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Session Border Controller Outlook (page 84)

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The VoIP Authority

By Greg Galitzine

IMS: It's Still About The Services

I was doing some reading on the subject of IP Multimedia Subsystem (IMS) and I was struck by a statement from a white paper on the matter written by Nokia. The statement was simple, yet declarative, and what it declared was this: "IP multimedia and its benefits will generate new business."

There it is — pure and simple. Services based on IMS will generate new business. Service providers will make money and end users will gain access to a wealth of new and exciting services. And, like I've been saying all along, since we published the very first issue of Internet Telephony magazine: It's all about the services!

For those unfamiliar with the technology, IMS (define - news - alert) is a network architecture defined by the 3GPP (define - news - alert) to support multimedia wireline and wireless convergence of voice, video, messaging, and data. SIP (define - news - alert) plays a major role in this convergence, enabling service creation, and giving developers a single open standard upon which to base their applications.

And the applications are many and varied. Some examples include multi-player gaming, video and content sharing, and of course voice over IP.

The opportunity for service providers is immense. By leveraging IMS, operators will be able to build services using a single platform, giving rise to the ability to create and mix and match services as dictated by consumer demand or by the need to satisfy specific business objectives, and truly delivering on the vision of building applications once and reusing them multiple times in various scenarios.

Dr. Sandip Mukerjee of Lucent Technologies addresses some of the opportunities presented by IMS in an article that appears on page 104 of this issue. Mukerjee makes the case that professionals and consumers are merging insofar as they are increasingly blending their work and home lifestyles, and wish to carry their multimedia services with them as they transition between the two. He labels these people "prosumers" and explains their growing expectations for a holistic communications experience that combines voice, video, data, and multimedia across any range of devices.

IMS holds great promise, and as with any compelling technology that is poised to make its presence felt in a big way, there is a concomitant need for education. That's why this October, at the Internet Telephony Conference & EXPO, we will be featuring an IP Multimedia Subsystem (IMS) Summit, providing an unmatched opportunity for attendees to learn about this important technology. Check out the show Web site at www.itexpo.com for more information on this innovative new content offering.

-Greg Galitzine, ggalitzine@tmcnet.com

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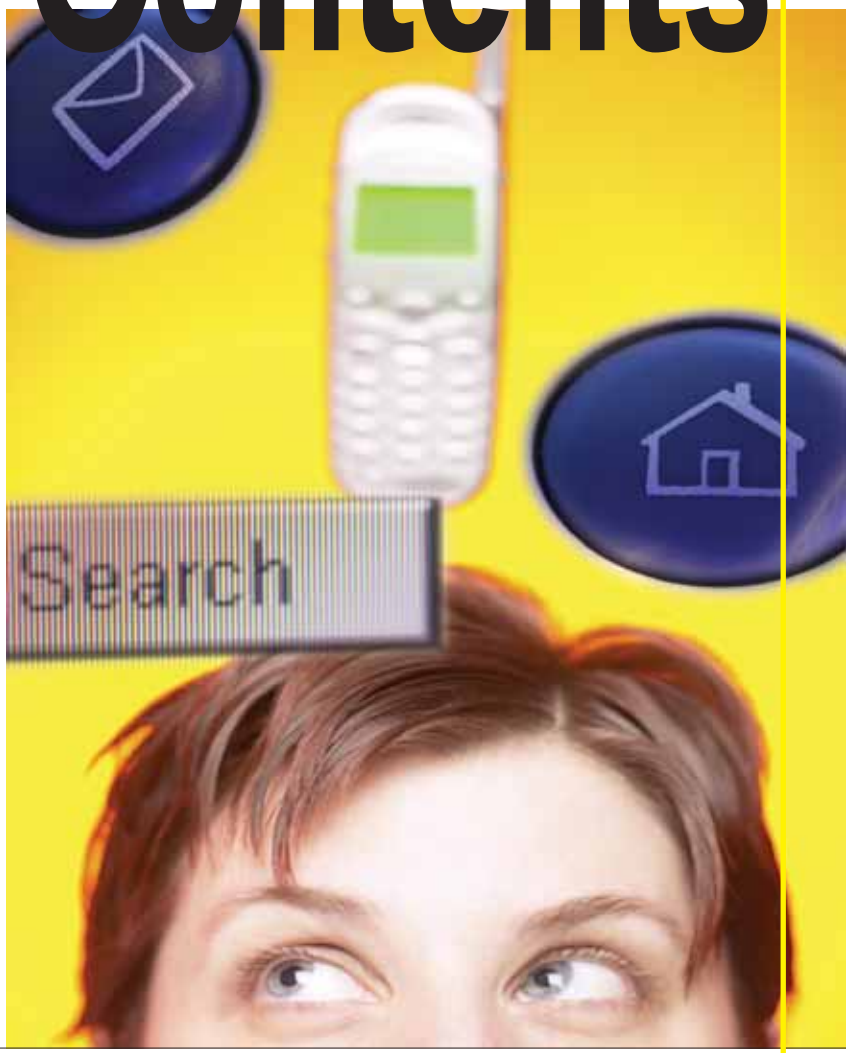

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QUOTE OF THE MONTH:

"The challenge remains for the traditional telcos to chart a course. As these service providers from the old fashioned voice world try to figure if and how VoIP peering will work for them they may now have to also contend with the feeling of being outsiders to the IP peering world. There are many service providers that won't be around in a few years, but don't feel bad, it's not that you weren't cool enough for the club. It's just that your business model became extinct. It was about a new way to generate profitable revenue from technology, not technology itself, or any specific group of people who seem to know what is going on. We all have a lot to learn."

– Hunter Newby

WHAT'S ON TMCNET.COM RIGHT NOW

To stay current and to keep up-to-date with all that's happening in the fast-paced world of IP telephony, just point your browser to http://www.tmcnet.com for all the latest news and analysis. With over 720,000 unique visitors coming to the site in the month of April 2005, TMCnet.com is where you need to be if you want to know what's happening in VoIP.

Here's a list of several articles currently on our site.

8x8 Now Offering E911, And It Works, Really
8x8 Inc. Packet8 VoIP and videophone provider announced that the Enhanced 911 (E911) service it offers is now available in 2,024 rate centers covering 43 U.S. states.
http://tmcnet.com/119.1

Anytime, Anywhere: Trends In The U.S. Messaging Market
The number of messaging systems supporting speech recognition, text-to-speech and conversation record has more than doubled during the last few years.
http://tmcnet.com/120.1

SBC Finally Offers e911 Services To VoIP Providers
SBC will give independent VoIP service providers direct access to the emergency call infrastructure for stationary customers throughout its 13-state region.
http://tmcnet.com/121.1

Vonage Changes 911 To Opt-Out
Vonage is changing its 911 service to opt-out from opt-in.
http://tmcnet.com/122.1

Special Report: VoIP Goes Mainstream In 2006
VoIP subscriber growth is forecasted to accelerate this year, but a study reveals that 2006 will be the year when IP-based telephony will truly enter the mainstream.
http://tmcnet.com/123.1

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By Rich Tehrani

The VoIP Developer Opportunity

Lately I have been speaking with a number of research companies that tell me the VoIP market will see tremendous growth until around 2011 or even 2015. What I have learned from being in this business as long as I have is that when VoIP gets hot, it gets very hot. It doesn't ever grow in small increments and that is the exciting part of being involved in this space.

One of the areas where there is tremendous amount of money to be made is supplying VoIP users with applications and equipment. There are so many potential opportunities to exploit in VoIP from video conferencing devices to software to augment a PBX to consumer type devices.

We can expect all PBX (define - news - alert) vendors to have partner programs for example as it behooves these companies to find developers to differentiate their offerings in a crowded market. This means VoIP developers will soon be wooed by these PBX vendors to develop on their platforms. I can't imagine consumer electronic devices of the future without WiFi telephony built into them. Everywhere we turn it seems, we will have access to VoIP (define - news - alert) calling. We can't be in a better space.

To that end, I decided to contact some of the vendors in the VoIP development space — a wide cross-section of companies that are involved in many levels of the VoIP value chain. I interviewed these companies to get their take on the market and to ascertain their thoughts on the potential of VoIP. No one is closer to the market than these companies and they are the best people to tell you where the opportunities in communications lie.

Jack Chang, COO TelTel

What trends are you seeing in VoIP development?

JC: We see a continued trend toward IP convergence with SIP becoming the standard of choice in VoIP communications. We believe SIP is one of the major drivers of VoIP. Specifically designed for multimedia sessions (voice, video, and data), SIP is poised to become the standard of choice for VoIP developers and manufacturers. Any providers who speak SIP will stand a better chance to interoperate with other VoIP players and SIP-based communications platforms and realize multiple revenue opportunities.

What are the hottest areas in VoIP development?

JC: We see significant opportunities in many open source IP development platforms where developers can custom build many value-added applications which can be made available to end users and enterprises through a standard-based delivery platform.

Are there still opportunities that will generate revenue in the VoIP space?

JC: In addition to traditional revenue opportunities associated with replacing PSTN calls with cheaper VoIP calls, we see new revenue opportunities with call origination, unified communications, IVR, and an assorted suite of enterprise communication applications.

Baris Demir, Director of Marketing, VoiceAge Corporation

Is 2005 to be considered "the year" for VoIP? What about 2006, etc?

BD: From the exposure given to VoIP in the popular press and other mass media I think that it is obvious that the chasm has long been crossed for this technology and we are well beyond the inflection point and headed towards mainstream adoption. There is just so much investment in VoIP technology, marketing, service development and deployment, etc., that the initial inertia and natural hesitance of enterprises and consumers has finally been overcome and the next few years should see substantial growth in VoIP users — as long as the regulators don't rock the boat too much. Is it "the year?" No, in my opinion this market has vast potential so these next few years promise to be great ones but I think that the best is yet to come. Now with widespread deployment of standards-based wideband speech codecs, next year could indeed be the best one yet.

What are the hottest areas in VoIP development?

BD: I'm not sure, we're kind of in a specialized niche so my perspective is skewed somewhat ... putting aside my wideband codec bias I think that multimedia collaboration, video integrated telephony, and conferencing (which benefits greatly from wideband speech) are very exciting spaces. The whole wireline/wireless (WLAN/Cellular) integration angle is also very intriguing from a business development perspective.

So, what are your thoughts on hybrid cellular/WiFi devices?

BD: Such devices enable a necessary and useful step towards the truly converged networks needed to enable pervasive communications and help shrink time and distance in our global village. They will initially be very useful for enterprise users, especially helpful to increase productivity in businesses with many road warriors and/or also multi-site large campuses. As more homes deploy WLANs, such phones and innovative associated service plans could also help accelerate the displacement of fixed lines with wireless gear (acts like a cordless phone in the home) — as long as the E911 capability can provide robust indication of caller location. Cost and battery-charge time duration/expectancy might be issues that could be among the issues that slow down the adoption of this technology, though I'm afraid don't know enough about these aspects to comment on them.

Amir Zmora, VP Marketing & Product Management, Surf Communication Solutions

What trends are you seeing in VoIP development?

AZ: VoIP is moving from the early adopter phase to mass deploy-

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ment but currently still mainly as toll bypass on the CPE side. Most residential users still use an analog phone or their computer. On the other hand, in the enterprise space new features such as presence, IM, video telephony, data collaboration, and mobility are bringing more value to organizations.

What are the hottest areas in VoIP development?

AZ: Skype is for sure the hottest thing on the CPE side. Even though it is not using a standard protocol it might threaten SIP deployment if it will be capable of providing the features and services SIP can provide not only for direct point to point communication but also advanced routing and other services.

Video and mobility are going to change the way we communicate. The ability to communicate across different networks makes VoIP more accessible and easy to use.

Are there still opportunities that will generate revenue in the VoIP space?

AZ: Bridging between the different networks and providing cost effective video services across them is still a big opportunity. This includes not only 3G and IP networks but also wireless (WiFi and WiMAX) and PSTN (wireline) integration.

What are your thoughts on WiFi telephony vis a vis WiMAX or 3G?

AZ: WiFi will be seen more in the enterprise but will not be the solution for metropolitans where WiMAX will come in place. WiMAX might be a threat to 3G once mobile phones will support 3G/WiFI/WiMAX (define - news - alert) .

How do you see IMS changing the landscape of telecom?

AZ: IMS and the services it provides will bring a boost not only to the mobile market but also for VoIP in general since these services will need to be available on other networks that will all need to be integrated. Services will need to be provided across these networks.

Michael Ward, Director of Product Line Management, Trinity Convergence

What trends are you seeing in VoIP development?

MW: With the proliferation of consumer targeted VoIP services, one clear trend in VoIP development is the need for OEMs/ODMs to rapidly develop cost-effective VoIP endpoints. They need to also develop a family of VoIP enabled endpoints that allow them to target a range of cost points/feature sets. As such, these OEMs/ODMs are looking to leverage merchant technology — both in terms of VoIP merchant silicon as well as VoIP merchant software, to allow them to more rapidly develop product.

Is 2005 to be considered "the year" for VoIP? What about 2006, etc?

MW: While total VoIP subscribership pales in comparison to traditional service, VoIP subscriber growth rate is astounding. Weekly, tens and tens of thousands of subscribers are migrating from POTS to VoIP services. 2005 appears to be the year that VoIP has clearly arrived in the mainstream — we are encouraged and surprised with the consumer's awareness of VoIP as a technology. All indicators suggest that in 2005 VoIP is on the precipice of substantial penetration into the household.

What are the hottest areas in VoIP development?

MW: Video-enabled VoIP terminals represent an exciting area in VoIP development. The technology has reached the stage where cost-effective endpoints can be developed that provide high-quality, full duplex personal video conferencing services to the consumer. VoWiFi and Cellular/VoWiFi development is another exciting area as the necessary enabling technologies are emerging (handoff, low-power WiFi devices, WiFI QoS) that allows these devices to move from early stage prototypes to real production systems.

Why do you think now is the time for developers to get into VoIP?

MW: Developers are now able to utilize off-the-shelf VoIP "building blocks" which allow them to rapidly develop VoIP enabled devices. With VoIP adoption growing there is recognition within the industry that VoIP must move beyond "free" calling and towards the delivery of enhanced services. As such, this is an ideal time for developers to leverage the enabling VoIP technology to develop new innovated services and applications for VoIP.

Are there still opportunities that will generate revenue in the VoIP space?

MW: Absolutely — in fact, Trinity believes that we've only scratched the surface in terms of the potential revenue generating services that will emerge. As VoIP technologies find their way into more and more applications, the ability to integrate voice as a value-added service into other applications will create opportunities for interesting combinations of services. As an industry, we have to begin to shift our thinking away from voice as the primary application of VoIP, but rather view voice as a supporting feature or some other type of application or service.

