ETHERNET

SUCCESS

# Carrier Ethernet -
## progress toward an all IP Network?

# RPR; The Simplicity of Ethernet

## Plus:
### Walker and Associates' 2007 Top Performer Award Recipients
### Walker's Newest Associates
### And More!

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Skinny Wire 08W.indd   2

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# Skinny Wire

# Contents

*"Equal Opportunity / Affirmative Action Employer m/f/d/v"*

The Skinny Wire is a bi-annual publication of Walker and Associates, Inc.

## Editor's Letter

### Oh, how times have changed...

**As I sit back** and reminisce about my younger years (as if I'm really that ancient now) I find myself thinking about the times that I sat in front of the television with dial knobs watching my favorite TV shows. Let's see, they were "The Brady Bunch", "The Cosby Show", "Three's Company", and who could forget "The Golden Girls"! Could you imagine Rose trying to figure out a Blackberry or a TREO in her day!! Oh, and remember the "Dukes of Hazzard"? Boss Hogg's job would have been much easier if he had a GPS tracking device attached to the "General Lee". Man, those were the good old days!

> **"The use of Ethernet has made today's technology seem advanced beyond our wildest dreams!"**

Now as I sit here today, some 20 years later, I realize just how much television shows have changed. The characters in each show went from using rotary telephones to these over intelligent devices we call mobile phones or PDA's today. Technology has become so advanced that shows like "Las Vegas", "CSI", "The Apprentice", and "House" couldn't be as big of a hit if it weren't for the contraptions the characters have handy to make themselves look more important than they really are. Also, for those of you who enjoy vehicle makeover shows like "Overhaulin" how could they be successful without the use of a mobile phone! How else would they pull off their usual shenanigans to make over some poor soul's rusted box of metal?

Just think about the television shows you watch today. Chances are you may be watching them on a personal computer, or wireless handset device. The use of Ethernet has made today's technology seem so far advanced beyond our wildest dreams! I can't wait to see what the future brings!

*Jennifer Beck*

jennifer.beck@walkerfirst.com

W hen your mother's name is Jeanette and aunt's name is Ethel, it isn't too farfetched to imagine your sister as Ethernet. But seriously, we are all embracing Ethernet delivery in our products and networks. In the last 20 years, Ethernet has become the most widely deployed local area network (LAN) technology. Ethernet has improved in the LAN environment to provide much higher bit rates on more readily available media such as unshielded twisted pair (UTP) cable. In addition to the progression in the LAN environment, the economics and support of class of service (CoS) make Ethernet attractive as a wide area network (WAN) transport technology. Most service providers are reviewing Ethernet as a technology within their networks for pure layer 2 transport or for offering IP VPN services.

Manufacturers have been providing technology to deliver Ethernet pipes to customer locations in the wide area network for a few years. From G.SHDSL copper terminations to media converters, we all found ways to deliver Ethernet services when an infrastructure did not really exist. These solutions are generally point to point and target one customer application at a time (see figure 1).



Point to Point Ethernet Service Delivery
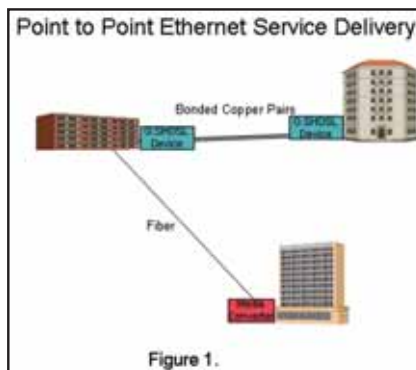
Figure 1.

As more customers and customer locations required Ethernet services, the platforms providing point to point Ethernet connectivity progressed into point to multipoint platforms (see figure 2). While these platforms continue as bonded G.SHDSL copper pair based solutions or media converter solutions, the scalability and manageability improved. The completion of the IEEE 802.3ah Ethernet in the First Mile (EFM) standard significantly improved the integration of Ethernet services into a carrier class network. Media converters and bonded copper solutions are important as an overlay network to provide service in low density applications.

In today's deployment plans, Ethernet service has become much more integral in the overall network design. Carrier class Ethernet switches and routers are being designed closer to the edge of the network. SONET ADMs are also becoming more Ethernet friendly with more efficient Ethernet over SONET mapping and ring topography. The

Carrier Ethernet

The Wise Guy*

network in figure 3 illustrates some of the carrier Ethernet services being delivered. The metro devices or the edge devices can be the latest generation SONET ADMs or optical routing switches feeding an Ethernet access or demarcation device. Ethernet access devices offer TDM circuit emulation to help the migration from TDM to Ethernet/IP. In a business application, the circuit emulation is handy if the customer is utilizing a T1 TDM PBX. The access device can provide this T1 through circuit emulation and the WAN connection through native Ethernet.

In summary, carrier Ethernet is arriving throughout our networks as the next transport and core technology. Ethernet deployment in service provider networks and as a service offering to the end customer will continue its rapid growth as long as we can still deliver our existing older TDM services for a while longer. As the current requirement for TDM services declines, we will roll on toward an all IP network.
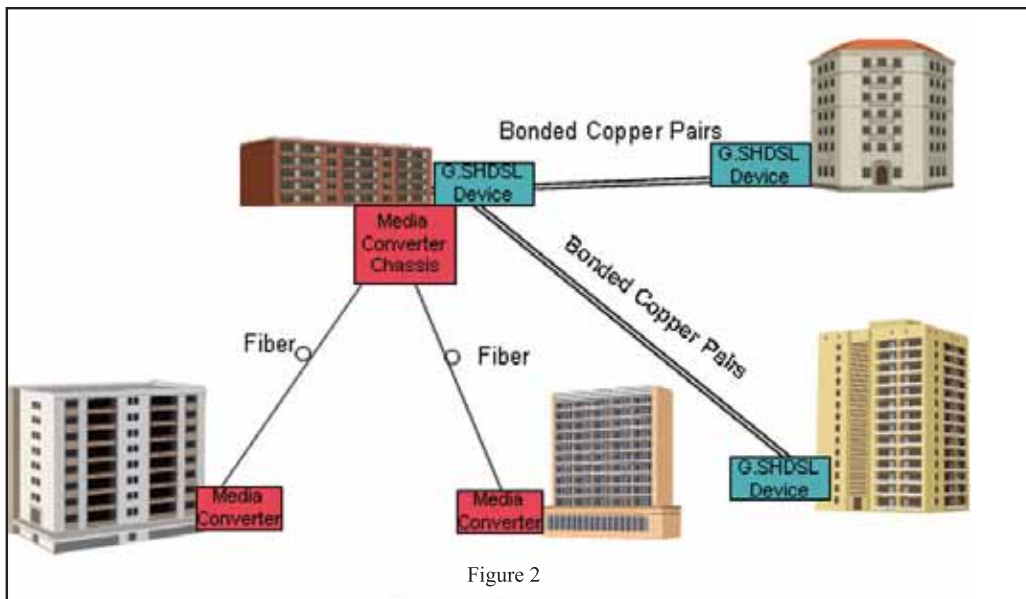


