connectors on each end. Each connector and adapter is protected by a protective cap until put into service. When connected, the caps are removed to enable the inner connector components to be aligned to complete the connection. Factory-connectorized drop cables enable non-technical field installation of the cables, eliminating the need for splicing or highly-

skilled technicians.

Finally, an arrow on the connector aligns with a notch on the adapter, ensuring precise alignment of the connector into the optical port, providing a vital method for ensuring high-reliability and speed when mating a connector to an adapter.

The Multiport Service Terminal

The other vital element is the MST that typically resides between the FDH and the subscriber. The enclosure is terminated and sealed in the factory with cable stubs and hardened adapters on the exterior surface. It is designed for outside environments and installed in hand-holes, pedestals, on poles, on overhead cable or secured to any flat surface.

MSTs are connected to the network by splicing the stub cable to a main distribution cable. This splice is achieved without having to access the enclosure. The versatile mounting schemes adapt to most installation techniques and are designed to withstand extreme temperatures and humidity.

MSTs are available in two-, four-, six-, eight-, or 12-port configurations and accept drop cables terminated with hardened connectors. The factory-installed terminations of the drop cables and MSTs eliminate splicing and can be installed by less-skilled technicians, again saving installation costs and enabling rapid service turn-up.

The plug-and-play approach to an FTTP infrastructure--possible by factory-connectorized MSTs and drop cables terminated with hardened connectors and adapters--results in significant cost savings compared with traditional spliced architectures.

Powering the Broadband Networks

By Newmar

Newmar's hot swap rectifier systems, the Unity and Centurion, are increasingly selected to supply 48 volt DC power to broadband networks. The wireless networks utilize point-to-point microwaves to transmit signals for internet, emergency radios, security cameras and other critical data transmitting devices. The rectifier systems, integrated with their Battery Module series creates a comprehensive DC power system providing 48 volts along with an integrated battery back-up function for ride through when AC power is down.

The Unity Rectifier System, model UR-48-3, has a rackmount shelf that accepts up to 3 slide-in rectifiers allowing for N, N+1, and N+2 configurations for increased system reliability, ideal for critical communication systems. The hot swap Unity Rectifier System produces 3



Unity Rectifier System with Battery Module Series Power Broadband Networks

amps per rectifier at 48 VDC. The shelf chassis occupies only 1 RU (1.75") of rack space.

The Centurion Rectifier System, model CR-48-10, produces 10 amps per rectifier that slides into a shelf that accepts up to three rectifiers, also allowing for N, N+1, and N+2 configurations. The shelf is 2 RU (3.5") of vertical rack space.

The Battery Module shelf eliminates the need to source batteries, trays, cables, terminals, lugs, and circuit breaker since they are all included. The shelf accepts up to two 48 volt 5-amp hour modules, thus; fully populated provides 3 amps of back-up power for approximately 2 hours.

Newmar offers a broad range of DC power products with an earned reputation of high reliability and quality in powering wireless networks in Broadband, Microwave, Cellular, and Land Mobile applications.



- Auxiliary Framing
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Established in 1949, Newton Instrument Company is a leading manufacturer of Telecommunications Structural Components. We provide a product line that covers all structural and support needs from the smallest closet LAN application to the largest seismic Zone 4 central office for both copper and fiber. Our Zone 4 racks and cabinets are tested and certified by independent labs. From product design to office layout, our Customer Support Team is ready to help you with your structural needs.

Made Right When You Need It, Driven To Be Better!

Walker and Associates Recognized by Vendors at Fort Lauderdale Meeting

It was a star filled evening high in the sky for the annual Walker and Associates, Inc. awards banquet held in Fort Lauderdale, Florida. Walker's sales and marketing teams, as well as Vendor Success Partners, were on hand for this event to recognize the 2006 outstanding achievers. The evening began with cocktails, a short invocation, and then dinner followed by the awards presentation.



marketing personnel for their outstanding work in 2006. Those include **Jennifer Beck, Ashley Jobe, Donna Nichols, Randy Turner, and Tracy Vogler.**

Finally, Walker and Associates won the following awards: # 1 Distribution Partner for ADTRAN in Wireless Sales and Competitive Service Provider Sales; Top MVP Partner for Carrier Access; # 1 Distribution Partner for Fujitsu; and the 1st Platinum Award winner for Symmetricom.

(Note - ADC was not in attendance due to a scheduled date conflict.)

Walker Marketing Awards Presented at Annual Meeting

Walker and Associates presented the 3rd Annual Hank Ford Award to a VSP Vendor Account Manager that met and exceeded certain criteria. The award is in honor of **Hank Ford**, formerly with Symmetricom, who died of cancer in 1993. **Lisa Smiley**, Vice President of Marketing, presented the 2006 award to **Pete Linehan** with Carrier Access, who graciously accepted the award and was truly honored.