Eric Burger, VP, CTO Next-Generation Communications, Brooktrout Technology

Why do you think now is the time for developers to get into VoIP?

EB: There's a tremendous opportunity for developers to take advantage of the standards-based development environment created by protocols such as SIP and VoiceXML along with open systems/platforms that can not only replace legacy applications but also serve as the vehicle for delivering new and innovative applications. In addition, VoIP presents an opportunity to integrate phone systems much more directly with the corporate data infrastructure to improve employee productivity and customer service. Again, standards like SIP and VoiceXML are at the heart of this, because they allow the telephone to become just another access method to the company's web data and applications, leveraging the huge investment that's already been made in that infrastructure.

Are there still opportunities that will generate revenue in the VoIP space?

EB: Absolutely. As previously mentioned, new IP multimedia services provide revenue generating service opportunities for both the consumer and corporate markets.

What trends are you seeing in VoIP development?

EB: We see a strong trend in the roll out of value added, multimedia applications built upon VoIP infrastructure. IP-based platforms are more flexible than traditional telecom platforms and can easily adapt to support different media types. In the carrier space, video messaging, gaming, pre-paid, and conferencing are among a number of applications that are being deployed. New IP-based applications are becoming the major driver for innovation, differentiation, and new revenue generating services.

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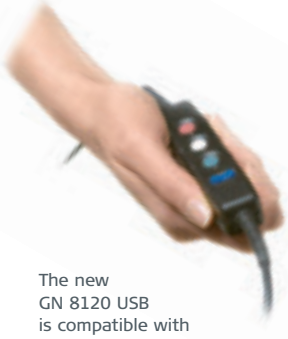

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What are your feelings on SIP?

EB: SIP is the driving force and standard for delivering "IP killer apps". It's a key component in the development of both multimedia and presence applications. SIP (define - news - alert) also increases a customer's choice in buying products and solutions. Other factors include greater flexibility, scalability, and reduced capital and operating expenses.

How do you see IMS changing the landscape of telecom?

EB: Since IMS defines a service creation and delivery framework that is agnostic to the access and transport network, it is very compelling. By now most operators have bought into IMS as the architecture and are evaluating their options for deployment. However, what we've found working with our customers is that you don't need to cut over to IMS all at once. Instead, you can take specific projects that are justified on their own ROI merits, and implement them in an IMS-compatible fashion. IMS is based on IP and SIP, and is therefore modular and scalable. Historically, wireless, wireline, and cable networks have adopted separate standards and methods for accomplishing very similar goals. The transition to IMS presents a great opportunity to increase commonality across these domains. This will pay off at many levels. Operators will be able to extend services to users regardless of how they access the network, so their decisions will be based on business opportunities, not on technology constraints. And users will get more value out of the networks because they will be able to use services in more environments, to connect with more people.

VoIP Developer Conference

I can't imagine a more healthy space to be developing in than VoIP and the vendors in the space seem to agree with the analysts. If you are interested in learning more about VoIP development or talking with any of the companies in this article, I hope to see you at TMC's VoIP Developer show August 2–4 in the South San Francisco Convention Center. We expect this show to sell out just as it did last year. For more information, please visit http://www.voipdeveloper.com.

Internet Telephony Conference & EXPO Grows And Grows

The exhibit hall at our last event (Miami, February 2005) was literally bursting at the seams. Not only did this show have the most attendees of any VoIP event in the world, it was in a sold out exhibit hall making the aisles impossible to walk down easily. We are now happily moving the show to a larger facility.

The Fall Internet Telephony Conference & EXPO will be moving to the Los Angeles Convention Center October 24–27, 2005.

This show has more leading-edge education and activities than any other show I am aware of. We spent many days assembling what has to be the most comprehensive conference and educational program around. As always conferees get a guarantee if they aren't satisfied and as a reminder, not a single conferee has ever taken us up on this offer. Please see http://www.itexpo.com for details.

You can expect to see the second annual VoIP Service Provider Awards dinner at this event. New criteria have been implemented this year and the selection process will be exciting as the players in this market are multiplying very quickly indeed. A nomination form and other information can be found online at http://www.itexpo.com.

Another interesting byproduct of having the largest VoIP show in the world is that we had more service providers at this year's event than any other show had and many of the service providers in attendance from around the world thanked me for all the objective education they received (credit goes entirely to my team for this). The point is that there seems to be such demand for objective education that we have launched a four-day Service Provider Summit at ITEXPO this fall that will focus on every critical issue service providers need to tackle when deploying VoIP in their networks. Please see http://www.serviceprovidersummit.com for details.

Yes, ITEXPO is the one place you need to come to learn about the entire VoIP market and we attract resellers, service providers, enterprise decision makers, and government buyers in large numbers. The exhibit hall is more like a mall where buying takes place on the show floor and there is a frenzy of learning and networking going on. The excitement level is unmatched and we are proud of this fact and thank many of you, our loyal attendees for making these shows possible.

The Future

We are seeing an increasing amount of convergence between wireless and VoIP and as a leader in both areas we have decided that a more appropriate home for ITEXPO on the west coast is San Diego. We are proud to announce that ITEXPO Fall will be held there October 10–13 in 2006. We can't think of a better location and we are excited to be bringing the world's largest "VoIP shopping mall" into the wireless capital of the world. IT

An Open Letter To President Bush

Dear President Bush,

I am writing to you today as I believe I have something worthy of your attention to share. As a representative of the voice over IP (VoIP) market, I would like to point out how important this relatively nascent technology has become in the world and especially the U.S. Voice over IP has helped your constituents by reducing prices on local and long-distance calls throughout the world.

In addition to lower prices, a primary reason VoIP is good for consumers is that it infuses the current telecom environment with choice. New providers like Vonage and a variety of cable companies are generating substantial competition for entrenched telecom companies.

Like any nascent technology, VoIP has flaws – well at least its implementation can have flaws. Perhaps the biggest challenge VoIP has is in its 911 support. Not all providers of VoIP service can provide support for 911 as well as the incumbents can. As you can imagine, an industry where the average VoIP provider has been providing service for less than 24 months needs some time to perfect how it operates.

As I am sure you are aware, the FCC, under Chairman Kevin Martin's expert guidance is deciding on 911 issues as you read this. There are many points that need weighing, such as what sorts of regulations and restrictions should be placed on VoIP providers. How will we resolve the issue of a VoIP user that is mobile, etc.

The biggest concern the communications industry has is that a potentially large burden will be placed on new VoIP players and as such this will seriously impede competition in the U.S. telecom market. VoIP may be the most important technology market that this nation has at the moment. Many of the leading companies in this space such as Cisco Systems and Avaya are U.S. based. The VoIP market might even be considered to be strategic depending on how you perceive technologies that are growing at breakneck speeds and doing an immense amount of good for consumers and business at the same time.

In closing, I request respectfully that you at least keep an eye on this market, and you keep in mind the important role VoIP plays in the world stage and the nation's economy.

Thank you in advance for your consideration. IT

Rich Tehrani, President, TMC

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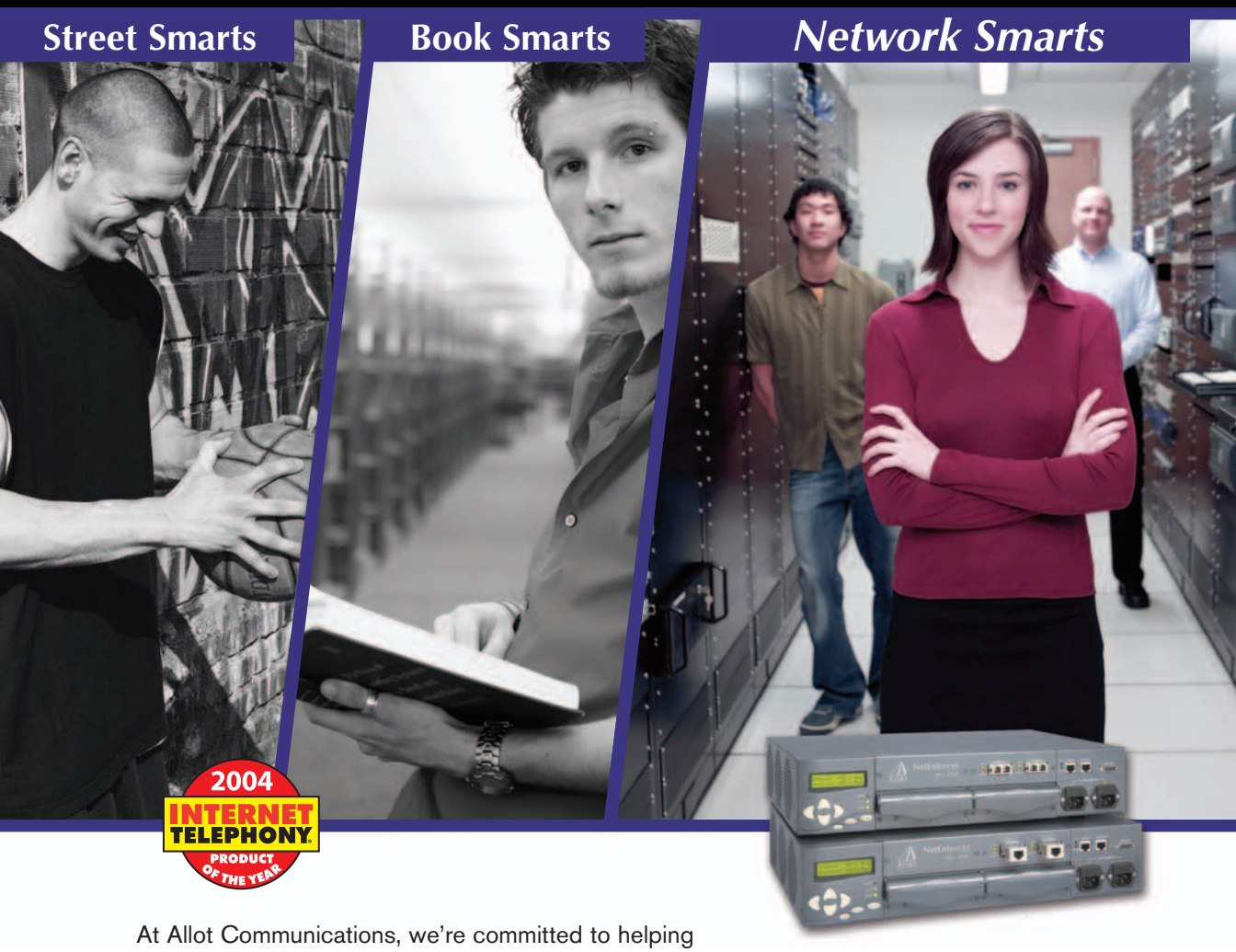
The Brains Behind some of the world's most Advanced Networks



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Allot Communications

The Traffic Management Company™

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Polycom Launches Content Sharing Appliance

Polycom, Inc.,(news - alert) has announced the availability of Polycom QSX, a new Voice+Content solution that enables anyone using a Polycom conference phone to easily and securely share computer content with remote meeting participants. Polycom QSX is an upgrade solution that enables customers to leverage more than 1.7 million wired SoundStation conference phones already installed worldwide. It enables fast, ad-hoc content sharing for anyone in the conference call without requiring special software applications, on-going usage fees, or document uploading.

Polycom QSX improves productivity by addressing the content sharing needs of everyday meetings with up to 15 participant locations. Participants see content in one of two ways: QSX-enabled rooms see the content automatically though the room's projector or display; locations without QSX can see the content through a standard, Java-enabled web browser. Polycom QSX is a new way of meeting and sharing content and is a natural extension of how people meet today in conference rooms — dialing the conference phone and presenting through a projector or VGA display.

"QSX is a small appliance that serves as a 'hub' for the conference room, connecting the conference phone, projector and Internet connection to enable high quality, secure and fast content sharing capabilities without adding more clutter to the table," said Sunil Bhalla, senior vice president and general manager of voice communications at Polycom. "This solution allows workers the freedom to walk into a meeting and immediately share their computer screen with remote locations without wasting valuable time on meeting set up. QSX addresses a market need in the conference room for ad hoc, everyday meetings."

QSX is designed to be a versatile plug-and-play tool that anyone can use. Since the presenter connects simply with a VGA cable, anyone who walks into the room can present content instantly to everyone on the call, even if they are a visitor using a Macintosh without any individual access to the LAN. QSX is designed to enable people to show virtually any type of computer content instantly and to show changes, or switch applications as the meeting progresses. The system also provides an integrated web viewer capability so participants in locations without QSX can see the presentation through a standard browser.

A QSX meeting can support a total of 15 sites, more than enough to handle the average number of locations on most conference calls today. It supports a combination of up to five QSX systems and up to 10 web viewer participants.

Polycom QSX systems are now available worldwide through Polycom Certified Partners authorized to sell Polycom voice products. Manufacturer's suggested retail pricing starts at $1,299.

http://www.polycom.com

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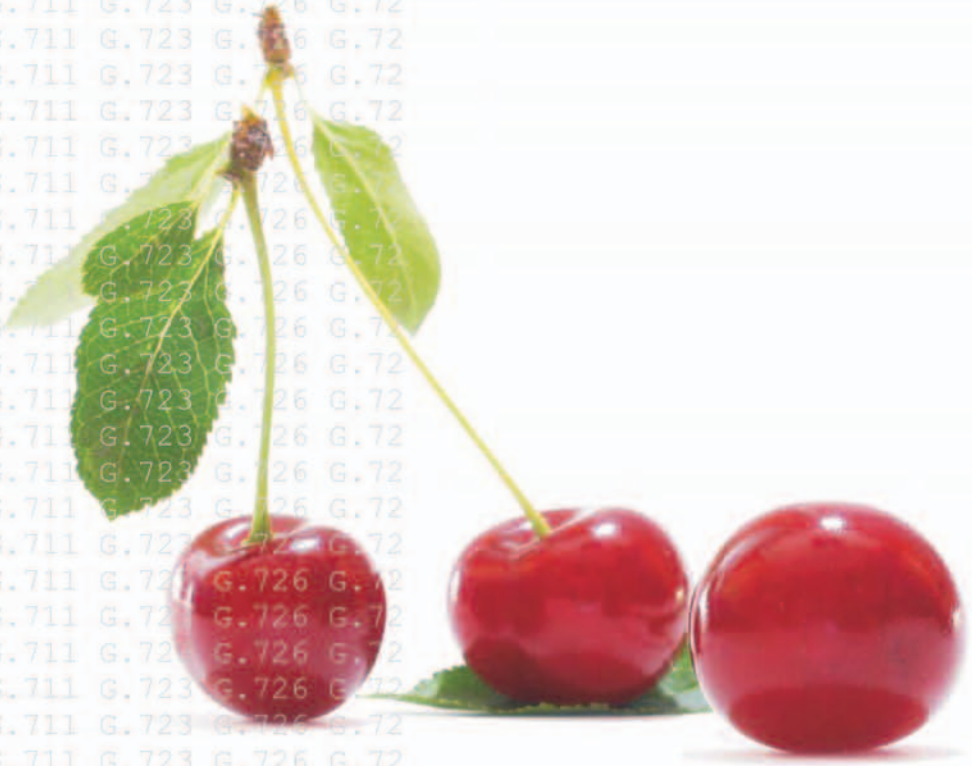
VoIP Gateways with ~~a~~ 3 cherries on top!