Figure 2

**\*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 3.

# Synchronization Planning for Next Generation Networks

**By Symmetricom**

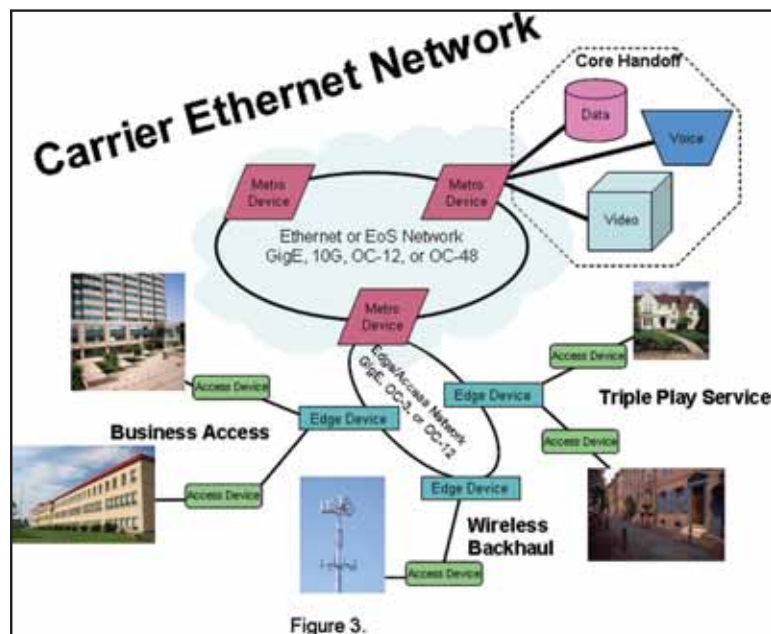One of the fundamental challenges of next generation network (NGN) services is the need to deploy timing at multiple points across the network. The traditional unified network synchronization model, a single clock in the Central Office, has evolved into a model in which different clocks exist in the core, metro, access, and subscriber domains. As migration to the NGN occurs, this new architecture is overlaid on existing synchronization services, increasing complexity and complicating the planning required for NGN service delivery.

Synchronization planning for NGN implementation should, therefore, begin by determining accurate synchronization budgets for applications/services and for the network.

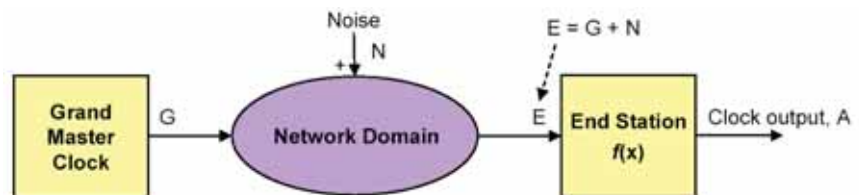## Budgeting for Application/Service Requirements

The application/service requirements budget specifies synchronization required for application or service delivery. To ensure NGN services and applications can be successfully delivered, the budget should be based on the stability and accuracy required by the most demanding application the network will be supporting.

To determine this budget, the basic timing/frequency requirement and specific service requirements of the application or service must be consid-

ered. For example, a billing/logging application might require time-of-day synchronization capable of ensuring <50ms difference between billing servers and <500ms between call setup and logging; support of an 802.16e mobile service will require 16ppb at the network interface and 50ppb at the air interface.



## Budgeting for the Network Domain

The network domain "noise budget" defines performance requirements for synchronization services, and indicates whether or not the network domain will support the necessary synchronization requirements. For Synchronous Ethernet/SDH/SONET, synchronization is embedded in the physical layer. Thus, it is stable and predictable in engineering packet-based timing protocols. However, the network synchronization planner must consider the impact on synchronization of timing packets going across the network at higher layers (L2, L3, L4) and of passing these packets through the queuing mechanisms of the network elements.

## Overall Synchronization Service Budget

Overall, an efficient noise budget allocation will reflect a pyramid structure. The CO is constrained to a minimal allocation consistent with well-established, cost-effective performance levels. The metro and access domains are allocated a percentage that enables real-world network edge applications, while

the largest percentage is reserved for the subscriber domain to enable the use of low-cost oscillators.

In the illustration below, successful service delivery depends on the output of the Grand Master clock (G) plus the network noise (N) meeting the application clock output requirements at A after it passes through the End Station.

Good planning is foundation of effective NGN implementations. As network timing grows more complex, good synchronization budgeting simplifies the integration of multiple clocks into the network infrastructure and ensures seamless and cost-effective service delivery, thus realizing the efficiency of the all-IP converged network.

6

# Easing the Transition to VoIP
## By ADTRAN

It was not long ago that Voice over IP (VoIP) was a technology for the future, or something to leverage for low-cost, low-quality Internet-based conversations. Today, it is real and it is driving the need for businesses to reinvent their networks. The advent of VoIP and other IP-based services has led to converged networks that handle both voice and data traffic over a single infrastructure and serve as the lifeline for today's business communication needs.

### Simplifying the Network

As both enterprise and carrier networks converge they have a tendency to grow in complexity. However, increased functionality does not have to mean more devices. NetVanta® all-in-one access solutions incorporate multiple, advanced networking functions in a single, compact device. This simplifies network infrastructure, eases management, and reduces costs. These versatile platforms offer routing, switching, firewall, Virtual Private Networking (VPN) and 802.11 a/b/g Wi-Fi® access, all in a single chassis.

Enabling VoIP, for Premises-based, Hosted, and Hybrid Applications ADTRAN® can meet your need for the customer premises termination regardless of the service being delivered. For networks transitioning to VoIP, the Total Access® 900 Series of multiservice access gateways supports traditional voice applications with SIP conversion to transport legacy POTS services over VoIP-enabled IP network infrastructure.