Pete Linehan Receives the Hank Ford Award from Lisa Smiley

Lisa Smiley also presented the President's Citation award to Product Marketing Managers who had outstanding performance and achievement in 2006. The awards were presented to those who went "above and beyond goals set for the year". Awards were presented to Donna Nichols, Jennifer Beck, and Tyson Philyaw.

VSP Awards

The first awards presented were from Walker's Vendor Success Partners. Those present for the evening were **ADTRAN, Carrier Access, Fujitsu, Newton Instruments, Symmetricom, Telect, and Tellabs.** It was an exciting evening for those key partners to present awards to the top Walker performers in 2006. Among those recognized from outside sales were **Ben Dierker, Bill Durham, Rich Ferrante, Bob Hodowanic, Eddie Lester, Lynn Soldano, and Rick Walker.** Walker's key partners also recognized several inside sales members including **Kevin Foster, Sherry Fritchley, Lee Ann Gilley, Joyce Needham, and Debbie Stogner.** In addition, several VSP partners felt it important to acknowledge key Walker



Z H O N E

Complete Access Solutions

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- FTTH • Gig-E
- xDSL • T1
- Ethernet





New Networks: New Ways

Walker and Associates carries the complete portfolio



FlexDSX® and RZX-3 Digital Signal Cross Connect Systems

ADC's FlexDSX and RZX-3 systems allow technicians to patch, terminate and rearrange DS1 and DS3 circuits. FlexDSX's modular chassis accommodate four-port cards with dual monitor ports that enable bi-directional monitoring. The rear cross-connecting RZX-3 features mid-size jacks and BNC connectors, and accommodates 24, 32, or 36 circuits per chassis in 19" or 23" racks.



Megabit Modems

Megabit Modems provide a wide range of LAN extension solutions for campus applications such as shopping malls, office complexes or apartment complexes. In addition, Megabit Modems offer the ultimate in versatility and compatibility, featuring full rate ADSL, SDSL and G.SHDSL support.



LoopStar® SONET Access and Transport Solutions

ADC's LoopStar SONET Access and Transport product family allows service providers to cost effectively provide TDM and Ethernet business services to enterprise customers from a single platform. These solutions include the LoopStar 800 Next-Generation SONET Access System, LoopStar 1600 SONET Multi-Service Transmission Platform, and LoopStar 810 CLE SONET Access System, designed specifically for Customer-Located Equipment (CLE) applications.



LoopStar® Next Generation Ethernet Access and Transport Solutions

The LoopStar 700 Ethernet product family allows carriers and service providers to cost-effectively aggregate, deploy and manage Ethernet and TDM services for a broad range of customer applications. This portfolio of Ethernet multi-service access solutions is optimized for whatever type of network facility is available or is the most cost-effective solution for a particular customer application.

The foundation on which voice, video and data services exist is the key to network effectiveness. ADC provides network infrastructure products that are innovative, flexible and cost-effective. Walker and Associates carries the complete line of ADC's field-proven solutions. Supercharge your network today. Visit www.walkerfirst.com or call 800.WALKER.1



of ADC's industry-leading connectivity products.

OmniReach™ Access Terminals and Distribution Hubs

ADC's Access Terminals and Distribution Hubs provide a robust, user-friendly, and cost-effective platform for delivering fiber optic service drops in FTTP deployments. For both single-family homes, as well as multiple dwelling units, ADC's OmniReach solutions provide physical protection, long-life reliability, superior fiber management and an aesthetically appealing appearance.



OmniReach™ Multi-Port Service Terminal

The OmniReach Multi-Port Service Terminal (MST) incorporates hardened connector technology that is designed to withstand the rugged outside plant environment. These uniquely designed hardened connectors are factory-terminated and environmentally sealed for use in drop cable deployments in optical access networks. The MST is available in 2, 4, 6, 8 and 12 port versions and can be mounted on a pole, pedestal, hand hole or strand.



TracerLight™ Connector Identification System

ADC's innovative TracerLight Connector Identification System offers a quick and accurate method of identifying the termination points of optical patch cords. TracerLight allows technicians to visually trace individual patch cords from one end to the other without pulling or affecting the patch cord. This dramatically minimizes the risk of taking the incorrect fiber out of service and improves system turnup speed and accuracy.