Killer Apps from our Award Winning Media Gateway

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One touch conferencing has never been so easy, smart or lucrative. CallPods enables service providers of any size to offer this must-have application of tomorrow, providing a rock solid and long-term revenue stream.

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VERSATEL NETWORKS

PowerDsine Unveils Power over Gigabit Ethernet Midspan For VoIP

PowerDsine Ltd. (quote - news - alert) recently unveiled its new line of Power over Gigabit Ethernet Midspans, announcing the 24-port 6024G model, which will be the first of the family to ship. PowerDsine's 6000G PoE Midspan family is designed to deliver safe power over standard Ethernet cabling to both existing 10/100Mbps and emerging Gigabit (1000Mbps) network devices, such as VoIP phones, Wireless LAN access points and IP network video cameras in enterprise installations.

PowerDsine's Power over Gigabit Ethernet technology is the first to market, supplying reliable power to 10/100/1000Mbps devices. When connected to a central Uninterruptible Power Supply (UPS), the 6000G models provide a cost-effective way to distribute power remotely while ensuring uninterrupted operation of the network during electrical power failure.

The PowerDsine 6000G PoE Midspan family offers long-term investment protection to enterprises by providing a scalable solution that will enable the deployment of new PoE applications and services without the need for additional upgrades, thus providing support for existing 10/100 devices, as well as future 1000Mpbs devices.

PowerDsine CEO Igal Rotem said, "The two main drivers for our 6000G Midspan line are emerging Gigabit IP phones and wireless LAN access points. In particular, the Gigabit IP phone benefits significantly because the IP phone and PC share the high-bandwidth pipe while reducing costs by consolidating power, data and voice on the LAN."

PowerDsine's 6000G PoE Midspan family is currently available for field trials, with general availability expected on July 1, 2005.

http://www.powerdsine.com

Toshiba Strata CTX Release 3.1 Coming Soon:

Exclusive to Internet Telephony: Toshiba (quote - news - alert) will soon ship Release 3.1 software for the Strata CTX digital business communications systems, which migrates the Strata CTX100 and CTX670 to a Strata CIX pure IP system. In keeping with Toshiba's promise to never leave any customers behind on new technologies, this upgrade gives Toshiba Strata CTX users all the benefits of the Strata CIX pure IP system, including:

- Peer-to-peer IP communications, plus the ability to add digital TDM where it makes sense.
- Toshiba's FeatureFlex adaptability feature that allows users to customize features or create new features.
- All features to all users, regardless of the type of device they are using, including IP telephones, IP wireless handsets, IP softphones on laptop PCs and PDAs, and both analog and digital telephones.
- Supports Toshiba's migration path for backward and forward compatibility.
- Migration allows users to maintain much of their existing equipment including Toshiba 2000- and 3000-series digital telephones, and trunk and station interfaces to legacy networks, which allows them to retain much of the initial investment in the system.
- No major training hurdles for users that migrate from Toshiba Strata CTX systems to Strata CIX functionality.
- Compatible with both Strata CTX100 (192-port version) and CTX670 (672-port version) systems.

http://www.toshiba.com/taistsd

Intoto Delivers Multi-Service Security Platforms

Intoto (news - alert) has recently announced a series of multi-service security software platforms for Small-to-Medium Enterprise (SME) gateway applications. Intoto expanded its iGateway RGS and iGateway EX software platforms and iGateway software modules with SSL-VPN, anti-virus (AV) and anti-spam (AS) functionality, to enhance its existing firewall, intrusion prevention and Web filtering solutions for improved secure access, threat management and productivity assurance.

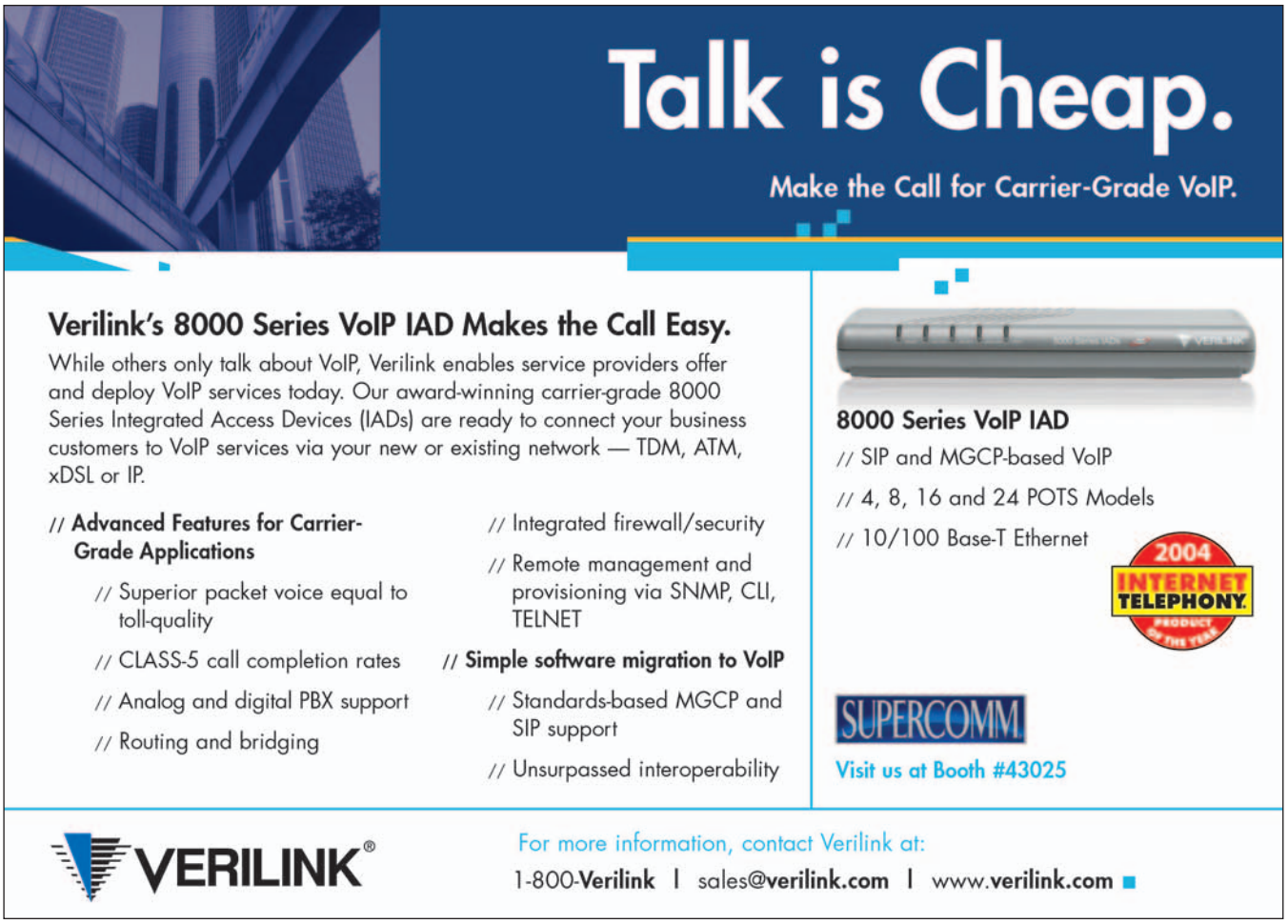
Intoto's new multi-service security software platforms are designed to allow OEMs to deliver integrated security appliances and converged business gateways, two of the most rapidly growing networking product segments.

Intoto's iGateway software meets the security requirements for applications such as unified threat management appliances, security appliances, security routers, secure WLAN AP and switches, and VoIP IADs. iGateway SSL-VPN allows users to securely access key corporate resources at remote locations through any standard Web browser. Additionally, integrated anti-virus and anti-spam features in the iGateway family provide a high level of data protection from malicious attacks and inappropriate or unwanted content.

iGateway SSL-VPN complements Intoto's current VPN solutions by enabling access to applications to remote users such as telecommuters, mobile employees, customers, and partners. Depending on data sensitivity, the levels of security vary per application that is accessed by mobile or remote users. Because SSL is already widely deployed on PCs and Web browsers, minimal or no client software installation is needed. Its simple management and easy connection makes it ideal for network administrators.

Both iGateway AV and iGateway AS augment Intoto's firewall, intrusion prevention and Web filtering to improve productivity by eliminating workplace nuisances such as spam, viruses, worms, Trojan-horses, and phishing schemes.

http://www.intoto.com



Zultys Announces New IP PBX: MX30

Zultys Technologies (news - alert) announced the addition of a small and powerful product to its family of Media Exchanges. The MX30 integrates voice, data, video, and fax, and provides the functions of an IP PBX, firewall, NAT, and VPN — a complete solution for the small business, all in a single appliance. The MX30 is premise based, allowing companies to have complete control over their internal communications.

"Small and medium sized enterprises are eager to take advantage of the business-grade VoIP services offered by the new breed of internet telephony service providers," said Wes Rogers, founder and vice president of marketing and sales at nexVortex, a Zultys Technologies partner. "The MX30 is a market-changing product because it is the first in its class designed on the assumption that an organization will connect to the world using an internet telephony service provider rather than a traditional TDM carrier. This means that the same cost savings and benefits associated with an IP PBX solution can be applied to services that reach beyond the traditional boundary of the enterprise.

Where most of today's IP-based systems still route calls over the PSTN, the MX30 utilizes a broadband connection and SIP (Session Initiation Protocol) to receive and route all calls. By using SIP, the MX30 can connect with other manufacturers' boxes, a multitude of third party phones (hard or soft), and a host of other devices and applications. Other standards supported include TAPI, which allows calls to be made with Outlook and other popular CRM products, and VoiceXML.

The MX30 provides complete support for remote workers by including VPN access. This gives users connected over the Internet the same access to all features and functions as those users residing in the office. Speech compression is incorporated into the MX30 to reduce the bandwidth required by remote users.

http://www.zultys.com

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Quick Hits

Empirix Brings Hammer On Site For Enterprise VoIP Testing

Empirix, Inc.(news - alert) , launched a new service that brings its Hammer technology on site to perform VoIP infrastructure and application testing for enterprises.

Hammer On-Call for VoIP is based on a comprehensive approach that evaluates the quality of communications networks and applications on several levels. First, it determines call handling capacity of the VoIP network at the desired quality level by measuring voice quality at different loads, with different Codecs (compression rates), and different network and QoS (Quality of Service) configurations. Second, it combines remote and on-site call generation to test any desired scenario. Third, it blends TDM testing with a variety of VoIP protocols, including SIP, H.323, MGCP, etc. to help pinpoint and correct configuration, migration and interoperability issues before deployment.

http://www.empirix.com

Alcatel, Verizon Expand Managed Communications Solution

Alcatel (news - alert) and Verizon Communications (quote - news - alert) announced nationwide availability of Managed Communications Solution for small and mid-sized businesses (SMB) in the United States. Building on an existing agreement dating to October 2004, the companies will now offer Alcatel's OmniPCX Office voice, data, and Web communications platform, in conjunction with a choice of Verizon network services, and ongoing system maintenance and remote service management to customers nationwide in the U.S.

"We require a reliable telecommunications network to run our business as a managed service provider with a 7/24 call center," said Tom Pellegriti, chief financial officer at Inforonics, LLC. "The Alcatel/Verizon managed communications services solution enabled us to take advantage of advanced applications and service offerings, while minimizing our overhead requirements of equipment, staffing and costs. Both Verizon and Alcatel proved throughout the process that they understood our data, voice and Internet needs and that was evident in the creation of value added offerings, such as a comprehensive disaster recovery plan, that are critical to the future success of our business."

http://www.alcatel.com
http://www.verizon.com

VBrick Systems Advances Web-Based Video

VBrick Systems, Inc.(news - alert), announced VB6200, a video appliance designed to enable anyone with an Internet connection to capitalize on interactive video capabilities. VB6200 is a self-contained portable video appliance that enables organizations to leverage real-time video as a key communications tool. Using a simple remote control, users can set-up one-way streaming or two-way conferencing sessions at a click of a button.

VB6200 adds MPEG-4 multicasting communications for the EtherneTV Media Distribution System, VBrick's complete system for providing live and on-demand video to computers across the network. EtherneTV enables organizations to capture, deliver, store and manage DVD-quality video distribution across networked environments and the Internet.

VB6200, which is currently available, is Internet Streaming Media Alliance (ISMA) compliant, ensuring vendor interoperability with many of the popular software and hardware decoders.

http://www.vbrick.com

NFL Goes Long With Sony, GlowPoint

Sony Electronics, Inc.(quote - news - alert) , and Glowpoint, Inc.(news - alert), announced an agreement with the NFL Network, the television network dedicated to the NFL and the sport of football, to use the Sony-GlowPoint integrated IP-based video communication solution. The solution combines Sony's IPELA videoconferencing system with GlowPoint's patent-pending advanced IP-based video applications and network services.

http://www.sony.com
http://www.glowpoint.com

ViseonMedia In Pact With Visa

ViseonMedia (news - alert) announced a marketing agreement with Visa to market to VisiFone Multimedia digital home telephone users throughout the United States. ViseonMedia's marketing partners will deliver full-motion interactive advertising and product promotions to VisiFone installed homes using ViseonMedia's content delivery platform. ViseonMedia expects to offer services to carriers and consumers abroad as well.

http://www.viseonmedia.com

Tripp Lite Ensures Availability For VoIP Apps

Tripp Lite (news - alert) has introduced a new suite of 5000VA UPS Systems to ensure the availability of server and networking hardware. Tripp Lite's new UPS Systems include a SmartPro line-interactive model and two SmartOnline true online models. Tripp Lite's new models provide extended runtime capability (with optional external battery packs) to support continuous telephone operation in the event of an extended power outage.

http://www.tripplite.com

Cisco Introduces The Cisco XR 12000 Series Routers

Cisco Systems (quote -news - alert) introduced the Cisco XR 12000 Series routers, which represents the combination of the Cisco Internetworking Operating System (IOS) XR software with the capabilities of the Cisco 12000 Series routers in a strategy designed to foster network convergence and extend investment protection for service providers. As with the Cisco CRS-1 Carrier Routing System, the Cisco XR 12000 Series is powered by Cisco IOS XR software, the industry's first fully modular, self-healing operating system designed specifically for carrier-class routing platforms that can scale and distribute processing. Cisco IOS XR software allows customers flexibility in terms of adding new features or patches via In Service Software Upgrades (ISSU), built-in reliability, and uptime.