The NetVanta 7100 is an all-in-one solution for complete VoIP implementations at the customer site. ADTRAN's premises-based IP PBX supports up to 50 stations with voicemail and auto attendant among a host of other features. In addition to PBX functionality, the NetVanta 7100 provides an integrated 24-port Power over Ethernet (PoE) switch, IP router, firewall, VPN, and Quality of Service (QoS) to prioritize traffic, all in a single 1U-high chassis.

Likewise, newer business trunking and Hosted VoIP (IP-Centrex) services can be delivered seamlessly with other affordable, single-platform solutions from ADTRAN. The NetVanta 1355 is a perfect solution for converged IP voice and data services. It is a unique, all-in-one multiservice access solution for Hosted VoIP, Internet access and business connectivity. It delivers converged IP access by combining SIP gateway functionality, with an integrated 24-port PoE switch, IP router, including Layer 3 QoS and survivability features in a single platform. This solution allows carriers to expand their service footprint by providing a unique offering to address the growing Hosted VoIP market.

### Providing a Broad Range of Solutions

Regardless of your implementation, ADTRAN's NetVanta Series of IP business solutions offers a wealth of choices for fast, reliable, and secure connectivity. These products are ideal for carrier network implementation, bundled services, or business networks and address today's highest networking priorities.

# 2007 Marketing Awards

Lisa Smiley, Vice President of Marketing, presented the 2007 Hank Ford Award to a VSP Vendor Account Manager who understands and exemplifies the ideal vendor partner. The award is in honor of Hank Ford, formerly of Symmetricom, who died of cancer in 2003. This year's award recipient was Larry Fowler of Symmetricom. Lisa stated that "Larry Fowler is one of a kind. He worked with Chris Walker since the beginning of Walker and has grown up with us. He is always dependable, available, and has worked on many important projects with us. He embodies the attributes of what we look for in a true vendor partner. Walker is as dear to his heart, as he in ours."

*Larry Fowler with Lisa Smiley as he receives the Hank Ford Award*

Emotions were high for both presenter and recipient. Larry was obviously touched when he accepted the award and graciously thanked Lisa and Walker for the recognition.

Each year, deserving Product Marketing Managers are honored with the prestigious President's Citation Award. This annual award recognizes individuals for their outstanding performance and overall achievements in 2007. The awards were presented by Mark Walker, President, and Lisa Smiley, Vice President of Marketing. This year's awards went to Tracy Vogler and Tyson Philyaw. Both Tracy and Tyson were extremely honored by the recognition.

# RPR: The Simplicity of Ethernet...
## . . . . the Service Level of SONET

**By ADTRAN**

Business parks, shopping districts, growing suburbs and campus environments present a host of challenges for network planners. Ringed access architectures are typically employed by service providers because they offer greater economies and increased resiliency over traditional tree-and-branch topologies. A new IEEE standard, Resilient Packet Ring (RPR), is the latest tool to address this growing need.

RPR, as defined by IEEE 802.17, provides an optimized ring network that offers resiliency, service differentiation with guaranteed class of service, efficient utilization of all bandwidth, fair access to available bandwidth, and *plug-and-play simplicity*.

RPR offers service level guarantees in terms of bandwidth, delay, and jitter. This is *accomplished without the fixed circuit nature of legacy SONET/TDM networks, and without the statistical-only assurance of traditional packet networks*. Special queuing algorithms provide prioritization of the traffic, allowing the most delay sensitive traffic to access the ring before other, less-critical traffic. This queuing algorithm allows all unused bandwidth to be used by opportunistic traffic without impacting delay-sensitive traffic.

RPR provides expected resiliency where any break in physical or logical connectivity is detected and routed away from the ring, with this *protection switching typically in less than 50 ms*. This resiliency is quite similar to that seen from the more complicated and less flexible SONET architectures.

RPR also avoids a shortcoming of other ring architectures by removing traffic as quickly as possible. Through RPRs spatial reuse, all "best effort" traffic gets fair access to the ring bandwidth, with no advantage or disadvantage to relative position on the ring. Traditional packet networks often give advantage to the earliest or last to enter a network, with traffic trying to enter at the opposite end at a great disadvantage. This spatial reuse allows for maximum bandwidth utilization at all times. Similar to Ethernet switches, and quite unlike SONET, RPR switches can be plugged into and removed from a ring dynamically with no advance provisioning needed.

Using RPR rings to interconnect multiple locations provides a superior value to the customer and brings carrier-class Ethernet qualities to the backbone transport network. RPR is interoperable with other Ethernet networks. With built-in OAM capabilities, 50ms resiliency and the optical interfaces of RPR, campus and enterprise networks alike can now leverage carrier-class Ethernet features typically available only from more expensive MPLS and SONET devices.

ADTRAN offers RPR support and interfaces from several Multi-Service Access Platforms including the Total Access 5000 and the E M and C Series of Metro Optical Access Platforms.

## "carrier-class Ethernet qualities to the backbone transport network"

# Passive CWDM Technology vs. Deploying Additional Optical Fiber

**By Cindy Olson, ADC Telecommunications**

Advancements in telecommunication applications for voice, video and data are placing giant demands on fiber optic networks. Adding additional fiber to existing networks can be very costly to service providers. In most cases, a far better – and less costly – option is found in coarse wavelength division multiplexing (CWDM) technology.

CWDM technology has the ability to add greater fiber bandwidth while increasing the flexibility, accessibility, adaptability, manageability and protection of the network for applications up to 60km.

## What is CWDM?

CWDM can be viewed as a "third generation" of WDM technology. It is a more recent standard of channel spacing developed by the International Telecommunication Union (ITU) organization in 2002. This standard calls for a 20-nm channel spacing grid using wavelengths between 1270 nm and 1610 nm. Today's standardized CWDM is better defined as a cost-effective solution for building a metropolitan access network that service providers dream about – offering transparency, scalability, and low cost.

## New Developments

Although the ITU's 20-nm channel spacing offers 20 wavelengths for CWDM, the reality is that wavelengths below 1470 nm are considered "unusable" on older G.625 spec fibers due to the increased attenuation in the 1310-1470 nm bands. However, new
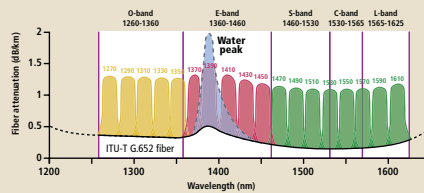
fibers that conform to the G.652.C and G.652.D standards, such as Corning SMF-28e and Samsung Widepass, nearly eliminate the "water peak" attenuation peak to allow for full operation of all ITU CWDM channels in metropolitan and regional networks.