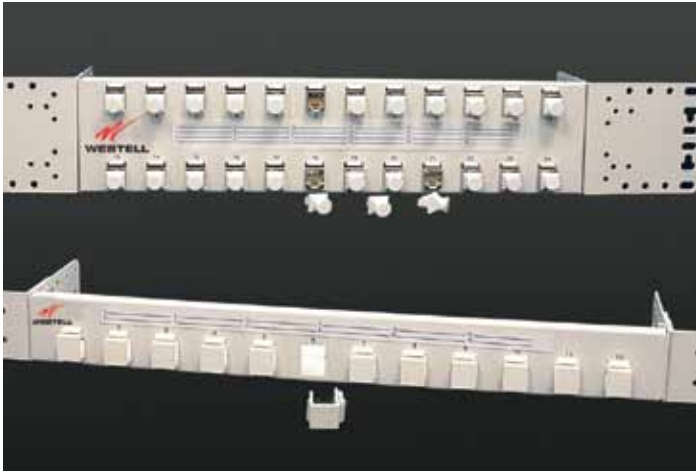
FiberGuide® Raceway Systems

As fiber densities continue to increase, so does the demand for increased cable management capacity and protection. FiberGuide raceway systems protect and route fiber throughout the facility. ADC is pleased to introduce the new 4x24 inch size, which is the unrivaled solution for the highest density applications.



VirtuaEdge™ Enclosure Series

. . . to the **EDGE**



Virtual Edge Connectivity Panels

Westell's line of Ethernet connectivity panels are used to provide a standard interface for a variety of telco services that can be delivered to end users from a 19" or 23" relay rack or data cabinet, or in a wall-mount configuration. These panels can be used to terminate any combination of 10BaseT, 100BaseT, fiber, COAX, or other services by selecting the proper coupler interface for any position. The modular concept of interchangeable couplers on the mounting brackets gives network service providers the ultimate flexibility to deliver all their Ethernet services via a single VirtualEdge connectivity panel. This panel is a simple, sturdy, and flexible mechanical platform used to terminate high-speed Ethernet services in any combination.

Features:

- Flexible, Low-Cost Ethernet Termination Panels
- Provides Multiple Media Options
- Easy to install
- Shielding and Grounding designed into the chassis
- Facilitates system integration with ability to combine fiber and CAT5e
- Eliminates the need for multiple panels
- Pay as you grow using standard Keystone couplers
- Programmable DSP-based CODEC support

Virtual Edge Enclosure

Westell's VirtualEdge Enclosure is a secure access Ethernet hand-off solution that offers flexibility to handle copper, coax, and fiber connectivity. It provides for up to 6 customer hand-offs. The VirtualEdge Enclosure's unique swinging bulkhead design minimizes the mounting footprint while giving both network and customer technicians adequate room for making terminations and managing cables. These features make the VirtualEdge Enclosure ideal for Fiber-to-the-Premise deployments and Ethernet services in multi-tenant buildings where tenants have access to common telephone facilities.

Features:

- Secure Customer Hand-off
- Built-in cable management spool
- Handles CAT5e, COAX, and Fiber
- Scalable design
- Utilizes the same couplers as the VirtualEdge Panels
- Installation-friendly design with mix and match coupler option
- Pay as you grow with standard Keystone couplers
- Minimal space on wall
- Cable access via 5 rubber grommets, 3 on the Network side, 2 on the Customer side
- Designed to allow expansion by mounting adjacent VirtualEdge Enclosures together



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Symmetricom's Next-Generation Timing and Synchronization



Primary Reference Sources

- Best in class PRS – Exceeds ANSI, Telcordia, ITU and ETSI standards
- State of the art technology – Cesium, Rubidium and BesTime®
- Full PRS diversity – Cesium (autonomy), GPS (rooftop, through the wall or through the window)
- PackeTime™ enabled



TimeSource 3500



TimeGPS



TimeCesium

Building Integrated Timing Supply

- Scalable to synchronize 40 to more than 1400 network elements
- Fully intelligent and software manageable
- NEBS level 3 certified
- PackeTime™ enabled



TimeHub 5500



SSU 2000

Mini BITS (Edge Distribution)

- Scalable to synchronize up to 64 network elements
- Fully protected – universal inputs and outputs
- Best in class performance – BesTime® and SmartClock™ technologies
- Configurable as stand alone PRS with integrated GPS
- PackeTime™ enabled



TimeProvider

Sync Management

- **Fault Management**
Alarm escalation and automated actions
- **Configuration Management**
Dynamic configuration and upgrade
- **Accounting Management**
Trend analysis and inventory management
- **Performance Management**
Performance characterization
- **Security Management**
Secure web access – anywhere, anytime



TimePictra



TimeScan

As wireline, wireless and cable networks evolve, timing and synchronization technologies are addressing the new requirements and Symmetricom is leading the way. Visit ngn.symmetricom.com/walker to download valuable application briefs.

The Symmetricom logo, featuring a stylized blue and black swoosh above the company name "Symmetricom" in a bold, sans-serif font.

Perfect Timing. It's Our Business.

Compact Next-Generation Transport Switching

The Tellabs® 5500 NGX transport switch

offers unprecedented scalability in a next-generation bandwidth management system. With a fully non-blocking multi-bandwidth

architecture, the Tellabs 5500 NGX system combines cross-connect, ADM and data switching capability — all designed to grow with your business.