Offering key features such as secure virtualization, continuous system operation, and multiservice scale, the Cisco XR 12000 provides intelligent routing solutions scaling from 2.5 gigabits-per-second (gpbs) to nX 10 gbps per slot. With its unique ServiceFlex design and Service Separation Architecture, the Cisco XR 12000 Series allows service providers to isolate public and private services through the secure virtualization of a single router into separate physical and logical routing domains.

Continuous system operation is based on the self-healing and self-defending capabilities of the IOS XR software, which is designed for always-on operation while scaling capacity and adding new services or features. And with distributed processing intelligence and robust quality of service and multicast mechanisms, the Cisco XR 12000 Series allows providers to scale service attach points like FR/ATM, L2/L3 VPN and customer attach points such as queues and access control lists, while simultaneously scaling performance. Also, Cisco's new Interface Flexibility (I-Flex) design for Shared Port Adapters (SPAs) and SPA Interface Processors (SIPs) provides broad interface options for the Cisco XR 12000 Series.

DFN (Deutsches Forschungsnetz), Germany's national research and education network that provides high-performance infrastructure for the German educational and research communities, has been evaluating the Cisco XR 12000.

"The modular design of the software in the Cisco XR 12000 dramatically enhances our ability to maintain service levels and performance," said Hubert Waibel, head of the Network Operating Center at DFN. "We are pleased with the progress Cisco is making to continually respond to our needs and add important features and capabilities that we can implement while maintaining high performance and complete stability."

Cisco is providing a full toolkit of conversion tools, product literature, training, as well as commercial upgrade kits to assist customers who wish to migrate now or over the next few years to the Cisco XR 12000 Series. This provides investment protection and a seamless transition for more than 25,000 Cisco 12000 routers deployed globally.

The Cisco XR 12000 Series is expected to be available this month. The base configuration for the Cisco XR 12000 starts at a list price of $45,500. Upgrade options for the Cisco 12000 routers start at a list price of $12,500.

http://www.cisco.com

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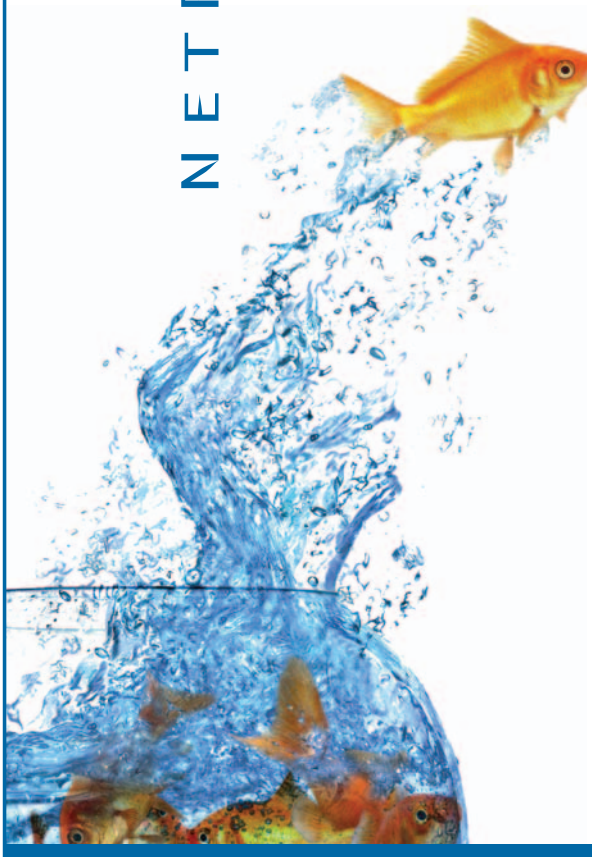

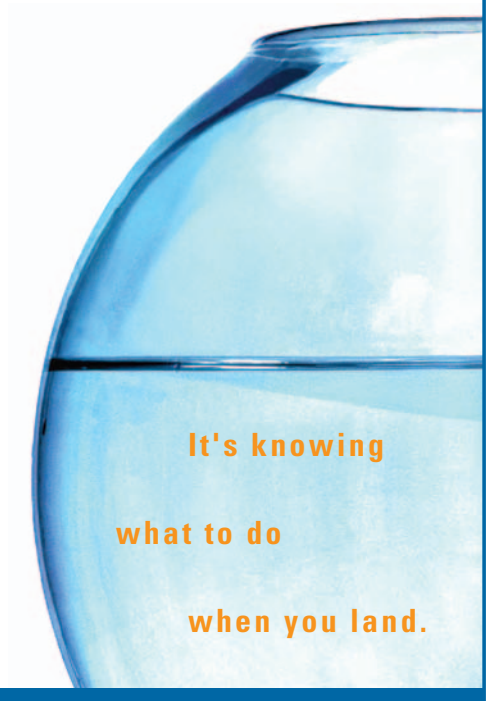

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www.netrake.com

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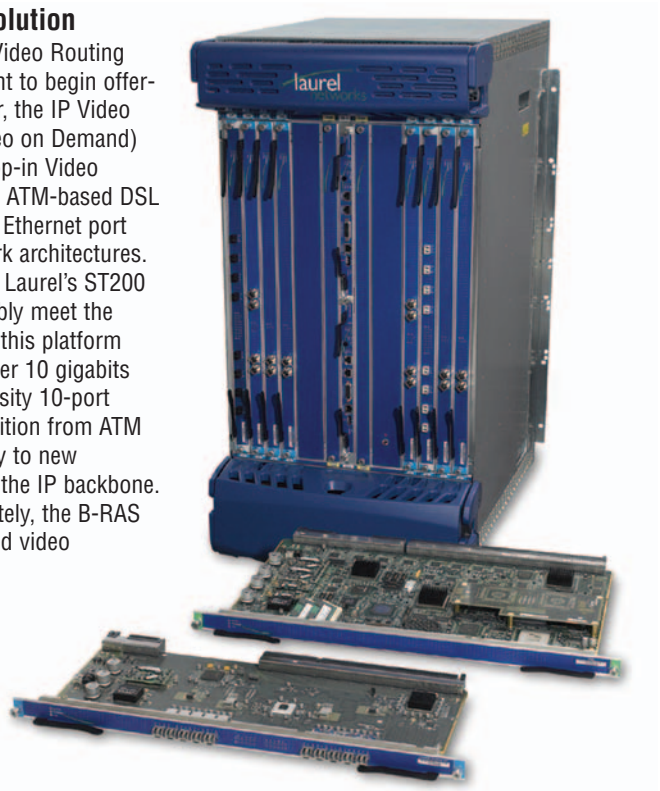
Laurel Networks Delivers "Drop-in" IP Video Routing Solution



Laurel Networks, Inc. (news - alert) announced a new "drop-in" IP Video Routing Solution designed to meet the needs of DSL access providers who want to begin offering video services. Based on Laurel's ST200 broadband services router, the IP Video Routing Solution enables highly-reliable broadcast IPTV and VoD (Video on Demand) services alongside high-speed Internet and voice services. Laurel's drop-in Video Routing Solution not only allows instant delivery of video over existing ATM-based DSL aggregation networks, it supports subscriber management and gigabit Ethernet port density to allow transition to higher-speed, Ethernet-based DSL network architectures.

"As the foundation for the new "drop-in" IP Video Routing Solution, Laurel's ST200 broadband services router provides the high scalability needed to reliably meet the bandwidth demands of delivering video services. Laurel has enhanced this platform with a new Ethernet-optimized network processing blade that can deliver 10 gigabits per second of wire-speed performance and a complementary high-density 10-port gigabit Ethernet physical interface card. As DSL access networks transition from ATM to IP, Laurel's gigabit Ethernet port density will allow direct connectivity to new Ethernet-based DSLAMs as well as provide high-speed connectivity to the IP backbone. For service providers who want to consolidate their networks immediately, the B-RAS capabilities of the Laurel platform allow it to be deployed as a combined video router/Internet service platform.

http://www.laurelnetworks.com

A Devil Of A Product For Business VoIP

Devil7 (news - alert), a fast growing UK VoIP service provider has chosen VegaStream as its OEM supplier of VoIP/TDM gateways and has re-branded the VegaStream range as the "Devil box" range. Targeting business customers, the Devil7 proposition is that by simply attaching the "Devil box" to their existing TDM equipment they will significantly reduce their phone bill and fully exploit the functionality of their TDM equipment.

Devil7 is part of the Fresh Media Group of specialist pre-print businesses servicing the quality print market. The original Devil7 business plan was to deliver VoIP services over the broadband network that has been built within the publishing community for large file image transfer applications. However the proposition is so powerful that it has found interest across the business market.

"We have a simple business proposition for the finance director. Connect your PBX to a Devil box and you can call all other Devil box users for free and dramatically reduce call charges to all other destinations," said Andrew Berg, co-managing director of Devil7. "VegaStream have been fully supportive of our business idea and so we negotiated terms that allow us to bundle the cost of the Devil box within the customer's service charge. The final proposition is a financial no brainer, especially when the customer has multiple sites," said Berg.

"We decided to work with VegaStream to create the Devil box because they could provide the range of kit that met all our market needs from a single line for home workers to large sites supporting 120 simultaneous calls," said Berg.

http://www.devil7.com
http://www.vegastream.com

SBC Communications Selects Amdocs For Project Lightspeed

SBC Communications Inc.(quote -news - alert), announced that it has awarded a multi-million dollar, multi-year contract to Amdocs to support Project Lightspeed, the SBC initiative to expand fiber optics deeper into neighborhoods to deliver IP-based TV, voice, and broadband services.

Amdocs will provide the SBC companies with a range of services to ensure high-quality customer service, as well as its IP (Internet Protocol) Convergence solution. The Amdocs IP Convergence solution is based on the Amdocs billing, customer relationship management (CRM), ordering and payment mediation products, combined with Amdocs consulting and systems integration services.

"The ability to rapidly launch competitive and innovative services, while delivering a differentiated customer experience, is essential for success in the new IP-based economy," said Lea Ann Champion, SBC senior executive vice president. "We look forward to working with Amdocs."

http://www.sbc.com
http://www.amdocs.com

Telic Adds Voicemail To VoIP Services Suite

Telic (news - alert) today announced the addition of the xVox Voicemail solution to its suite of managed VoIP services. The xVox Voicemail solution is a SIP based, software-only application specifically designed to be deployed in a service provider's data center . Available as an a'la carte offering, or integrated as part of Telic's SOHO Broadband solution, it provides all the functionality required to roll-out a business class SIP voicemail service to both enterprises and consumers. With administrative accessibility via Web or telephone, the xVox voicemail solution offers the convenience and flexibility that VoIP consumers demand.

Because the xVox voicemail solution was created using VoiceXML technology, it has the flexibility and extensibility necessary to support new features and capabilities in a timely and cost-effective manner. The system runs on commercially available off-the-shelf components and the Sun Solaris operating system, with no proprietry hardware or DSP boards required.

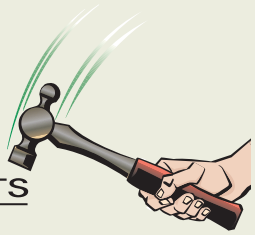
http://www.telic.net

Rodopi Launches Hosted AAA RADIUS

Rodopi Software (news - alert) has announced the launch of its Hosted AAA RADIUS solution, which collects up-to-the-minute usage information and strict user authentication for IP services in a fully hosted environment. Hosted RADIUS allows service providers to offer all types of metered usage applications, including VoIP, mobility, pre-paid cards, wireless hotspots and others by communicating allowable session time to gateways and access points. Session time is then collected by Hosted RADIUS and communicated to the OSS application for real time billing.

Combined with Rodopi's EasyOSS, Hosted RADIUS offers service providers a 100 percent web-based business platform that automates billing, provisioning, customer care and RADIUS functionality without the expertise and expense associated with building and maintaining data center facilities. Hosted RADIUS and EasyOSS are available to IP service providers now.

http://www.rodopi.com



Quick Hits

PointOne Launches Portal For Automated DID Provisioning

PointOne (news - alert) will provide a portal for automated selection and automation of direct inward dial (DID) phone numbers to wholesale customers and distributors of its VoIP services. The new service is designed to eliminate the delays and the cost of manual provisioning of DIDs.

http://www.pointone.com

Report Sees VoIP Market Appraching $20B

North American voice over IP service revenue topped $1.3 billion in 2004, and is expected to soar 1,431 percent to $19.9 billion in 2009, according to a recent Infonetics Research's report. Among the highlights, the number of residential/SOHO VoIP subscribers in North America is forecast to climb from 1.1 million in 2004 to 20.8 million in 2008

http://www.infonetics.com

Cable & Wireless, Net2Phone Launch Residential Service

Cable & Wireless (news-alert) of Cayman announced its new residential broadband telephony VoIP service, branded as "NetSpeak," to its customers across all three of the Cayman Islands. NetSpeak is the second VoIP-based product that Cable and Wireless (Cayman Islands) Ltd. has launched in conjunction with Net2Phone

http://www.net2phone.com
http://www.cwinternet.ky

Rio Rancho, NM: Municipal Voice over WiFi No Longer Just Under The Microscope

By Robert Liu

This week, much of the wireless LAN (WLAN) community again reconvened in Philadelphia to discuss government's role in wireless networking. And while the merits of "social good of government-sponsored WiFi versus free market trade" are debated, one thing is clear: Talk is cheap!

Take case in point Rio Rancho, NM. The city of 64,000 residents, which is sometimes referred to as "Silicon Mesa" because of the number of high tech companies headquartered there, has rolled out a carrier-class, metro-wide Voice over WiFi telephone service that competes with the traditional incumbent's local loop. The VoWiFi (a.k.a. VoWLAN) network is believed to be the largest of its kind deployed in a metropolitan area in the U.S.

The deployment represents the combined efforts of Azulstar Networks of Grand Haven, Mich., who served as the system integrator; Ecuity of Bellevue, Wash., who was the VoIP service provider; Meru Networks of Sunnyvale, Calif., who was the WLAN equipment vendor; Proxim, who handled the pre-WiMax backhaul; and local officials.

"By partnering with governments, technology leaders and other service providers, we are able to quickly design and deploy Wi-Fi / WiMAX mobile networks and services like the one we've deployed in Rio Rancho," said Tyler van Houwelingen, Azulstar CEO.