## Basic Implementation

Market studies have indicated accrued costs between $10,000 and $70,000 per mile to deploy new fiber cable. Network architects can incorporate a CWDM system for much less cost and still achieve the bandwidth increases necessary to meet demand today and well into the foreseeable future. Basically, a CWDM implementation involves placing passive devices, transmitters and receivers, at each end of the network segment. CWDM performs two functions. First, they filter the light to ensure only the desired combination of wavelengths is used. The second function involves multiplexing and demultiplexing the signal across a single fiber link.

## Designated, Dedicated Wavelengths

CWDM also offers the benefit of individual wavelengths for allocating specific functions and applications. Out-of-band testing capability is achieved by simply dedicating a separate wavelength or channel for non-intrusive testing and monitoring.

CWDM achieves the critical goals of transparency, scalability, and low cost that providers seek in today's highly competitive industry – an industry where new applications and increasing demand dictate the pace for modern telecommunication networks.

Metro Transport Ring Using CWDM
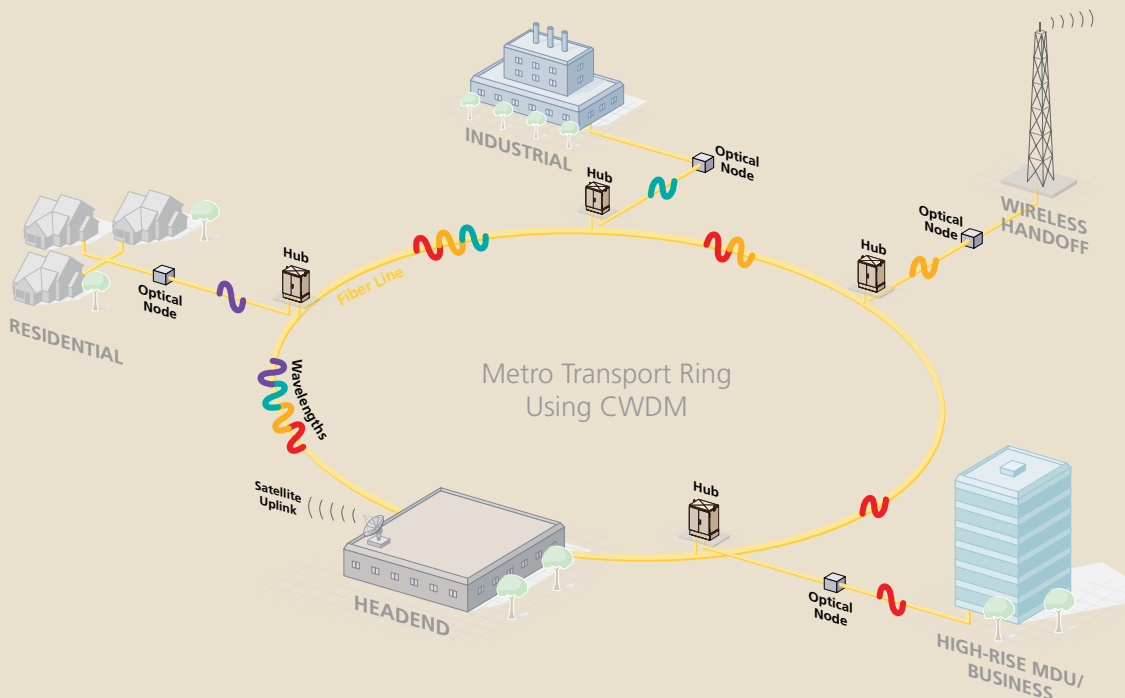
# The Minute Man Award

**By Mark Walker**

In 2006 and early 2007, Walker and Associates supported the men and women the North Carolina Army National Guard who were stationed in Iraq at Camp Speicher near Tikrit. They are known as the 105th Engineering Group of the NC Army National Guard and all 78 of them returned safely after 14 months of assisting Army combat forces in their efforts to secure northern regions of Iraq.

Walker provided periodic free packaging and shipping of personal supplies to the soldiers of goods collected for them by their family members. For the families and soldiers it was a very meaningful and helpful exercise. For Walker, it was a small token of appreciation and support that we enjoyed providing.

On Sunday September 9, at 1400 hours, the 105th Group assembled at the Lawrence Joel Veterans Memorial Coliseum in Winston-Salem, NC where they were rec-ognized for their defense of our nation and the developing democracy of Iraq. Mayor Alan Joines and Congresswomen Virginia Fox were on hand as well as representatives from Senator Burr's and Senator Dole's offices.

In a very special presentation arranged by Command Sergeant Major Henry Woodruff, Walker and Associates was bestowed a handsome statue of "The Minuteman", a likeness of the fabled New England farmer volunteering to defend homeland freedom - a symbol of the selfless duty of the Army National Guard. I had the ultimate honor of speaking to the servicemen, expressing our company's sincere appreciation and high respect for their countless sacrifices.

The Statue is a very fine and unexpected piece of heavy art to remind us of the unselfish service of our close friends and neighbors who put themselves in harm's way to protect our country. We are proud to display it in our main entrance lobby in Welcome, NC.

# Walker and Associates 2007 Holiday Dinner

By Anna Flippen



*Chrystie Walker-Brown looks on as Lynne Haywood receives the Chris Walker Award*



*Karen Beck receives the Al Stokes Customer Care Award from Chrystie Walker-Brown*

Walker and Associates held its annual Holiday Dinner at the beautiful Childress Winery and Vineyards in Lexington, North Carolina on December 10th, 2007. The festive evening consisted of dinner and recognizing Walker's associates for their hard work and dedicated service throughout the year.

Mark Walker, President, and Chrystie Walker-Brown, Board of Director, presented both the "Al Stokes Customer Care Award" and "Chris Walker Award" at this year's Holiday Dinner. The 2007 recipient for the "Al Stokes Customer Care Award" went to Karen Beck, Director of Information Technology. Mark described Karen by saying, "Walker entrusts this person with an immense amount of trust, she has earned her stripes, knows how to visualize, and is constantly aware of the customer." Karen was very touched to be the 2007 "Al Stokes Customer Care Award" winner. She thanked Mark, Chrystie and all of Walker for the distinguished honor bestowed upon her by her peers. The "Al Stokes Customer Care Award" is given to a Walker associate that exemplifies and shows persistent effort in voicing and acting upon the needs of its customers.