Features & Benefits:

- Save up to 30% in capex and opex by integrating bandwidth management and transport functions.
- Unprecedented scalability and non-blocking performance for both TDM and data traffic management.
- New high-density DS3 module increases former DS3 capability 3-fold per module.

“A TDM to VoIP Migration Strategy is Necessary to Address the Small-Medium Business Customer”

By Dennis Gatens, CTO Converged Access, Carrier Access Corporation

With the accelerating evolution of the global voice communications infrastructure from TDM to IP, the importance of a well-planned, detailed TDM to VoIP migration strategy for hosted services cannot be overlooked. Whether the service is branded as a VoIP service, or transparent to the Small-Medium Business (SMB) customer, there are considerations for both the customer and service provider. Today, integrated T1 services offer the SMB customer a bundled service for both TDM voice and IP data. However, it is not a converged IP service; thus the advantages of VoIP and a converged IP service offering are not realized.

Advantages include: 1) a shared bandwidth resource that provide statistical multiplexing efficiencies for voice, 2) simplified move, add and changes (MAC), and 3) the integration of business applications such as voice mail, billing systems and email. With a converged IP service offering there is the opportunity to offer new services that enable customer retention and new revenue generation.

Additionally, the service provider with a migration offering can realize reduced capital expense and minimized service disruption.

The importance of a planned network and service migration, from both the service provider and customer's perspective, cannot be underestimated. Key areas for consideration include: Provisioning and operation of a converged IP service; Capital investment protection; QoS requirements; Network element interoperability; Sales team and technician training; VoIP peering.

Case Study: A Successful Migration

TDS, a strategic Carrier Access customer, with an installed base of thousands of Adit 600 platforms that are configured with CMG modules, is close to flipping the switch from integrated T1 to converged IP services. TDS understood the value of the Adit 600 migration capabilities when it began deployment to deliver integrated T1 voice and data services with the CMG configured as a router only.

Very soon, with a software download, deployed Adit 600s will be re-configured as converged IP business gateways. Their network migration follows a period of network planning, platform evaluation, and interoperability and performance testing to insure that the transition is as seamless as possible.

The effort towards network readiness of a converged IP infrastructure and service offering should be transparent to a customer's existing service experience. But once the

customer is involved it is critical that the impact to service is minimized.

Preserving the existing equipment at the SMB customer site(s), to the greatest extent possible, contributes to profits, minimizes the capital expense and service disruption to migrate a customer's service. Minimizing service disruption and perceived concerns associated with a new technology will be a positive factor for SMBs making a service provider selection. The Adit 600 enables such a cost-effective migration.

With an installed base of 80,000+ units, the Adit 600 is widely accepted as the standard for carrier class multi-service terminals. The Adit® 600 CMG module enables high-capacity converged IP service delivery with multi-T1/E1 (or Ethernet) WAN access while supporting a TDM to IP migration strategy for service providers and the small-medium business customer. Scalable to 40 analog ports to address SMB, central office and MTU/MDU applications, the Adit 600 delivers carrier-class hosted PBX and IP Centrex plus data services. The Adit 600's unique ability to simultaneously support traditional TDM and IP infrastructures enables a planned and seamless migration to IP voice, video, and data services, while preserving investments in existing infrastructure. Field proven with extensive interoperability experience, Carrier Access and our industry-leading gateway, softswitch and solution partners work together to deliver a seamless migration to access advanced IP services.

Walker and Associates Award Winners Receive Recognition

The annual Walker Holiday Dinner was held on December 11th, 2006 at the largest state-of-the-art winery in North Carolina, Childress Vineyards. The night was centered on recognizing Walker's associates for their hard work throughout the year.

Two Sales awards were presented by **Tom Kane**, VP of Sales, and **Scott Stoll**, Director of Inside Sales. The Secondary Market Performance Award went to **Brandi Greene**. The Inside Salesperson of the year went to **Debbie Stogner**.

Mark and Rick Walker presented the next two awards. Winners were nominated by their colleagues, and final decisions were made by Walker's Board of Directors. The "Al Stokes Customer Care Award" went to **Heath Robertson**, the company's Systems Administrator. The "Chris Walker Award", presented in memory of the founder of Walker and Associates, went to **Randy Turner**, Marketing Communications Manager.



Debbie Stogner receives the Inside Salesperson of the Year Award

Heath Robertson receives a standing ovation from his peers

FUJITSU

When Speed Matters To Your Customers



MicroMAX-SOC is a complete standalone base station, sharing the same system architecture as our tried-and-tested ASWipLL product line. The MicroMAX-SOC base station is highly modular in design and consists of two main components: the all outdoor Base Station Radios (BSR) and the indoor Base Station Distribution Unit (BSDU), or single channel Data Adaptor. Each base station site could contain up to 12 BSRs, depending on the amount of available spectrum. Each BSR is connected to the BSDU via a 100BaseT interface operating over a CAT5 cable which carries both data and power.