The coverage area spans over 60 percent of Rio Rancho and is now available for residential, business and mobile telephone users throughout the 505 area code. Pricing for residential fixed/mobile phone service has been set at $29.95/line for unlimited calling within the USA and Canada.

The Azulstar (news - alert) Business service adds 4-digit inter-company calling, a fax line and a Soft-PBX, which eliminates PBX hardware and provides a suite of centralized call control. In a press release, Azulstar said it expects typical small business to save between 40 to 60 percent off of their current bill and in most cases can leverage existing hardware.

The service comes as the latest research shows VoIP revenue topped $1.3 billion in North America last year. The market for VoIP services is projected to skyrocket to $19.9 billion by 2009, according to Infonetics.

"As carriers migrate their network towards IP over the next 5 years, more services are inevitably next generation VoIP services. This is a very early look, as VoIP services revenue represents less than 1 percent of total wireline carrier revenue in North America in 2004," said Kevin Mitchell, directing analyst for Infonetics and author of the report.

The Rio Rancho network uses some 200 access points provided by Meru Networks. The data portion of the WiFi cloud went live back in January. Through Ecuity, the voice service is now fully SIP-compliant. Features included with all calling plans include caller ID, call forwarding, voice mail over e-mail, multi-party calling, call waiting and Web based call control manager.

Azulstar said it also plans to add seamless roaming in and out of cellular CDMA and GSM networks later this year.

According to In-Stat, about 85 percent of respondents to a recent survey said they were interested in using dual-mode VoWLAN/cellular handsets.

http://www.azulstar.com

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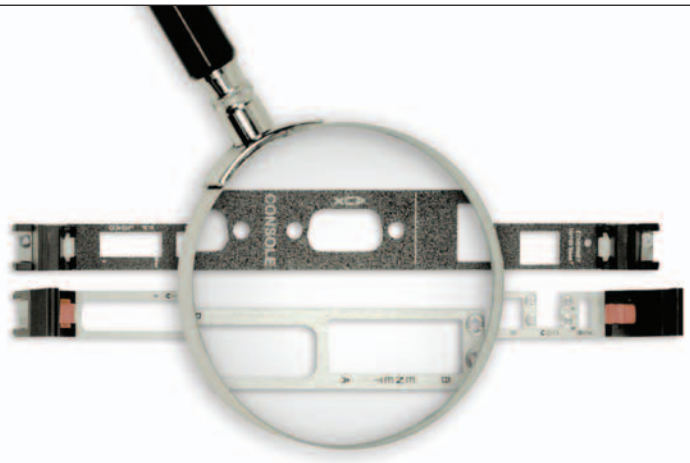
Symbol Expands Wireless Security, Management Portfolio

Symbol Technologies, Inc. (news - alert), announced a suite of products designed to enable a higher level of security for wireless networks and continue driving the adoption of enterprise mobility. New product line enhancements include the Symbol Wireless Intrusion Protection System (IPS) security solution; RF (radio frequency) Management, a network performance and management tool; and the next generation WS2000 wireless switch. All products will be generally available beginning in the third quarter.

Symbol Wireless IPS is a security solution for monitoring, detecting, and preventing intrusions to a wireless network. Wireless IPS is fully integrated within Symbol's enterprise-class wireless switch portfolio, enabling comprehensive wireless network security. As WiFi becomes the new network edge — the point where a user, mobile devices, and services access the network — the wireless network can become difficult to define and control. Wireless IPS is designed to alert IT and network security managers of network utilization policy violations, internal and external attacks, bandwidth stealing and threats to the network integrity. Wireless IPS will detect and protect the network from any unauthorized and malicious radio-based device or activities. IT and network security managers that do not allow Wi-Fi access to their networks can be confident that this policy is being enforced with Symbol's Wireless IPS.

http://www.symbol.com



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Front Panel LEDs
- Blue LEDs meet IEEE 1101.10 hot swap specifications
- Surface mount LEDs designed for IEEE front panels
- Switches and test jacks designed for IEEE front panels

SpectraLink Demonstrates First Of Its Kind Wi-Fi Handset

SpectraLink Corp. (news - alert) recently demonstrated its commitment to interoperability and industry standards with a live demo of the industry's first WiFi handsets to support new wireless security and quality of service (QoS) standards. SpectraLink's NetLink Wireless Telephones support the WiFi Alliance's WPA (WiFi Protected Access) and WPA2 security specifications, which are based on the IEEE 802.11i standard. The WPA and WPA2 specifications provide wireless LAN security solutions that are compatible with new and existing WiFi infrastructure equipment. With support for the WiFi Alliance's WMM (WiFi Multimedia) QoS specification, which is based on the IEEE 802.11e standard, NetLink Wireless Telephones provide excellent voice quality while sharing a Wi-Fi network with other voice and data applications.

SpectraLink's NetLink Wireless Telephone portfolio is designed to meet the communication needs for enterprises of any size in an array of industries. NetLink Wireless Telephones operate as client devices on wireless LANs utilizing the IEEE 802.11b (WiFi) global standard, allowing converged mobile voice and data applications on a single wireless infrastructure. SpectraLink Voice Priority (SVP), a quality of service (QoS) mechanism, is employed on the wireless LAN to ensure excellent voice quality with minimal impact on data throughput.

http://www.spectralink.com

Report: Wireless Equipment Market To Reach$29.3 Billion By 2008

WiFi (define - news- alert) and WiMAX (define - news- alert)infrastructure revenue are expected to reach $5.2 billion and $115 million respectively in 2005, according to TIA's 2005 Telecommunications Market Review and Forecast. The WiFi equipment market is increasing at a fast pace and will continue to grow as hot spots proliferate. An emerging WiMAX equipment market will also contribute to growth in the coming years. The report maintains that revenue from spending on wireless capital expenditures/Wi-Fi/WiMAX are expected to reach an estimated $22.3 billion in 2005, climbing to $29.3 billion by 2008, a 7.1 percent compound annual gain.

Spending on services in support of the wireless infrastructure (including WiFi and WiMAX), such as basic services and support (e.g., field maintenance and repair), professional services, and depot repair and logistics rose 13.6 percent in 2004, rebounding from the 31.8 percent drop in 2003 associated with the drop in wireless infrastructure spending.

"With the Wi-Fi and WiMAX markets expanding rapidly, we will begin to see more demand for mobile broadband and broadband connectivity. Major carriers such as SBC, Verizon and Sprint have already announced deals to expand the number of hot spots and to broaden their networks," stated TIA President Matthew J. Flanigan. "It is likely that both of these markets will stimulate the overall broadband market to the benefit of all technologies."

http://www.tiaonline.org

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Aculab Announces Prosody X Next Generation Media Processing

Aculab (news - alert) has announced the launch of its next generation media processing resources platform — Prosody X.

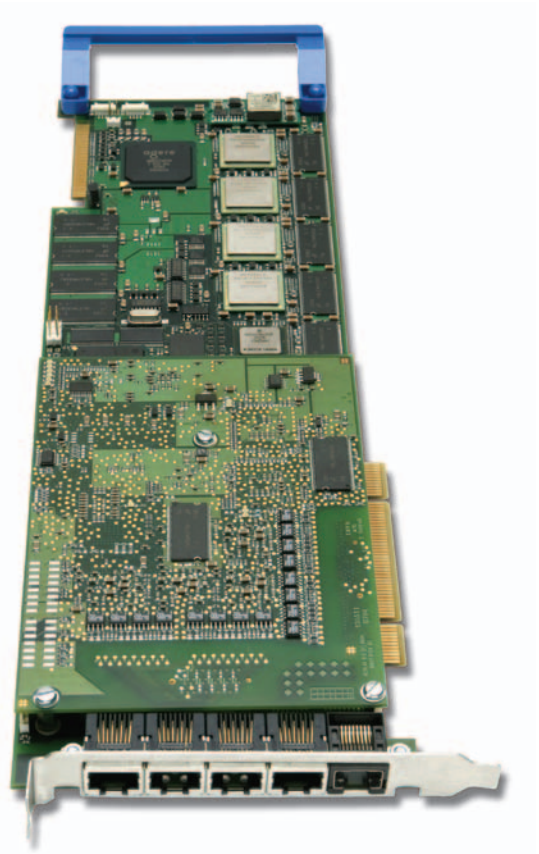
For developers seeking maximum flexibility and value per channel, Prosody X provides a highly configurable card that combines Aculab's proven media processing resources, IP telephony and TDM digital network access functions.

Unlike competitors' cards that offer a fragmented set of functions focused toward one application only, Prosody X offers the ultimate flexibility to developers who can select the functions required to scale a wide range of low to high density applications. On-board IP architecture makes the product distributable amongst different chassis platforms offering resilience and scalability as well as future proofing solutions as they move to IP.

Preliminary channel counts for fully configured cards with basic speech processing are running at 1200 for the cPCI and 600 for PCI variants. Its rich blend of basic and advanced speech, fax and data features coupled with the price makes Prosody X an extremely attractive option for any developer looking to create large scale VoIP applications like IVRs and ACDs.

Speaking about the launch, Chris Gravett, Aculab's Sales and Marketing Director said, "This is an exciting time for Aculab. We're confident that Prosody X is going to take the industry by storm. We already have demand from customers who can't wait to get their hands on the product and we know that they will be extremely impressed when they deploy it in their solutions. The pricing strategy is set to be aggressive, ensuring the best value for our customers whilst growing our market share."

http://www.aculab.com



GL Communications Introduces New Boards

GL Communications, Inc. (news - alert), announced the release of a new generation of high density (HD) T1/E1 boards. This new series of T1/E1 HD boards is designed to process hundreds of channels or timeslots simultaneously on T1 and E1 lines. These boards are smaller, more efficient, and significantly faster as compared to PCI boards, and they are fully compatible with the latest T1/E1 software that includes several new applications and enhancements.

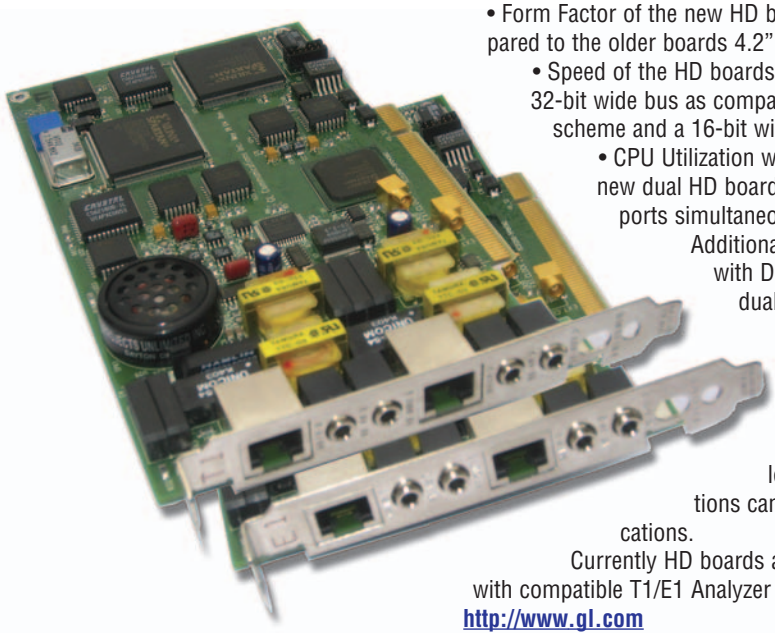
Some highlights of the High Density T1 E1 boards:

- Form Factor of the new HD boards is much smaller, its size being 4.2" x 7.1" as compared to the older boards 4.2" x 9.2".
- Speed of the HD boards is significantly greater. The new boards use DMA and a 32-bit wide bus as compared to the older boards that used an interrupt driven scheme and a 16-bit wide bus.
- CPU Utilization with the newer boards is negligible. One can easily put 12 new dual HD boards in one rack system running many applications on all 24 ports simultaneously.

Additionally, unlike older boards, new HD Boards are compatible with Dual Processor motherboards and software that simulates dual processors (i.e. Hyper-Threading). Improved On-Board Logic provided by upgraded FPGA can handle almost all specialized functions with a single load mechanism unlike the multiple loads on older boards. This permits special applications to be run simultaneously without T1/E1 line interference associated with unloading and loading of multiple applications. For example FDL applications can be run simultaneously with BERT or Error Insertion applications.

Currently HD boards are only available in Dual T1 and Dual E1 port versions with compatible T1/E1 Analyzer Software.