The 2007 "Chris Walker Award" went to Lynne Haywood, Human Resource Specialist. Mark characterized Lynne as someone who "lives by Walker's values and its namesake, and someone who is routinely evolving their high values". Lynne was emotionally touched by the recognition of the "Chris Walker Award". Lynne said, "She looks forward to coming to work everyday, and is so blessed to have such great leaders here at Walker". The "Chris Walker Award" is awarded to an associate who unwaveringly lives by the values of our namesake and co-founder, and who regularly demonstrates the dynamic and charismatic resolve of his or her daily effort. The 2007 nominations for both awards are collected from Walker associates and then delivered to the Board of Directors for final consideration.

In Mark's final words of the evening, he recognized Pete Steele, Director of EFI&T Business Development, and Lynn Soldano, Outside Sales Executive, for their innovation in Walker's field of installation. Both Pete and Lynn, who work remotely in their territories, were given a powerful round of applause even in their absence. It was a fun and festive evening that ended with holiday cheer.

Next Gen NETWORKS

### 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 crossconnecting RZX-3 features mid-size jacks and BNC connectors, and accommodates 24, 32, or 36 circuits per chassis in 19" or 23" racks.

### 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 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.

# From the Carrier to the Customer Premises

## ADC Enables the Next Generation of High-Speed Networks

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 walkerfirst.com or call 800.WALKER.1

**Walker and Associates carries the complete portfolio of ADC's industry-leading connectivity products**

### OmniReach™ Solutions for Multiple Dwelling Units

ADC's OmniReach™ solutions for Multiple Dwelling Unit (MDU) applications provide high performance interconnection of fiber cables and equipment at MDUs (apartments, condominiums, universities). These solutions support both low and high fiber count applications and include environmentally protective enclosures and high performance cable assemblies and connectivity components. With ADC's pre-terminated enclosures, distribution nodes can be added to the network with greatly reduced installation times and improved system reliability.

### OmniReach™ Fiber Distribution Hubs

ADC's OmniReach™ Fiber Distribution Hub (FDH) solutions provide for rapid connection between fiber optic cables and passive optical splitters in the outside plant segment of Fiber-to-the-Premises (FTTP) networks, facilitating fast service connection and reconfiguration, simplified network installations and improved installation efficiencies in the field.

### Optical Distribution Frames and Fiber Optic Panels

ADC Optical Distribution Frames provide a centralized point for termination, splicing, slack storage and housing passive optical components, featuring industry-leading density and fiber management. Fiber Optic Panels provide fiber termination, splice and/or slack storage and excellent cable management in a high-density, discrete panel solution for network element, OSP, RNC and distribution network applications.

### Coarse Wave Division Multiplexing (CWDM) Solutions

ADC Coarse Wave Division Multiplexing (CWDM) Solutions, part of the ADC's Value-Added Module (VAM) family, separate light, or wavelengths, allowing multiple signals to be transmitted simultaneously over a single fiber. The benefits of this are easily translated to your bottom line by installing easily, maximizing the existing fiber network and enabling out-of-band testing.

# Perfect Timing Where You Need It

Symmetricom is the world's leading provider of timing and synchronization for wireline, wireless and cable networks, including PackeTime precision timing modules for NGNs and TimeCreator, the first Cable Labs-qualified DTI server.
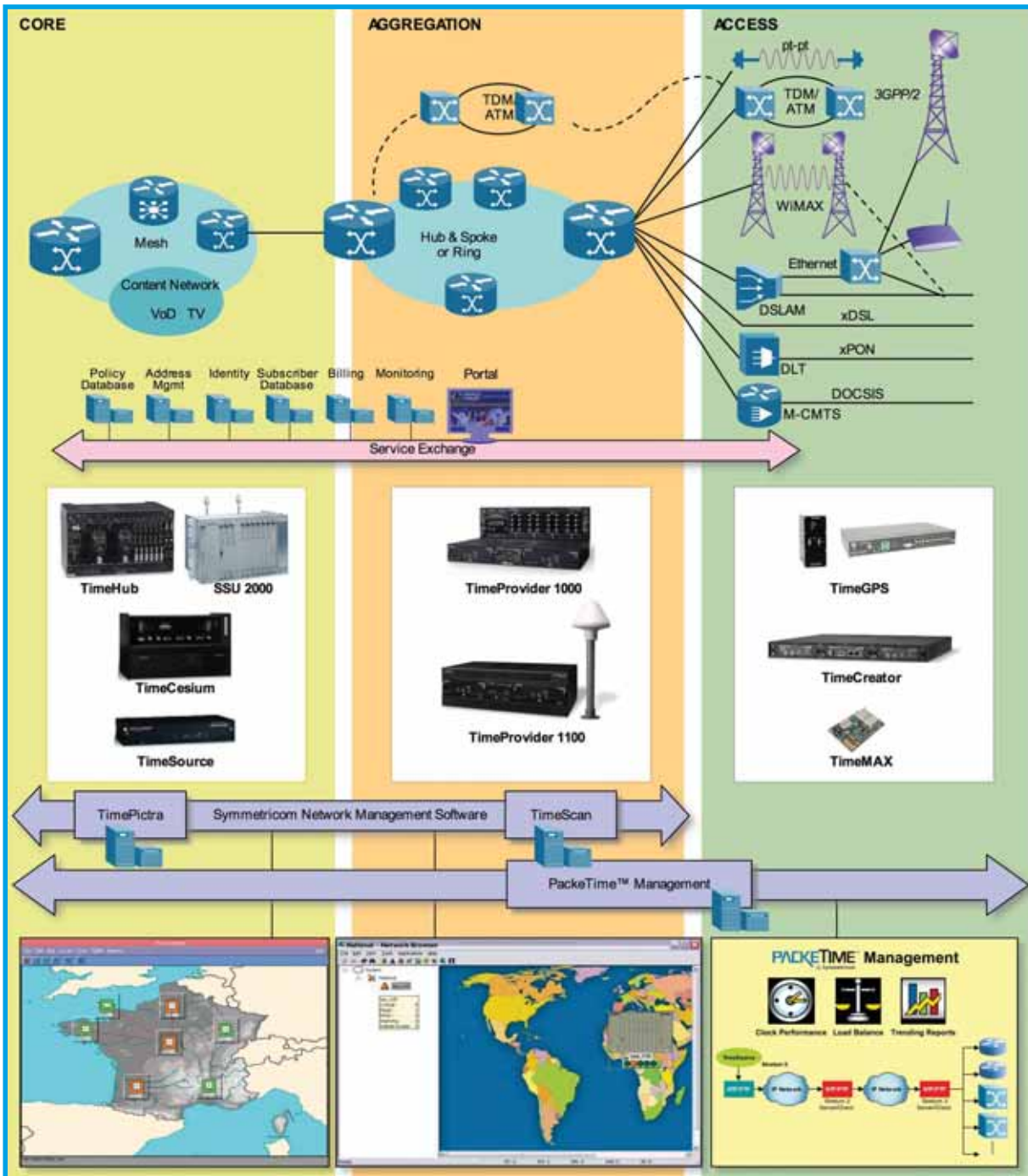


To see how Symmetricom fits your needs, call your Walker representative or visit

ngn.symmetricom.com/walker

# One Source for Layer One Central Office, Outside Plant, Residential

**By Telect**

Choose Telect and you'll gain a quarter-century of expertise, product innovation and service - along with solutions from the industry's one source for layer one network infrastructure.