MicroMAX-SOC is designed to support lower density, rural broadband access, enterprise applications and DSL in-fill scenarios in both licensed and unlicensed bands.

One of the key features of the MicroMAX-SOC BSR is that it requires less than 28W power, making it ideally suited for line powering by using SHDSL lines thus enabling the economic delivery of broadband wireless services to communities beyond the reach of DSL.



The EasyST is a physically compact WiMAX CPE designed to be deployed alongside the end user's PC. With dimensions close to the size of two CD jewel cases, EasyST looks great when sitting on a desk or bookshelf.

The EasyST is designed to be installed by the end user, using a simple-to-use but sophisticated user interface to enable optimum positioning without connecting to the user's PC. This helps improve service availability and reliability while increasing service speed and reducing network load. Three different deployment models are supported: using the integral 7dBi antenna, using together with the optional Wi-Fi expansion (thus locating the EasyST by a window) or using with the stick-on-the-window external antenna. In all cases, a visual indication system informs the user when the optimum location for RF reception and transmission is achieved.

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*Stop by Booth 5149 At CTIA Wireless March 27 - 29 To See Fujitsu
WiMAX Products and Solutions*

Telect: Connecting and Powering Global Communications

By Telect

For a quarter-century, Telect has provided the communications world with connectivity and power product solutions — systems that help users build efficiency, effectiveness and versatility into network applications.

In 2007, Telect will celebrate its 25th year in business. With products deployed worldwide, partners strategically located around the globe, and customers throughout all types of communications networks, Telect is positioned to support the growing needs of communications service providers well into the future.

About Telect

Founded in 1982, Telect engineers and manufactures a comprehensive range of physical layer network products, all of which are available through Walker and Associates.

- Copper connectivity, patch panels and systems – DSX-1, DSX-3 and VF analog products
- Optical connectivity, patch panels and systems – Patch panels, distribution frames, splitters and FTTx distribution solutions
- Power distribution, protection and management – Fuse panels, circuit breaker panels, battery distribution frames, and fully engineered power systems
- Equipment racks, cabinets and hardware – An industry-leading range of configurations, with custom solutions and loaded systems available
- Cable management systems – Trough-based and on-frame solutions
- Cables, connectors and accessories – Optical and copper cables, as well as all the accessories required for physical layer connectivity
- With products and solutions optimized for telecom networks, enterprise/IT facilities, private networks, and elsewhere, you'll find Telect at work in virtually all types of communications applications worldwide. Headquartered in Liberty Lake, Washington, Telect operates facilities worldwide.

Service with Integrity

Beyond products, Telect's heritage of service and innovation, along with a business model driven by entrepreneurialism, energy and ethics, positions us as a leading connectivity and power solutions provider for the global communications industry.

Core values, in place since day one, still drive Telect's business and shape customer relationships. With Walker and Associates positioned as a Telect Master Distribution Partner, you can rest assured that your business partnership with Telect will be guided by ethics, solid stewardship, and a sincere dedication to service.

Visit Telect.com

Want to learn more about Telect? Visit Telect.com. You'll find detailed product information, more about our global manufacturing and service facilities, solutions-based resources, contact information, and much more. Access product documentation and live online support, view Telect-recommended solutions, or just learn more about Telect. It's all on Telect.com.

Tellabs Cablespan 2300 Hybrid Fiber Coax Solution

By Tellabs

The Tellabs 2300 Telephony Distribution System's Host Digital Terminal (HDT) terminates T1 facilities using the industry standard GR-303 protocol for voice traffic. Transceivers within the HDT provide system management and traffic bandwidth to the Tellabs 2300 system's Remote Service Units (RSUs) that provide the voice interfaces on the customer premises. The Tellabs 2300 telephony distribution system series includes:

- The Tellabs 2330 Remote Indoor Service Unit (RiSU) delivers integrated telephony and cable television to the home or small business over existing hybrid fiber-coax (HFC) networks.
- The Tellabs 2340 Remote Service Unit (RSU) delivers integrated primary-line



telephony and cable television services to the home or small business over existing two-way hybrid fiber-coax (HFC) networks.

Customer Benefits:

- Grows revenue and rapidly achieves positive cash flow by providing life line telephony service over an existing HFC network coupled with continuous cost improvements in headend and CPE equipment. Arms MSOs with a competitive service offering to gain market share.
- Highly cost-effective to deploy with scalable "pay as you grow" architecture that enables MSOs to align capital expenses with revenue streams.
- Reduce customer care, maintenance and technician costs to minimize operating expenses with the Tellabs 2300 Telephony Distribution System and the Tellabs 2390 Element Management System that work together provide a myriad of features.
- Product Features:
- Compact, modular, scalable architecture. Start as small as a one-shelf, 30-customer system and incrementally expand to four

shelves and 3,960 customers per HDT as the subscriber base grows.