http://www.gl.com



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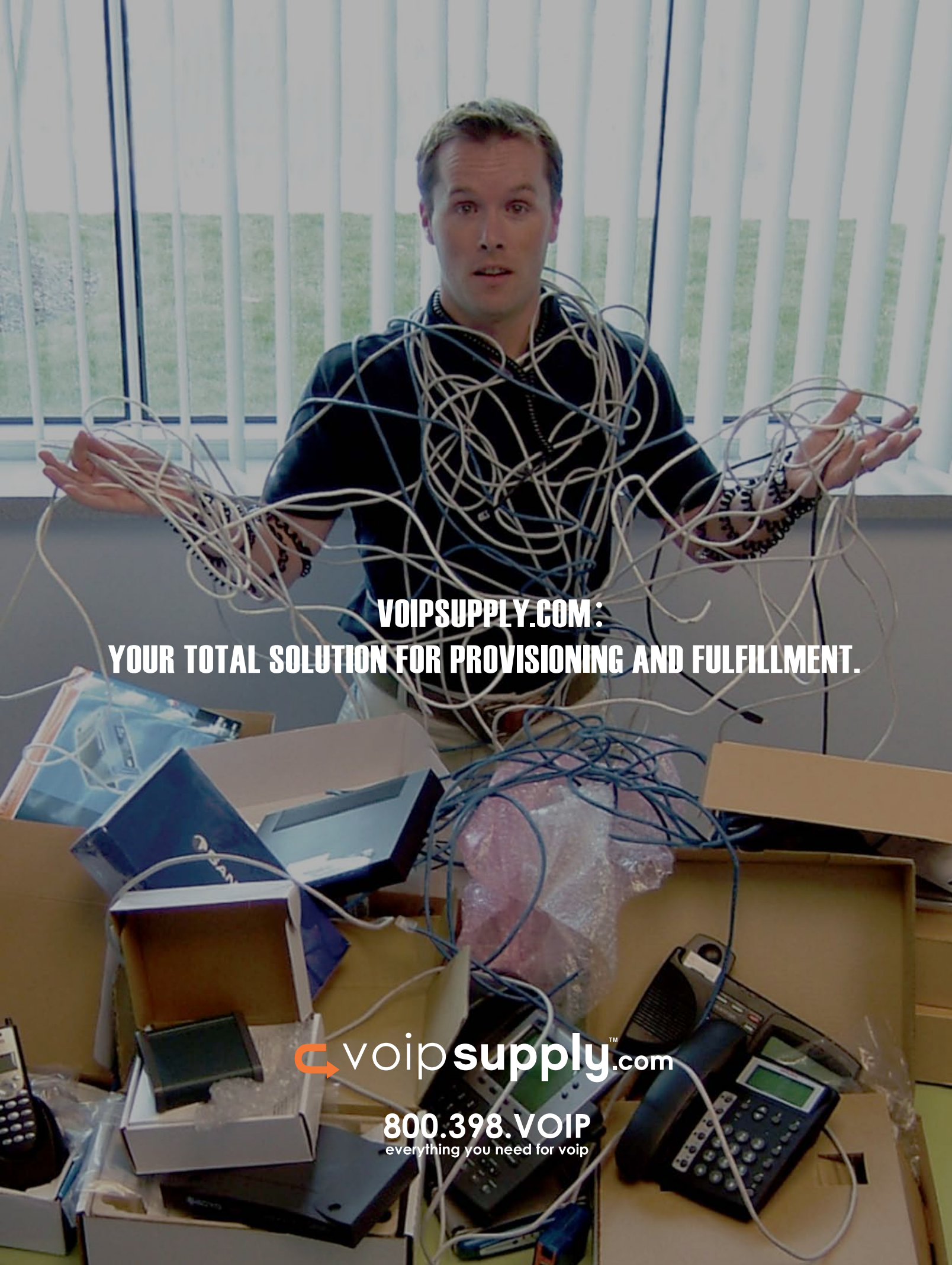
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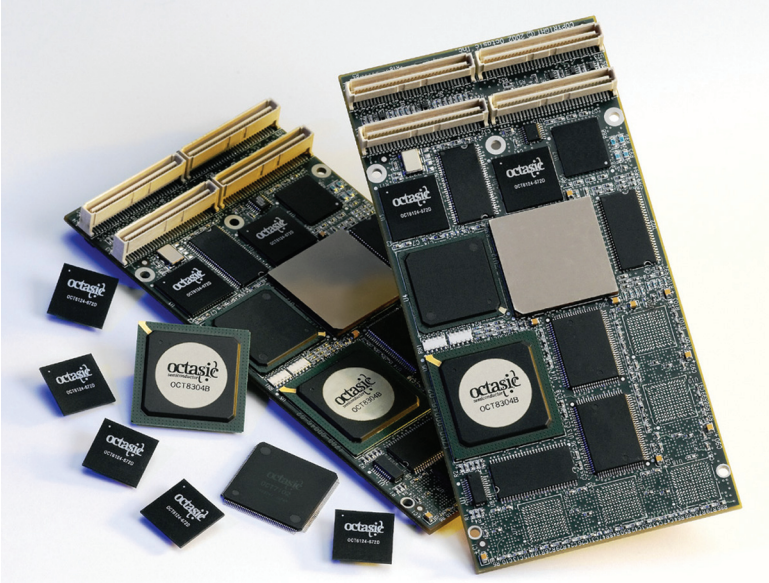
STMicroelectronics, Octasic In Agreement On ICs

STMicroelectronics (news - alert) , and Octasic, Inc. (news - alert), announced that the two companies have signed an agreement to deliver a family of leading-edge Voice-over-Packet (VoP) ICs.

The first ICs developed under this agreement will be based on ST's world-class 0.13-µm and 90-nm semiconductor process technology and Octasic's designs for Voice over Packet (VoP) and Voice Quality Enhancement (VQE), which includes technology for line and acoustic echo cancellation, noise reduction capabilities, vocoding and packetization. The first IC of the family will be available in Q205, with the second one shortly afterwards. The agreement also provides for the development of future system-on-chip (SoC) VoP devices which will be implemented in 90-nm and below process technologies.

Michel Laurence, CEO of Octasic, said "A successful business relationship is built by forming alliances that help customers obtain a reliable source of high-performance technology."

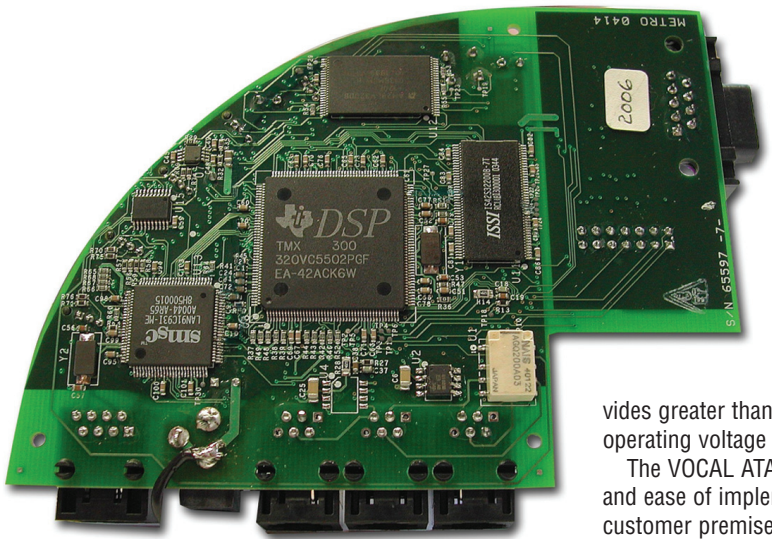
http://www.octasic.com
http://www.st.com



VOCAL Announces Single-Processor VoIP ATA

A single-processor design announced by VOCAL Technologies, Ltd. (news - alert) will enable the development of inexpensive equipment that allows homes and small businesses to add telephone lines to their broadband services. VOCAL's innovative reference design for a VoIP analog telephone adapter (ATA) is based on the TMS320C55x low-power digital signal processor (DSP) generation and analog technology from Texas Instruments.

VOCAL's ATA reference design incorporates TI's TMS320C5502 DSP alongside power management and analog logic devices. The C5502 device provides all the signal processing and control functionality needed to digitally encode and decode two conventional analog phone calls, then packetize them for transmission using the Internet Protocol (IP) over a broadband service provided by a cable or DSL modem. The programmable 200-megahertz (MHz) C5502 DSP from TI enabled VOCAL to integrate all of the necessary software functions and still have more than 25 percent of the DSP's performance left over for future product enhancements.



The VOCAL ATA design also incorporates five high-performance analog power management and analog logic devices from TI to efficiently manage the ATA's power system. The TPS54350 SWIFT (Switcher With Integrated FET Technology) 3-A DC/DC converter provides greater than 90 percent efficiency with its accurate regulation of operating voltage down to 0.891 volts.

The VOCAL ATA design promotes cost-efficiency, fast time-to-market and ease of implementation for value-added features in a broad range of customer premise equipment.

http://www.vocal.com

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REPELS INTRUDERS,
EMBRACES SIP PROTOCOL

Moving to VoIP shouldn't create security issues for your business. It should eliminate them. That's why the Zultys MX250 IP PBX runs on a real-time Linux operating system that is secure and not vulnerable to attack. And, since encryption is a standard feature, it is impossible for anyone to intercept sensitive communications. Best of all, the Zultys MX250 does all this straight out of the box. To learn more about adding secure VoIP, access www.zultys.com/it today.

ZULTYS
VoIP vs. VoIQ

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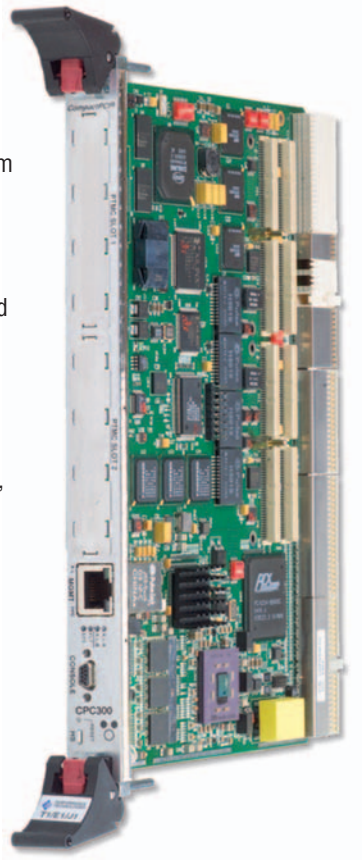
Performance Technologies Unveils New IPnexus Blade

Performance Technologies (news - alert) introduced the IPnexus CPC300 Advanced PTMC Carrier Blade, allowing system integrators to flexibly create custom functionality by populating it with industry-standard modules to fulfill their specific application requirements.

The CPC300 can be used with a wide array of PTMC modules available today, ranging from telecom I/O cards, DSP cards or packet processing modules. Developers can then use the CPC300 and the NexusWare Core environment to yield equipment such as media and signaling gateways, wireless infrastructure equipment, IP media equipment, telecom switching/routing equipment and SS7 network elements.

The CPC300 comes equipped with NexusWare Core, Performance Technologies' Linux-based board support package (BSP) that provides a powerful development, integration and management environment. Pricing for the CPC300 starts at $4,695, and it is available immediately.

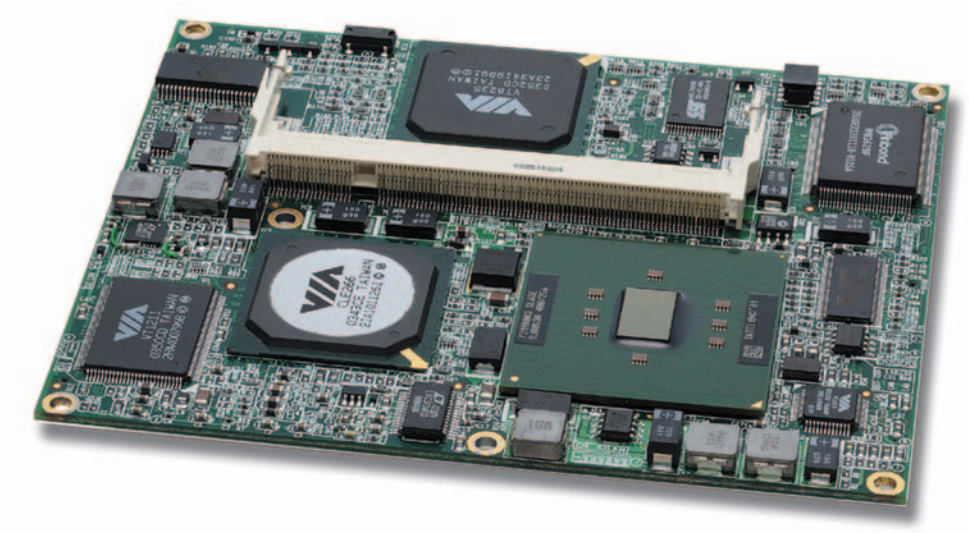
http://www.pt.com



ADLINK Releases Latest COM

ADLINK Technology Inc. (news - alert), has released its latest Computer on Module (COM) based on the ETX form factor, the ETX-IV266. The new ETX-IV266 supports ULV Mobile Intel Celeron at 400/650MHz or LV Mobile Intel Pentium III-M at 800/933MHz in an uFCBGA package (soldered onboard). This is the only module in the market in the low-to-medium performance class that supports DDR-based SODIMMs. The onboard 200-pin SODIMM socket supports up to 1GB.

The ETX-IV266 comes with standard support for embedded features such as RS-232 console redirection, watchdog timer, COMS EEPROM backup of BIOS settings for battery-less operation, USB booth/legacy and PXE. The board has been designed to minimize power usage and heat dissipation allowing fan-less operation when using ULV Celeron type processors.



ADLINK Technology's ETX product line includes modules based on the low power VIA Eden ESP CPU, Mobile Intel Celeron and Intel Pentium M processors. For core module evaluation, a prototype board with ATX form factor is available. All modules are supported by BSPs for Microsoft Windows XP Embedded, Windows CE.NET, Linux and VxWorks.

http://www.adlinktech.com

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Quick Hits

Voxeo Achieves VoiceXML 2.0 Platform Certification

Voxeo Corporation (news - alert) announced that its Voxeo VoiceCenter v6.0 IVR platform has been awarded VoiceXML Forum Platform Certification. The Voxeo VoiceCenter platform passed more than 600 independently tested assertions in the VoiceXML Forum's VoiceXML 2.0 test suite, making it one of only five available VoiceXML certified platforms.
http://www.voxeo.com

Fluke Offers New VoIP Tester

Fluke Networks (news - alert) announced today a major new inline network test tool. NetTool VoIP combines cable, network, IP phone, and PC configuration testing into a single device. In addition, the new features of NetTool VoIP give users the ability to monitor VoIP service at the edge, enabling technicians to see into VoIP calls by connecting between the phone and the network.
http://www.fluke.com

TI Announces Latest High Performance DSP

Texas Instruments (quote - news - alert) announced production-qualified samples of its TMS320C6418 digital signal processor (DSP) at 500 megahertz (MHz). This new device features a well-balanced combination of performance, memory, peripherals and price for applications such as telecommunications, software radio and broadcast equipment. Spectrum Digital, a member of TI's third-party developer network, offers an Evaluation Module (EVM) for the C6418 DSP.
http://www.ti.com

Shunra Virtual Enterprise 3.5 Launched

Shunra Software Ltd., (news - alert) announced version 3.5 of its Shunra Virtual Enterprise solution. The new version addresses some of the most pressing areas of concern for IT professionals today, delivering enhanced automation for rapid testing and assurance of dynamically-changing network environments such as disaster recovery, business continuity, network load balancing, and data integrity. This version also includes expanded integration with related performance solutions, including Segue Software's SilkPerformer, and scalability for modeling large distributed enterprises.

Key new features of Shunra Virtual Enterprise 3.5 include:

- Enhanced dynamic network emulation.
- Expanded end-user automation and integration.
- Enhanced scalability.

"The increasing complexity of today's network infrastructures and applications is matched by management demands for increased flexibility, reliability, availability, and security. Whether it is large corporate users, offshore companies, or ISVs, all face demands for higher performance and quality in services and deliverables," said Michael Azoff, Senior Research Analyst, Butler Group. "This latest version of Shunra's Virtual Enterprise solution includes a number of enhancements that help customers face these challenges, and enable them to reduce risk in running large and/or complex IT departments, especially where mission critical applications are involved."
http://www.shunra.com

IBM Brings WebSphere To Cisco's Customer Voice Portal

By Robert Liu

When Laurent Philonenko left Genesys Telecommunications Labs last June and later re-emerged at Cisco Systems (quote - news - alert), IBM's (quote - news - alert) call center guru Bruce Morse saw it as an opportunity to open the networking giant's eyes to the role that speech technologies can play in the call center arena.