Through Walker and Associates, Telect offers a complete line of optical and copper connectivity products, power distribution panels, equipment racks, cabling and cable management systems - all the components that comprise layer one infrastructure in communications networks. It's all available from one source, with highly competitive pricing and delivery.

## Power Distribution, Protection and Management

With decades of experience in communications power, Telect provides a comprehensive range of versatile, reliable distribution solutions for central office, wireless netork, remote terminal and enterprise applications. Low-, intermediate- and high-current panels are available.

## Copper Connectivity, Patch Panels and Systems

A pioneer in copper connectivity, with products that emphasize circuit density, cable management and usability, helping you build cost-effectiveness and efficiency into networks. From DSX-3 and DSX-1 systems to Cat 5e and Cat 6 panels, patch cords and accessories.

## Optical Connectivity

Patch Panels and Systems Connectivity solutions for 21st century applications, with a wealth of components, panels and systems for connecting optical networks. Telect solutions ensure signal integrity, ease of installation, scalability for future growth and simple usability.

## Equipment Racks and Cabinets

Choose from the industry's most complete line of equipment racks and cabinets, for central offices, data centers, outside plant, battery backup, and all types of communications environments. Indoor and outdoor cabinet options range from standard configurations to custom designs.

## Cable Management Systems

One source for total cable management - Telect. Whether your application requires optical cable trough, cable rack, superstructure components, or all types of cable management, Telect solutions are engineered to reduce overall installation and material costs while providing complete cable management coverage.

# Presenting: 2007 Top Performer Awards

**W**alker recognized two of its top performers at the annual Sales and Marketing Awards Banquet, held in November at the Embassy Suites in Winston Salem, NC. Tom Kane, Vice President of Sales, presented the Outside Sales Executive Top Performer Award to Bill Durham. Derek Granger, Director of Outside Sales, West Region, joined Tom in congratulating Bill by assisting him with the coveted Red Blazer.

"Bill Durham eptiomizes much of what we deem as key attributes of a successful Regional Account Manager for Walker and Associates. Having a well organized and strategic approach to all key accounts, a high level of communication both internally and with vendor partners, as well as managing opportunities well from start to finish. Bill has made a great impact for Walker, he is an appreciated member of our Sales Team and this award is very well deserved this year." said Derek Granger. Bill's reaction was one of honor and appreciation. Bill stated, "I was stunned to receive the Sales Person of the Year Award. I have only been with Walker two years and to be selected for this after such a short period of time really was a surprise. I know that any member of our Outside Sales Team really could have been selected, so there is even more significance to the award. My amazement is also due to the empha-sis Walker and Associates places on the award and the tradition of the Red Blazer. This makes it a very special honor."

A comment from Derek Granger during the award presentation really stuck with Bill. Derek mentioned that teamwork is one of the most important criteria when being selected for the Sales Person of the Year. Bill said, "As a Walker associate, I get to work with an amazing team of people. It isn't just Walker's great employees, and vendors, but I also have incredible customers that rely on us and treat us as a member of their team when it comes to working toward solutions and mutual success." In addition to the Chris Walker Red Blazer, Bill also received a handsome trophy and a trip to a 2008 national industry trade show of his choice.

The Chris Walker Red Blazer is the highest award attainable by an Outside Sales Executive. It represents strong sentiments, values, and emotions for everyone at Walker. The founder, Chris Walker, made the Red Blazer his trademark when calling on his customers during the establishment of Walker in the early 70's. Walker's website (www.walkerfirst.com) recounts the history of how it began by Chris Walker prior to his passing in 2000. One of Chris' original Red Wool Blazers is proudly displayed in the lobby of corporate headquarters in Welcome, NC.

Scott Stoll, Director of Inside Sales, was the presenter of the Inside Sales Executive Top Performer of the Year Award. This year's Inside Sales Executive recipient was Lee Ann Gilley. Standing with Scott to congratulate Lee Ann was Tom Kane.

"I'm proud and fortunate to have an associate such as Lee Ann Gilley in my group and she is certainly well deserving to be this year's Inside Sales Executive of the Year. Although posting large numbers is terrific and she should be commended for them, there are many other factors that go into the Inside Sales Executive of the Year that are not as easy to measure. No matter what the request is at hand, Lee Ann always delivers a professional and unprecedented level of support for her customers. You can count on Lee Ann to get the job done! I know it's hard work in this busy day to keep a smile going, but you will find Lee Ann smiling each day!" said Scott Stoll.

Walker also recognized Lynn Soldano, Outside Sales, and Dwayne Miller, Inside Sales, for outstanding sales achievement for 2007. Tom Kane and Scott Stoll were both presenters, and on hand to congratulate the recipients.

# Walker's Newest Associates

Walker and Associates had four new associates come on board the Walker Sales Team in October, 2007. The Inside Sales Team received two associates, Melissa Eickemeier and Jennifer Bryant, while the Government Team added two Outside Sales Positions, Mike Shoemaker and Tom Decker.

Melissa Eickemeier joined the Inside Sales Team with 10 years experience in global sales and account management. Her previous experience includes managing a joint venture between two companies selling components into BMW of Germany, which led her to learn the German language. Melissa enjoys salt water fishing and horses. She has an American Saddlebred horse that she shows competitively throughout the eastern US. We are excited to have Melissa with Walker and Associates to help us grow new markets.

Jennifer Bryant also joined Walker in October 2007, and works with Melissa on the Inside Sales Team. Her territory is the upper Northwest (Alaska, Washington, Oregon, Montana, Idaho and Wyoming). Jennifer Bryant has nineteen years experience in both inside and outside sales within the corrugated industry. She previously lived in Louisville, KY, Atlanta, GA, and now Lexington, NC. In her free time Jennifer loves spending time with her two daughters, Natalie and India. We would like to welcome Jennifer to the Walker family.