- The fault management, traffic statistic collection, surveillance, and remote diagnostic capabilities of the Tellabs 2390 EMS enable the MSO to proactively manage the network from a centralized location.
- Multipoint Radio Frequency (MRF) sharing provides RF path protection and reduces call blocking to protect from loss of downstream or upstream and increase the Quality of Service.
- Best in Class RSU diagnostics help to remotely troubleshoot issues, resulting in fewer truck rolls and lower operating expenses.

Walker and Associates is the exclusive stocking distributor of the 2300 Cablespan RSU's.

Walker will be stocking the following parts:
85.2302-2c4n7
85.2302-4c4n7
85.2303-2n4ndc-x

NEWMAR[®]

Powering the NetworkSM

Newmar designs and builds DC power components and systems for a wide range of demanding network power applications.

Whether you need a complete system with rectifiers, batteries, distribution and alarms or an individual power component or accessory, Newmar manufactures a full range of high quality power products you can choose from.

Contact a Walker & Associates representative for your Newmar Power choices.



Modular Rectifiers



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Power Management System



DC-DC Converters



DC-AC Inverters



Distribution Panels

- Circuit Breaker
- Fuse

Battery Strings

Battery Trays

Relay Racks



All necessary components factory installed to meet your system requirements.



UPCOMING INDUSTRY EVENTS

For a complete listing of all national and regional shows, complete with booth numbers, dates, and participating vendors, visit us at www.walkerfirst.com and click on Upcoming Events. CU There!



January

WSTA Winter Plant Conf
Green Bay, WI

AFCEA West Expo
San Diego, CA

February

LTA/AMTA Winter Showcase
New Orleans, LA

GTA Showcase
Macon, GA

NTCA Expo
Orlando, FL

SCTA Expo
Columbia, SC

Minnesota Telecom Alliance Expo
Minneapolis, MN

March

UTC Region 3 Expo
Gainesville, FL

ITA Showcase
Portland, OR

FOSE Expo
Washington, DC

CTIA Wireless
Orlando, FL

April

RCA Wireless Expo
Las Vegas, NV

TTA Convention and Expo
Chattanooga, TN

CalComm Supplier Expo
Sacramento, CA

May

UTC Telecom 07
Austin, TX

June

NXTCOMM
Chicago, IL

“[The telephone’s] an amazing invention, but who would ever want to use one of them?” - Rutherford B. Hayes, 19th President of the United States

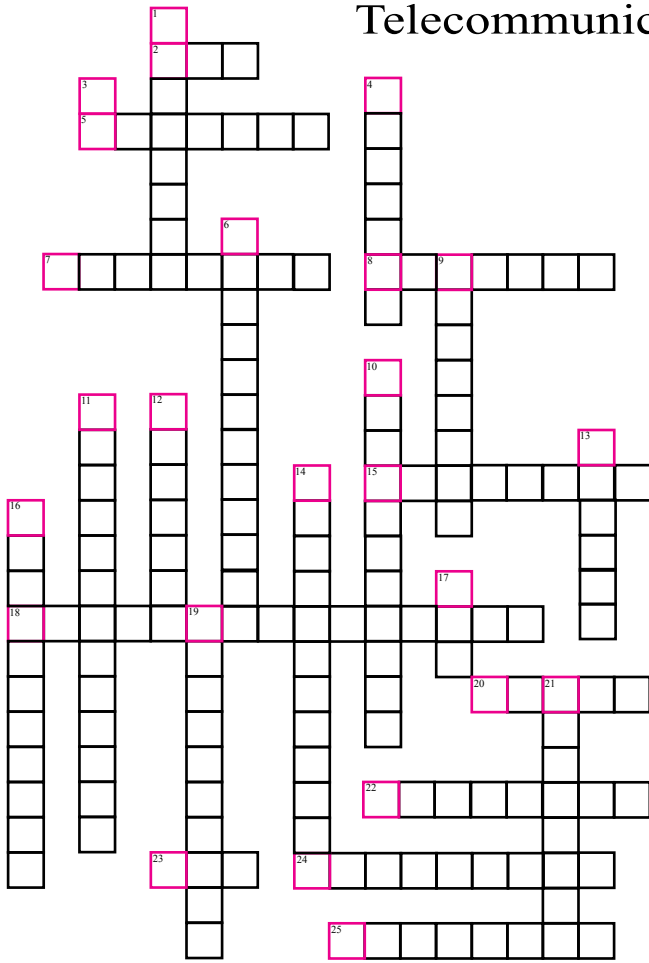


BRAIN FREEZE

by Ashley Jobe

Take a break and complete the puzzles below, then go to www.skinnywire.net/solutions to check your answers. You'll be entered into a drawing for a Magellan GPS System, courtesy of Walker and Associates. (All details and certain exclusions are on our website.)