Philonenko, who worked for Genesys' parent company Alcatel prior to joining the call center software company in 2000, quickly rose through the ranks going from Senior Vice President and General Manager for Genesys' Service Provider Business Unit to Executive Vice President and CTO. In August 2002, he became COO and in December 2003 added the responsibilities of President and CEO. But six months later Philonenko left Genesys.

While the circumstances surrounding his departure remain uncertain, one thing was clear. Philonenko's arrival as Vice President and General Manager of Cisco's Contact Center Business Unit meant that he brought with him a solid understanding of how Cisco could incorporate IBM's platforms and technologies to expand its role in the call center industry.

"Laurent brings a different perspective to Cisco," Morse, Vice President of Contact Center Solutions within IBM's Software division, told TMCnet during a recent telephone briefing.

As Genesys CTO, Philonenko struck an alliance with IBM to deliver vertical market-specific contact center and CRM solutions. And with him now at Cisco, Morse found an ally that would help expand the existing ties that IBM Global Services had with Cisco.

As a result, IBM today is announcing it has partnered with Cisco to deliver speech-enabled self-service solutions to contact centers using IBM's WebSphere Voice Server and Cisco's Customer Voice Portal. Global availability of the joint Cisco and IBM solutions is planned for the second quarter of 2005.

IBM is primarily targeting contact centers in banking, insurance, telecommunications, healthcare, energy and utilities, retail, travel and transportation and consumer packaged goods. The solutions will initially support US, UK and Australian English; Chinese; Japanese; German; Spanish and Canadian French.

"The close integration of these technologies helps companies incorporate speech into today's enterprises, ensuring the highest quality of service is delivered from any global location," Philonenko said in his prepared statement.

But by adopting the WebSphere middleware platform, Cisco is also shutting the door on some of its customers that rely on an all-Microsoft environment. That's because IBM's application server relies on XML data to be parsed out in the VoiceXML standard while Microsoft uses Speech Application Language Tags (SALT) as a standard.

For example, Cisco has a partnership with Microsoft to enable its IP Communications Connector to support small- to medium-sized businesses (SMBs) using Microsoft Business Solutions CRM. But if any of them wanted to incorporate speech-enabled self-service solutions onto those CRM systems, those customers would be hard pressed. Morse said IBM currently has no connector modules that would enable cross-platform interoperability with WebSphere Voice Server.

To be sure, most IVR vendors have endorsed the VoiceXML standard, Morse said. And with this partnership, Cisco Customer Voice Portal will incorporate not only VoiceXML but also the open standard of Media Resource Control Protocol (MRCP), which facilitates integration of speech recognition and text-to-speech.

Cisco also will support IBM's Reusable Dialog Components (RDC) initiative. RDCs are an open source, Java-based set of pre-built components that aid in the rapid development of speech applications. By offering software components using standards and programming models that Java developers are familiar with, the initiative has opened up speech development to millions of Java programmers, and speeded integration of Web and voice applications into the mainstream business infrastructure, the companies said. IBM contributed RDCs to the Apache Software Foundation last year.

http://www.ibm.com
http://www.cisco.com

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Interactive Intelligence Announces Contact Center Suite Enhancements

Interactive Intelligence Inc.(quote - news - alert) , has announced enhancements to its contact center suite — Customer Interaction Center (CIC). The software upgrade provides broader desktop client support through several new client interfaces, as well as the introduction of enhanced Web self-service and e-mail response management capabilities.

"Our latest client enhancements were designed for faster deployment, simplified management, and more flexible and efficient communications," said Interactive Intelligence president and chief executive officer, Dr. Donald E. Brown.

With this latest release, new options to CIC provide client integrations for Microsoft Outlook, Microsoft CRM, and Microsoft Great Plains, along with a new "thin" client version called Interaction Client .NET Edition for zero-effort deployment.

The new version of CIC also includes enhancements to its easy-to-use knowledge management system, called e-FAQ, which offers automated responses to e-mail and Web inquires. This functionality enables customers to reduce costs by speeding self-service resolution in response to contact center inquiries, thus freeing up agents' time to deal with more complex interactions.

http://www.inin.com

FrontRange, VegaStream Team On IP Contact Center Solution

FrontRange Solutions USA, Inc.(quote - news - alert), has certified VegaStream's line of Vega SIP gateways as the first interoperable product for the FrontRange IP Contact Center (IPCC) solution. FrontRange and VegaStream are working together to help businesses improve customer communications in a cost-effective and scaleable manner, using cutting-edge VoIP technology.

FrontRange IPCC offers small to mid-size businesses enterprise-level features in a software solution, such as: virtual agent, Web-based application builder, real-time and historical reporting, and integration with GoldMine and HEAT.

"Our IP Contact Center offers businesses another cost-effective, feature-rich solution for increasing their customer retention and loyalty. FrontRange IPCC is easily managed, flexible, and works in an open architecture," said Mike Heberling, Business Development Manager for FrontRange Solutions.

"IPCC uses the session initiation protocol known as SIP to interoperate with other network elements, like VegaStream's Vega IP gateways," Heberling continued. "We want to encourage businesses to migrate to a SIP-based, open architecture to take advantage of advanced customer service options."

The Vega 400, provides a scaleable platform (from a fractional T1 or E1 to 120 voice calls) that coincides with many small and medium enterprises' business plans. The Vega 50 also connects SMEs and small branch offices to IP networks, but on a smaller scale.

http://www.frontrange.com
http://www.vegastream.com

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Altitude Software's IPCC "In a Box"

Altitude Software (news - alert) recently announced an innovative, "all-in-one" IP contact center solution.

The Altitude vBox, to become available in late 2005, is a turnkey solution that combines the Altitude uCI full multimedia contact center functionality with the benefits of IP networks in a reliable converged communications system, resulting in a cost effective, flexible IP contact center solution. Fully scalable, the solution can start with just a few seats and grow to meet each organization specific business needs.

The Altitude vBox provides businesses with an open standard, software-based contact centre solution allowing for decentralized end-points with centralized management; Historical and real time reporting; Intelligent routing; Universal queue; Inbound, outbound and blended voice; e-mail; Web collaboration, and chat; Screen pops; Data look up and Contact history. The solution integrates an open source IP-PBX, a Web-based configuration management interface, and an "Intel Inside" fully integrated network appliance within a small, elegant, robust box.

http://www.altitude.com

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Voda One To Offer Leasing Through Advanced Funding Program

Voda One (news - alert), a specialty distributor of networking and communications technology solutions, announced at that it is now offering qualified BusinessPartners more flexible financial terms through Avaya Financial Services' Advanced Funding Program (AFP).

The Advanced Funding Program provides advanced funding to VARs on equipment sales and associated services that are being leased. As a result, the sales cycle is substantially reduced, with solution providers receiving payment on project completion versus a typical net 30- or 60-day basis.

Additionally, since less upfront cash is required in a leasing arrangement, end users are able to better manage their capital resources.

Chuck Thropp, chief financial officer, Westcon Group North America, commented: "Our arrangement with Avaya Financial Services helps solution providers create flexible leasing terms for their customers and helps end users make the most out of their capital resources. This can lead to enhanced sales opportunities for the solution provider since they are able to provide more flexible terms to their customers. Additionally, the Advanced Funding Program removes a substantial portion of the burden solution providers sometimes face with respect to collecting accounts receivable."

Kiran Kapur, chief operating officer, Avaya Financial Services, a subsidiary of the CIT Group, Inc., added, "Our Advanced Funding Program is a powerful value-add complementing VodaOne's other offerings to Avaya BusinessPartners. This program dramatically reduces the time it takes to complete the sales cycle, making transaction time more efficient for all concerned."

http://www.vodaone.com
www.ileaseavaya.com

Westcon Canada To Distribute SpectraLink Portfolio

Westcon Canada, Inc.(news -alert), now has a distribution agreement with SpectraLink, the leader in workplace WiFi telephony. Under this agreement Westcon Canada will now distribute the SpectraLink Link Wireless Telephone System and the SpectraLink NetLink Wireless Telephones to its Canadian-based solution provider customers. SpectraLink Wireless Telephones integrate seamlessly with Westcon Canada's enterprise telephony solutions, including those by Nortel Networks and Avaya.

SpectraLink Wireless Telephones are designed to provide enterprises with all the features and capabilities of advanced digital telephones in a lightweight, durable wireless handset designed specifically for diverse enterprise applications.

The Link WTS operates over the unlicensed 902-928 MHz band and integrates digitally with leading enterprise PBXs. NetLink Wireless Telephones allow for converged mobile voice and data on a single wireless infrastructure by operating as client devices on 802.11b wireless LANs. This allows enterprises to leverage their wireless LAN infrastructure investment for both voice and data devices.

Lynn Smurthwaite-Murphy, general manager of Westcon Canada, said, "By offering SpectraLink Wireless Telephones, we enable our solution providers to make a much stronger play in wireless markets such as healthcare, manufacturing, education and retail. The SpectraLink product portfolio complements our established competencies in convergence and wireless technologies, and we are able to offer unrivaled pre- and post-sales support for the entire product line."

"Wireless communications is seen as a key differentiator and an increasingly necessary capability for many of our customers, particularly in our core customer bases including the retail, manufacturing and healthcare sectors," said Kevin Williams, CFO of J&D Systems, a Mississauga-based solution provider. "SpectraLink's wireless technology allows us to add wireless functionality to just about any type of enterprise network and completes the communications circle for our customers."

http://www.westcongroup.com

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CallWave Launches ISP Reseller Program

CallWave, Inc.(news - alert), announced the launch of its ISP Reseller Program. Under the program, dial-up and broadband ISPs can profitably resell CallWave's VoIP-based call management application designed for consumers and small businesses.

Unlike VoIP services that require subscribers to replace their existing phone service, CallWave's software-based VoIP application is designed to allow users to get more out of their existing landline, wireless, and Internet services without purchasing additional hardware. With CallWave, both dial-up and broadband ISP customers can receive important phone calls they otherwise would have missed, screen messages in real time, and instantly transfer incoming calls to the most convenient phone. CallWave users immediately know whether they're receiving an emergency call from a family member, an important business call, or a telemarketer solicitation — giving them the power to decide to take the call.

"CallWave gives ISPs a VoIP-based offering that provides immediate and compelling value for subscribers — and it's simple to use," said Josh Fraser, Vice President of Business Development for CallWave.

Steve Mossbrook, President of Wyoming.com, a Midwest ISP, adds, "Our subscribers are able to take advantage of highly valuable services like Internet call waiting and real-time call screening and transfer through co-branded CallWave software. These new services help us to differentiate ourselves from other ISPs — enabling us to attract new customers and retain existing subscribers."
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PACTOLUS

By Marc Robins

Vonage Dials 911, And Verizon Answers The Call

In my last column, "VoIP's 911 Dilemma," I wrote about the current legal challenges Vonage faces surrounding its disclosure of the inadequacies of its emergency calling services and the inherent problems regarding VoIP 911 in general. As I was sitting down to write this month's column, more news relating to this issue hit the wires.

On one front, Vonage's (news - alert) legal challenges continue to grow. On May 3, the Attorney General of Connecticut, Richard Blumenthal, following in the footsteps of the AG of Texas, also sued Vonage, accusing the company of "misleading customers" about the limits of 911 emergency calling over its service. There's also some talk that Michigan lawmakers are threatening to take action.

The charges relating to the Connecticut action are the same as that in Texas: that Vonage is misrepresenting it 911 services by failing to fully disclose that 911 calls are not handled the same way as emergency calls over traditional circuit-switched POTS (define - news - alert), and that such 911 calls may take longer to connect or could in fact, go unanswered. As in Texas, Connecticut is asking that Vonage amend its marketing practices and seeks unspecified financial penalties. The suit in Connecticut was spurred by a Vonage customer who dialed 911 during a medical emergency, and because he wasn't registered with Vonage for emergency services, couldn't reach emergency personnel for assistance.

While my position is the same as it was last month, that these suits are without merit due to the fact that I believe Vonage does in fact disclose the drawbacks to its emergency calling service in both Web site notices prior to sign-up and e-mails sent to new customers both during and after the activation of a new account, the actions by these state lawmakers has certainly made VoIP emergency calling a top concern among federal and state regulators, and a growing headache for Vonage.

While fuller disclosure will certainly alert more people to the problem, it doesn't do anything to actually fix it. However, there is a way to fix the 911 problems plaguing VoIP and that is for VoIP providers to gain access to the traditional 911 network used by the ILECs and RBOCs today — something that Vonage has just accomplished through an unprecedented agreement with Verizon.

On the same day as the Connecticut action, Vonage announced a breakthrough agreement with Verizon to access elements of the wireless and wireline Enhanced 911 network. As a result this new collaboration, Vonage will able to deliver a comprehensive emergency calling service for both nomadic and native VoIP calls, and provide a caller's location and call-back number to emergency services personnel for 911 calls placed throughout Verizon's territory, just like with a traditional circuit switched call. Verizon is the first RBOC to work closely with any VoIP service provider to ensure emergency calling keeps pace with VoIP technology.

Now, when a Vonage customer dials 911, the emergency call is routed to Vonage's 911 server using SIP. The Vonage server then queries Intrado (Vonage's E911 service partner) for routing instructions. The call is then directed to the media gateway connection to the Verizon network, over a dedicated physical circuit connected directly to Verizon's selective router that serves the Public Safety Answering Point (PSAP).

At the same time, Intrado places the customer's address and telephone number into the Automatic Location Information (ALI) database. This information is included in the call signaling, and allows the PSAP 911 operator to pull the customer's address and phone number from the ALI database.

Verizon's wholesale group has committed to offer Vonage the following elements on a commercial basis for the deployment of NENA-compatible Enhanced 911 within Verizon's 28-state territory:

- Direct trunking to the more than 100 Verizon-owned selective routers,
- The provision of wireless components enabling non-local numbers to call 911, and,
- An ALI-steering agreement for Intrado.

Vonage, Verizon, and Intrado intend to implement this new E911 solution throughout the Verizon territory within six months. To implement this solution, Verizon will perform all necessary modifications and translations to the network elements in each PSAP service area that bundle the ALI and selective routing infrastructure. The proposed solution is also compliant with NENA's proposed I2 technical standard.

Hopefully, this new agreement will set the stage for a new level of cooperation between all VoIP providers and incumbent telcos, and ultimately be the solution to VoIP's 911 dilemma. IT

While fuller disclosure will certainly alert more people to the problem, it doesn't do anything to actually fix it.

Marc Robins is Chief Evangelism Officer of Robins Consulting Group, which offers an array of services to the IP telephony industry. He has been involved in the telecommunications industry as a reporter and analyst, trade show producer and publisher, and marketing executive and consultant for more than 24 years. For more information, call RCG at 718-548-7245 or e-mail robinsconsult@optonline.net.