The newest member of our Government Outside Sales Team is Mike Shoemaker, who is pictured at the right in the photo below. He manages accounts in NC, SC, and parts of GA for government accounts. After Mike left the Marine Corps in 1970, having served in Vietnam, he joined IBM Corporation in Charlotte, NC. From there he moved into management in Richmond, VA

and then transferred to the General Systems Division, managing computer and office equipment repair technicians. Upon retirement in 2000 Mike worked as a contractor in the IBM PC development area at Research Triangle Park, NC and later was the General Manager of Research Triangle Office Systems. He also worked in the staffing industry as a Business Development Manager for the Alliance of Professionals and Consultants, Inc. Mike lives in Raleigh, NC with his wife of 39 years, Linda. They are the parents of Whitney, and the proud grandparents of Caleb.

Another addition to Walker's Government Outside Sales Team is Tom Decker. Tom is Walker's Strategic Federal Accounts Manager for the Western Region. He services the Department of Defense and Federal Agencies. Tom comes to Walker with over twenty years of U.S. Army background. He worked government contracts for Science Applications International Corporation for nine years, working in systems engineering and sales, and spent over eight years with ADC. Tom is a proud father of three daughters, and has seven grandchildren. He currently lives in Tucson, AZ.

## Upcoming Industry Events

### February
UTC Region 8, 9, 10 Meeting and Expo
Reno, NV

AFCEA West 2008
San Diego, CA

NTCA Annual Conference and Expo 08
New Orleans, LA

Georgia Telecommunications Association Expo
Macon, GA

### March
Minnesota Telecom Alliance 99th Annual Convention & Trade Show
Minneapolis, MN

UTC Region 3
Columbia, SC

TSTCI Plantman's Conference
Austin, TX

ITA Showcase
Portland, OR

### April
CTIA 2008
Las Vegas, NV

Texas Communications Expo
Belton, TX

TANE Spring Vendor Showcase
Bretton Woods, NH

RCA Wireless 2008
Las Vegas, NV

Calcon Tech and Expo
Sacramento, CA

Fiesta Informacion
San Antonio, TX

### May
UTC Telecom 08
Orlando, FL

### June
NXTCOMM 2008
Las Vegas, NV

17

## Walker and Associates Honored with Manufacturer Awards

The 2007 Walker and Associates Sales and Marketing Awards Banquet was held at Twin City Quarter in Winston Salem, NC. It was a highly anticipated evening by all who had attended Walker's annual End of Year Sales Meeting. Not only did it mean that a long, tedious week had come to an end, but it also meant friends and co-workers could come together for some long awaited camaraderie. The evening was a social one, beginning with dinner in the Grand Ballroom, followed by the awards presentation.

Walker and Associates was proud to have such a wonderful manufacturer turnout at its annual awards dinner. Present that evening were: ADTRAN, ADC, Telect, Tellabs, Fujitsu, Newton Instruments, Symmetricom, and Carrier Access. A strong representation from Walker's key partners was on hand to present awards to top performers. Each one made comments that underscored their commitment to lasting relationships with Walker and Associates.

Among those acknowledged from outside sales were Rich Ferrante, Eddie Lester, Bob Hodowanic, Ben Dierker, Lynn Soldano, and Rick Walker. Walker's key partners also recognized a number of Walker's inside sales team including Dwayne Miller, Lee Ann Gilley, Kevin Foster, Debbie Stogner, Patti Brammer, Emma Hanes, Patricia Wells, Melonie Lowery, and Stefanie Leak. Also recognized by a VSP partner for their Marketing and Sales support were Todd Mathes and Ashley Jobe.

Other key manufacturer presentations recognized Walker's achievements as a distribution partner. Walker and Associates was awarded the 2007 #1 SP Distribution Partner of the Year for ADTRAN. The award was presented by Rick Schansman, Vice President and General Manager of ADTRAN's Enterprise Division, and Mark Ogden, ADTRAN's Director of Service Provider Distribution Sales. Walker was also recognized by Larry Fowler, Director of Distribution Sales for Symmetricom, for being their 2007 Platinum Distribution Partner of the Year.

# N.C. Outer Banks Marathon

Two of Walker's associates ran the North Carolina Outer Banks Marathon on Veterans Day this past November. Donna Crotts, Product Return Coordinator, and Tyson Philyaw, Product Marketing Manager, trained together for 22 weeks through the cold month of February all the way through the 100 degree weather of October. There were days that tested them mentally and physically. Some days they would have to endure 20 mile runs, while other days brought short-tempered dogs.

The marathon was 26.2 miles and wound through Kitty Hawk, Kill Devil Hills, Nags Head, and Manteo. There were 3000 runners signed up for the Outer Banks Marathon.

It was a perfect day to be running, 55 degrees, wind at your back, and the beautiful scenery of the North Carolina Outer Banks. Donna and Tyson described the locals as welcoming, "People were out on their porches banging pots and pans, handing out water, cheering us on, and anything else to keep us going." Car owners would honk their horns as they drove by, and the passengers of the cars would hold up signs to encourage the runners to keep moving to the finish line. Spectators lined the roads of the small coastal towns to watch the action and to hopefully catch a glimpse of their favorite runner.

The finish line was in the quaint, little town of Manteo. Both Donna and Tyson enjoyed being first time marathoners. Donna's time was 4 hours and 44 minutes, finishing 21st in her age group; and Tyson's time was 4 hours 18 minutes, finishing 50th in his age group. For both Tyson and Donna, finishing this race is an accomplishment they can both look back on with pride.



*Donna Crotts and Tyson Philyaw celebrate together with Tyson's older daughter, Caroline, following their successful completion of the NC Outer Banks Marathon*

# OmniReach™ FTTX Solutions

## Reduced Bend Radius MDU Drop Cables
### By ADC

ADC's new OmniReach™ Reduced Bend Radius MDU Drops are an ideal solution for the unique challenges encountered when deploying FTTX networks in today's Multiple Dwelling Unit or MDU buildings. Reduced Bend Radius MDU Drops are offered in Indoor/Outdoor, Riser and Plenum cable types making them suitable for all types of MDU structures.