Telecommunications. Networking and the Internet



Across

- 2 Value Added Network
- 5 Physical connection (or path) of channels
- 7 Front page of an "online brochure"
- 8 Can broadcast signals in all directions.
- 15 Total loss of power
- 18 You need this to get where you want to go on the World Wide Web
- 20 In database, a request for the retrieval of data.
- 22 Another term for the name of a channel going away from you.
- 23 Reduce a file.
- 24 Turning on or resetting the telephone system or computer.
- 25 A radio tap that takes its power from the phone line.

Down

- 1 When a circuit already in use is seized.
- 3 Cross connect.
- 4 Visual presentation of information
- 6 Hand-held radio transmitter and receiver
- 9 The point at which a telephone line ends, or is connected to other circuits in a network.
- 10 A really stupid word for typing.
- 11 A class of modem providing secure access.
- 12 A rapid change in an electrical signal.
- 13 A wire used to connect equipment and cable on a distributing frame.
- 14 Instrument used for measuring minute currents.
- 16 One term for a cellular phone.
- 17 Light Emitting Diode

Go to www.skinnywire.net/solutions to check your answers and enter our drawing for the Magellan Roadmate 2200T GPS System, courtesy of Walker and Associates.



There are three kinds of people in the world, those who can count, and those who can't.

DEJA-WHAT?

STUFF YOU MAY OR MAY NOT KNOW

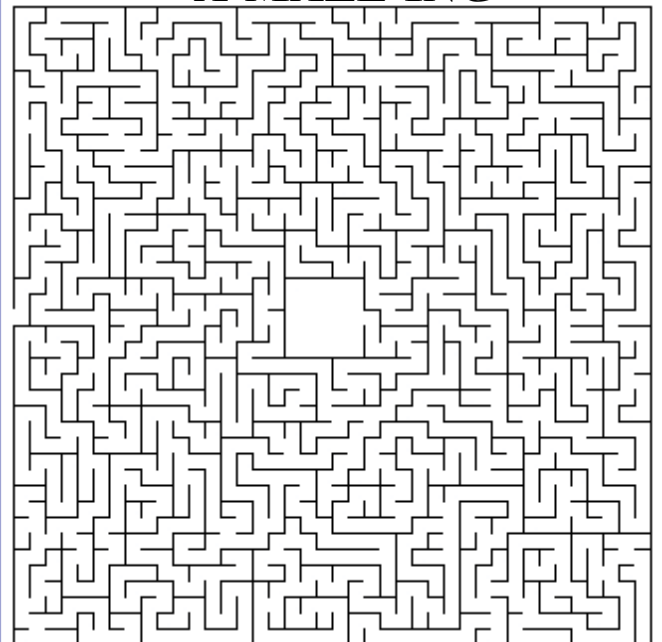
- Thirty-two percent of computer data loss cases are due to human error.
- The first U.S. president to use a telephone was James Garfield.
- As of 1978, there were approximately 4,500 pieces of equipment revolving around the earth. About 900 of these pieces were satellites, the rest were added bits of debris.

Q: The Treasury Department recently dropped its tax on long distance telephone calls that was established how many years ago?

A: **Is it?** A. 32 B. 11 C. 108 D. 57



A-MAZE-ING



Start in the middle..work your way out..

Walker and Associates Announces New Vendor Relationships

Walker and Associates continues its quest for strong vendor relationships that complement customer applications by announcing new relationships with these fine manufacturers.



Alcatel-Lucent provides solutions that enable service providers, enterprises and governments worldwide, to deliver voice, data and video communication services to end-users. Alcatel-Lucent offers the end-to-end solutions that enable compelling communications services for people at home, at work and on the move. Alcatel-Lucent is a local partner with global reach. The company has the most experienced global services team in the industry, and one of the largest research, technology and innovation organizations in the telecommunications industry.



Alvarion is the world's leading provider of innovative wireless network solutions enabling personal broadband services to improve lifestyles and productivity with portable and mobile data, VoIP, video and other applications. Providing systems to carriers, ISPs and private network operators, the company supplies solutions in both developed and developing countries. Leading the WiMAX revolution, Alvarion has the most extensive deployments and proven product portfolio in the industry covering the full range of frequency bands with both fixed and mobile solutions. With over 10 years of standards leadership and the industry's most extensive product portfolio covering the full range of frequency bands, the company provides solutions primarily for last mile access and mobile broadband. Other applications include voice and data backhauling, cellular feeding, cellular network extensions, community interconnection, public safety communications and private network connectivity.



AudioCodes Ltd. enables the new voice infrastructure by providing innovative, reliable and cost-effective Voice over Packet technology and Voice Network products to OEMs, network equipment providers and system integrators. AudioCodes provides its customers and partners with a diverse range of flexible, comprehensive media gateway, server and processing technologies, based on VoIPerfect™ - AudioCodes' underlying, best-of-breed, core media gateway architecture. The company is a market leader in voice compression technology and is a key originator of the ITU G.723.1 standard for the emerging Voice over IP market. AudioCodes voice network products feature media gateway and media server platforms, which function as core gateways or CPE voice gateways for packet-based applications in the wireline, wireless, broadband access, and enhanced voice services markets. AudioCodes enabling technology products include VoIP, CTI and call logging communication boards, VoIP media gateway processors and modules.

NetVanta Suite Provides Integrated Networking Solutions

By ADTRAN



The ADTRAN NetVanta portfolio includes all of the components necessary to effectively engineer solutions for today's Small to Medium Businesses (SMBs), branch office deployments, or multi-site networks.

These solutions address today's highest networking priorities, including bandwidth expansion, Voice over Internet Protocol (VoIP) migration, and network security. These powerful, cost-efficient products introduce a new level of value into network operations.

The NetVanta series of products includes a full-featured, cost-effective line of integrated switch-routers; managed Layer 2 Fast Ethernet, Gigabit, and Power over Ethernet (PoE) switches; IP access routers; and Internet security appliances. These products are the cornerstone of today's cost-conscious network architectures and deliver the network performance businesses need.

A New Level of Value

Not only do the NetVanta solutions offer up to a 50 percent initial cost savings over other brands, the savings continue well beyond the equipment. ADTRAN provides software upgrades and technical phone support for the life of the NetVanta product at no additional cost and without costly mandatory service or support contracts. In addition, ADTRAN products offer an industry-leading five-year warranty further enhancing the value of an ADTRAN purchase. ADTRAN Custom Extended Services (ACES) offers a variety of optional installation and maintenance services to

assist with one-time or ongoing support needs.

Simplified Integration and Migration Interoperability and Quality of Service (QoS) features are key when integrating new equipment into an existing network or migrating to a new technology such as VoIP. All NetVanta products are standards-based and easily integrate into multi-vendor environments and incorporate full QoS capabilities to provide prioritization for delay-sensitive applications such as VoIP.

Tolly Tested – ADTRAN NetVanta 3430 Outperforms Competition

In addition to a comprehensive product portfolio, the performance of ADTRAN NetVanta products have been validated by independent, third-party tests by the Tolly Group. Download your free copy of the reports at: www.adtran.com/tollyreport.



OPTI Series
OC-3/OC-12 SONET Multiplexers



Total Access® 1100 and 1200
Outside Plant DSLAMs



MX3 Series
Broadband Multiplexer Platform



MX4 Series
Wireless Bandwidth Manager



Total Access® 600/750/850 Series
Integrated Access Devices



NetVanta® 1000 Series
Managed Fast Ethernet Switches
Integrated Switch-Routers



NetVanta® 3000/4000/5000 Series
T1/T3 Access Routers
Multiservice Access Routers



TRACER® Series
License-Free Wireless Radios



Total Access® 5000
Multiservice Access Platform

Total Access 5000 bridges the gap between existing and next-generation networks and easily scales to support even the most bandwidth-intensive applications such as IPTV.

The ADTRAN Advantage

- More flexible service deployment
- Greater network interface options
- Increased bandwidth
- Centralized network management
- Voice and data convergence
- Single-vendor support and training
- Easier technology migration
- Total Access and other ADTRAN products are RUS accepted

Transform your network with ADTRAN®

ADTRAN solutions are widely deployed in the fiber, copper and wireless networks of this country's largest, most successful service providers.

Whether you need reliable broadband solutions to help you deliver next generation services or a full line of products for LAN-to-WAN connectivity, ADTRAN can help you build the network you need. For more than 20 years, ADTRAN has delivered dependable network solutions for the largest service providers and thousands of businesses.

From Gigabit Ethernet and SONET aggregation, to cost-effective OSP DSLAMs, ADTRAN has a solution to simplify your network migration. You can handle today's highest networking priorities, including bandwidth expansion, VoIP migration, and network security.

Lower your network costs without compromising quality or performance. For network connectivity you can count on, choose ADTRAN.

Call today to find out how ADTRAN and Walker can help you develop smarter, more efficient networks. www.walkerfirst.com
800 WALKER1



Puzzled?

Don't be! Walker and Associates has the solutions for evaluation and deployment of today's top revenue-generating technologies. Our full range of services, depth of manufacturer relationships, breadth of products, and years of experience help you navigate the twists and turns through the maze of next generation applications.

We Distribute Solutions!

- Distribution
- Customized Network Deployment Kits
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- EFI&T
- Engineering Support
- Installation
- Electronic Commerce
- Project Management
- Asset Recovery



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