Reduced Bend Radius MDU Drops allow for a bend radius as small as 7.5mm without changing attenuation characteristics of the cable and improve insertion loss (IL) performance for 90 degree bend locations. With the average MDU installation including as many as seven 90 degree turns, this new fiber greatly reduces the risk to bend induced IL during installation. In addition to the improved bend radius performance, the rugged 3mm cable construction provides the flexibility and durability to withstand the most demanding applications.

The rugged 3mm indoor/outdoor cable can be stapled*, allowing for fast and easy securing of cables to most surfaces. The reduced bend radius glass allows the technician to staple around tight corners without compromising insertion loss performance.

ADC's Reduced Bend Radius MDU Drops provide for quick and easy deployments with increased reliability, which allow for fast service turn-up, improved network reach and lower overall network operating and maintenance costs.

### Typical Applications:

• Garden or horizontal; indoor/outdoor cable used to transition from an outdoor fiber distribution terminal to each indoor living unit
• Mid or high-rise; all three cable types can be used to transfer from an indoor fiber distribution terminal to each individual living unit within a building
• Indoor/outdoor and riser cables are suitable for all OFNR applications; OFNP applications will require plenum cable

### Features and Benefits:

• Bend radius as small as 7.5mm without changing cable characteristics
• Greatly reduces risk to bend induced insertion loss created during installation
• Indoor/Outdoor, Plenum and Riser cable options available
• Rugged 3mm cable jacket construction
• G.657 Table A and B compliant
• Two cable configurations available: connectors on both ends or connector on one end
• Spooling options: end with connector pulled first or end without connector pulled first
• Ivory cable color helps distinguish cable in the field

*(\*ADC approved staplers and staples.)*

| Conforms to: | Indoor/Outdoor Cable | Riser Cable | Plenum Cable |
|---|---|---|---|
| Restriction of the use of hazardous substances RoHS (2002/95/EC) | X | X | X |
| Comply with California Prop 65 for Safe Drinking and Toxic Enforcement Act (Independently verified) | X | X | X |
| Telcordia GR-409-CORE, EIA/TIA FOTPS | X | X | X |
| Telcordia GR-20 tested to relevant specifications | X | | X |
| ISO/IEC 11801 | X | X | X |
| IEC 60794-2 Optical Fiber Cables Part 2 | X | | |
| EIA/TIA 568-B | X | X | X |
| (UL) 1666, NEC OFNR, FT-4 | X | X | |
| (UL) 910, NEC OFNP, FT-6 | | | X |

19

"According to a recent report from Dell'Oro Group, the trusted source for market information about the networking and telecommunications industries, revenue growth from sales of carrier Ethernet routers continued to outpace that of carrier Ethernet switches in the third quarter of 2007. As a result of the strong growth in the carrier Ethernet router segment, sales of carrier Ethernet routers are on the verge of surpassing carrier Ethernet switch sales."

*Although they may look like a barbershop quartet gone bad, these are actually current and past recipients of the Walker Red Blazer Award, otherwise known as the Salesperson of the Year Award. From left to right, they are Bill Durham (2007 recipient), Eddie Lester (2003 and 2004 recipient), Derek Granger (2001 and 2002 recipient), Rich Ferrante (2005 recipient), and Ben Dierker (2006 recipient).*

**WALKER**
AND ASSOCIATES INC.

# BRAIN FREEZE

## Walker's
## Word Search... with a twist

```
I G B Q X P O S O L U T I O N S M B C
N O I T U B I R T S I D Q M S E U R B
S V C A B L E T V F Z G Q E R O L F P
T E I N Q R E U F H N W L C N Z T A L
A R M P K O T E T N C E F I T F I S A
L N K O W U H R T Q R H Y J K Z P L N
L M D W D T E A X I V S D G N P L K O
A E U E T E R S W B Z T X P I A E Y C
T N Y R O R N D E C O R P O R A X E O
I T F S J I E R R Y T I L I T U E A B
O M R J S K T A A K Y T U R P O R T R
N U A E W L T H I N T E G R A T I O N
```

## HOW TO PLAY

Find the words in the puzzle to the left by following the clues below.
Hint: ⬤ Stands for 1 letter

**6 Telecom Markets Walker Distributes to:**
1) C ⬤⬤⬤⬤ TV
2) W ⬤⬤⬤ L ⬤ S S
3) ⬤⬤ I O I ⬤ Y
4) ⬤⬤ V ⬤ R ⬤⬤ E ⬤⬤
5) R ⬤⬤
6) ⬤⬤ ⬤ P ⬤⬤⬤ T ⬤

**4 Types of Product Technology Walker Distributes:**
1) F ⬤ T ⬤
2) P ⬤⬤ E ⬤
3) E ⬤ H ⬤⬤⬤⬤ T
4) R ⬤⬤ T ⬤ R

**3 Types of Services Walker Offers:**
1) ⬤⬤ T ⬤ G ⬤ A T ⬤⬤⬤
2) D ⬤⬤⬤ R ⬤ B ⬤⬤⬤ ON
3) I ⬤ S ⬤⬤⬤ L ⬤ T ⬤⬤⬤

**1 Fill in the blank:**

Walker Distributes_____!

S ⬤ L ⬤ T ⬤⬤⬤ S

You'll find words up, down, across, backwards & diagonal.

**Good Luck!**

## AMAZE-ING



"Do what you can, with what you have, where you are."
~Theodore Roosevelt



Page Created By: Ashley Jobe

## DeJA-WHAT?
### Stuff You May Or May Not Know

Metro Ethernet is not new, It's been around for more than 20 years in various manifestations. It first started out in the mid 1980s as ISDN's central office-based LAN, shortly to follow it became IEEE 802.6 and SMDS. In the early 1990s point-to-point Metro Ethernet was deployed, next was ATM-based multipoint services. In the early 2000s several next-generation carriers started offering services based on metro-level optics for Gigabit Ethernet with virtual LANs or next generation SONET.

-Infrastructure insights By Daniel Minoli, Network World

According to a recently published report by Kubernan, Metro Ethernet is poised to be the next generation of access technology. The report, based on an extensive survey of both enterprise customers and providers of the service, finds that 36% of the enterprise respondents indicated that they already had Metro Ethernet services in production and/or that they were in the implementation process. The biggest single barrier to this adoption rate seems to be the service availability - a situation that the service providers will soon be remedying.

-Wide Area Networking Newsletter By Steve Taylor and Jim Metzler

# Out of the Box . . .

## Into the Network

**Offering innovative solutions for nearly 40 years, Walker and Associates has both the experience and the vision to make your network dream a reality.**

**WALKER**
AND ASSOCIATES INC

A CERTIFIED
MWBE
CORPORATION

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