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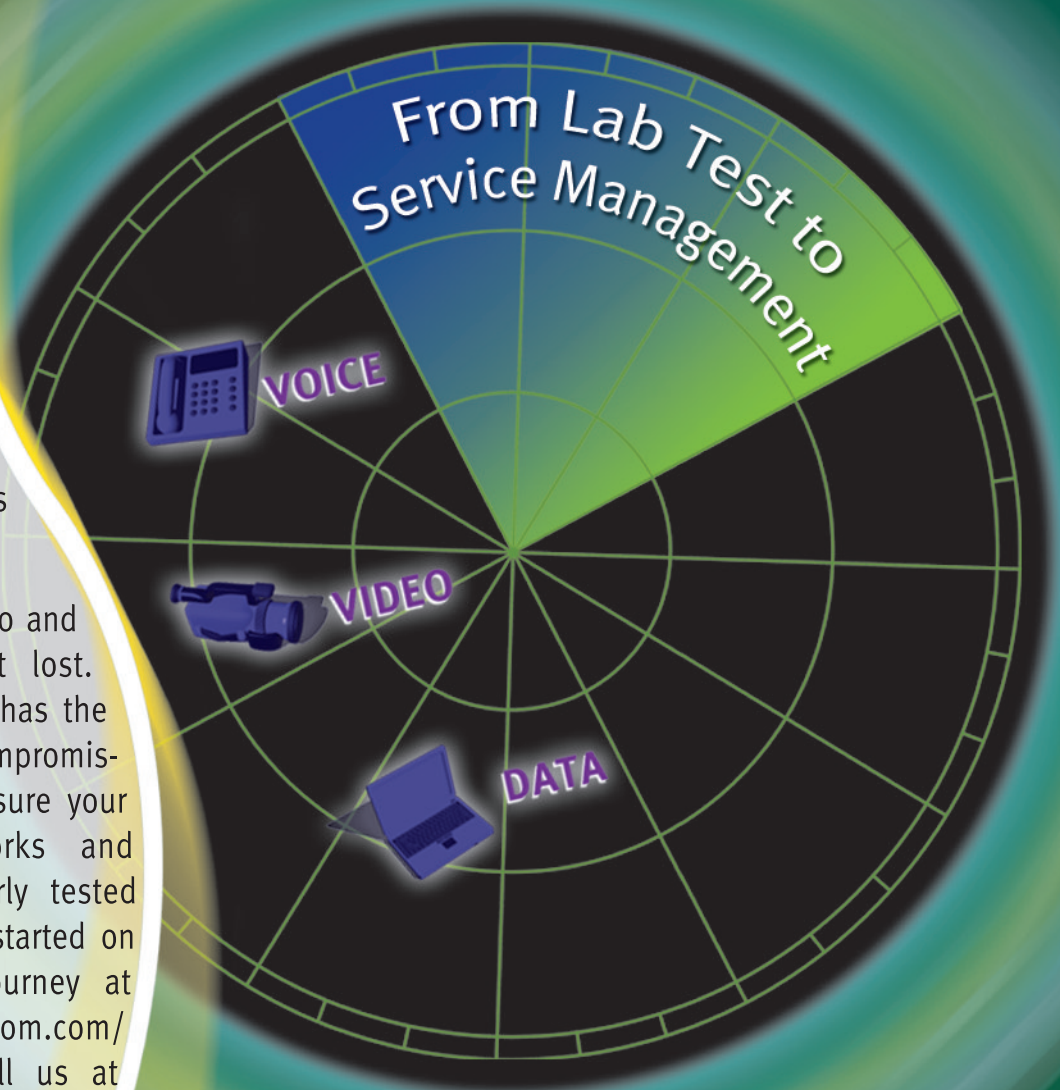

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By Tony Rybczynski

Convergence Vendors: 1 or 2?

Working with multiple vendors drives a competitive environment and greater innovations, while selecting a single vendor may provide some level of comfort and risk management. There is always a balance. Some say that IP telephony is an application running on an IP network, so you can select a vendor who is best in breed for telephony independent of networking vendor. Others say, you may want to go with a single vendor for telephony and networking because then you can ensure that performance requirements of voice are met. So is there a right answer?

Technology Is Not The End Game

Don't accept vendor proposals at face value. Remember that if a vendor only has a hammer, then everything looks like a nail. If the vendor has no installed telephony base, he will argue that evolving to IP telephony 'hybrid' systems is a bad thing (for his revenue stream!); at the same time, he may argue that putting IP telephony call control in a 'hybrid' router is a good thing (for his revenue stream!). A data vendor may deeply discount its IP telephony offer, recovering lost revenues from network upgrades, after the deployment is started. Putting voice functionality into a data platform may sound attractive, but the economic life will be impacted. Just because you can do something doesn't mean you should. You need to do what's right for your business, and ensure any business case incorporates all associated costs.

While you may intellectually accept that eventually everything on IP will permeate your business, you need to focus on business-driven migration to get there. This may be triggered by a new building construction or the termination of a Centrex contract; or driven by the need to reduce the cost of international voice calling or moves, adds, and changes (MACs); or by the opportunity to better equip your mobile workforce.

Lock-In Avoidance

Today, IP telephony has to fit into a multi-vendor environment of voice switching, voicemail, and contact center and CTI applications. But the industry is now talking about business-transforming unified communications across the virtual enterprise, embracing partners and customers. It's a whole ecosystem that is multivendor by its very nature with interoperability through open standards including Web Services. In Nortel's Architecture for the Converged Enterprise (ACE), IP telephony is positioned as a Communications Service, and is one element of unified communications, incorporating real-time multimedia capabilities and presence. Architecturally, the glue that ties unified communications together is the Session Initiation Protocol (SIP).

Don't accept vendor proposals at face value.

Communications Services use the standard IP stack, including the Real-Time Protocol (RTP) and User Datagram Protocol (UDP) with standard-based QoS mechanisms. In addition, proactive voice quality monitoring tools are being standardized to facilitate service management. All this points to the fact that IP telephony can be successfully deployed and managed over any reliable QoS-enabled IP networking. In fact, our IP telephony solutions have been validated by third parties, to operate over other vendor's IP networks (this is explicitly not the case for the IP telephony solutions from a dominant data vendor).

You need to probe vendors as to the proof points of their standard commitments, best demonstrated through multivendor interoperability. In this way, whether you go with a single or multivendor approach, you will be sure you are not locked in and have the flexibility to leverage innovations, or change vendors. In fact, some large institutions have chosen to have a dual vendor strategy in key areas (e.g., telephony and separately networking) to leverage the most out a competitive environment, both in terms of TCO and technology.

One Or Two Suppliers?

There are very few vendors that can meet all of your IP telephony, multimedia, and network infrastructure needs. Given some recent mega-fiascos in the IP telephony space, you need to tread carefully! If you choose a single vendor for your convergence solution, do so with your eyes wide open to ensure that your current and future needs are met. And there's no question — the future is SIP (define - news - alert) and unified communications. Different functions in the converged network will evolve at different rates. Integrating IP telephony into your data platforms could constrain this independent evolution. In any case, your network has to evolve to support the QoS and reliability needs of not just IP telephony applications. A vendor committed to multi-vendor interoperability is a lower risk in this evolution than one with a single vendor bent. Open standards support is critical to provide you the flexibility your business needs to avoid dependence on vendors and to leverage new technologies as they emerge. IT

Tony Rybczynski is Director of Strategic Enterprise Technologies at Nortel. He has over 30 years experience in the application of packet network technology. For more information, please visit http://www.nortel.com.

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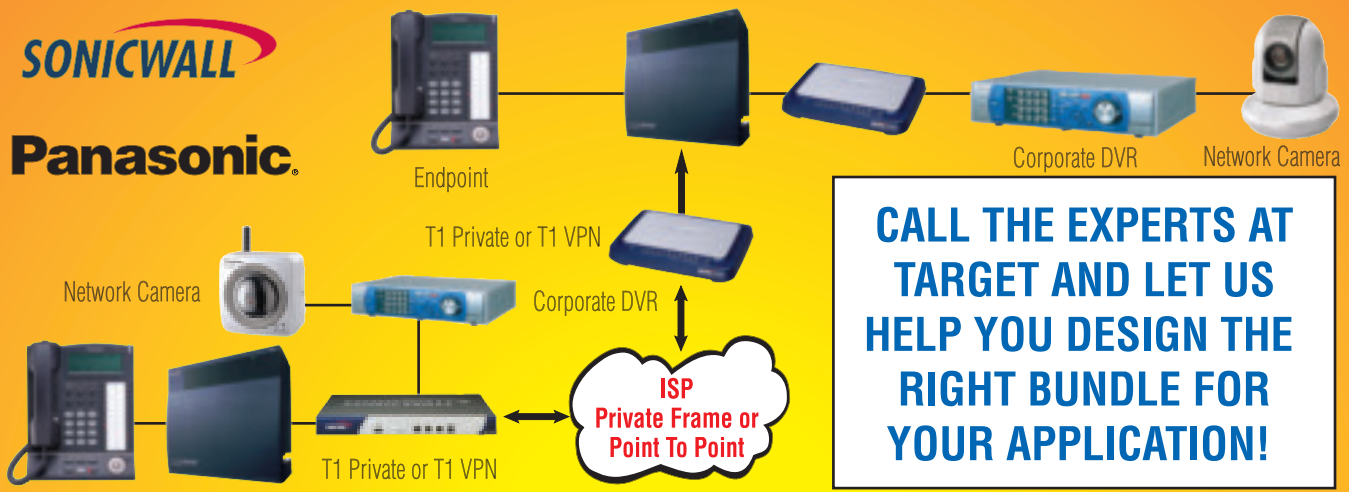

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By William B. Wilhelm, Jr., Esq.

Oh Canada! Canadian Regulator Rules On VoIP 911

Significant Impact — Pace Of Required Implementation Is Anything But Glacial

Moving at an unprecedented pace — on April 4th, the Canadian Radio-Television and Telecommunications Commission ("CRTC") issued a Decision concerning emergency service obligations for providers of voice over Internet Protocol services. By the time you read this article, the FCC will likely have also issued its own decision on VoIP 911 deployment. As the first decision of its kind however, the Canadian decision is a milestone since it clearly foreshadows a new area of regulatory and legal scrutiny for VoIP providers and the way they market and provision their services.

In its order, the CRTC surprised some by developing a 911 emergency service obligations for both "nomadic" and fixed VoIP services. The CRTC defines those services covered by the Decision to include any VoIP (define - news - alert) service that provides subscribers access to and/or from the PSTN (define - news - alert) along with the ability to make and/or receive calls that originate and terminate in an exchange or local calling area.

The CRTC states in its Decision that it was cognizant of the technical and operational challenges associated with provisioning 911/E911 service with VoIP services offered on a nomadic basis or through the use of foreign exchange telephone numbers (i.e., service with a telephone number that is not native to any of the exchanges within a customer's public safety answering point ("PSAP") serving area).

The requirements for fixed VoIP services is somewhat less flexible than for nomadic providers. Specifically fixed VoIP providers must offer emergency services equivalent to those offered by the ILEC operating in the relevant geographic area by July 4, 2005. Thus, if an ILEC is providing E911 service, the fixed provider of VoIP services will also be required to provide E911 services.

E911 service, according to the CRTC, includes all of the capabilities provided by Basic 911 service as well as Automatic Location Information ("ALI") functionality and call control features, which ensures that a 911 caller's name, telephone number (listed or unlisted), address, type of service, and other pertinent information is downloaded from an ILEC maintained database and automatically transferred to the PSAP along with each incoming 911 call. The CRTC is also imposing on fixed VoIP providers the customer notification and 911 funding requirements set forth above.

In considering "nomadic" VoIP, the CRTC directed Canadian carriers and VoIP providers offering these "nomadic" or foreign exchange VoIP services, in areas where 911/E911 service is available from the ILEC, to implement an interim solution by July 4, 2005 (90 days from the date of the Decision), and to provide a level of service functionally comparable to "Basic 911." Basic 911, according to the CRTC, consists of routing 911 dialed calls to a designated PSAP for all 911 calls originating within a specific geographic area. A PSAP agent then connects a 911 caller to the required emergency services agency (police, fire and/or ambulance). The PSAP agent typically sees the caller's telephone number, but not the caller's location information. Because it is not currently technically possible to route these calls directly to PSAP agents the CRTC will allow for the possibility of an "interim" solution where an emergency call would be connected to an intermediary who in turn transfers the call to the proper PSAP or emergency services agency.

All VoIP service providers that cannot meet the CRTC deadline for an interim solution were required to apply by May 4, 2005 for an extension. The CRTC Decision further directs Canadian carriers to ensure that a 911 call originating from a VoIP service is not routed to a PSAP that does not serve the geographic location from which the call is placed.

The CRTC decision also touches upon notification and customer consent. Specifically, Canadian carriers are also directed to obtain from their customers express consent to the limitations of 911 call delivery. The CRTC states that express customer consent may include: written consent; oral confirmation verified by an independent third party; electronic confirmation through the use of a toll free number; electronic confirmation via the Internet; oral consent, where an audio recording of the consent is retained by the carrier; or consent through other methods, as long as an objective documented record of customer consent is created by the customer or by an inde-

As the first decision of its kind, the Canadian decision is a milestone.

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Troubling to many, however, are the additional notification requirements imposed by the CRTC Decision — indeed similar such limitations in the United States might be subject to very serious Constitutional challenges. In Canada however, the CRTC requires VoIP providers to provide customer notification regarding any 911 service limitations both before service commencement and during service provision. Under the CRTC Decision, initial customer notification is to be made available through all of the following: marketing materials used for television, radio and printed media, the terms and conditions of service, online material, customer service representatives, service contracts, and starter kits. Further, ongoing customer notification must be made available through all marketing materials used for television, radio and printed media, the terms and conditions of service, online material, customer service representatives, warning stickers affixed to telephone sets and billing inserts.

Canadian carriers are also directed to obtain from their customers express consent to the limitations of 911 call delivery.

Additionally, the CRTC directs that information regarding limitations on 911/E911 service be accessible to persons with visual disabilities, and that all customer notification and any printed information used to secure the express customer consent must be provided in alternative formats (e.g., Braille and large print), upon request. Local VoIP service providers are also required, at a minimum, to explain any 911/E911 limitations upon request. IT

William B. Wilhelm is a Partner in the firm of Swidler Berlin Shereff Friedman, LLP. For more information, please visit http://www.swidlaw.com. The preceding represents the views of the author only and does not necessarily represent the views of Swidler Berlin Shereff Friedman, LLP or its clients.

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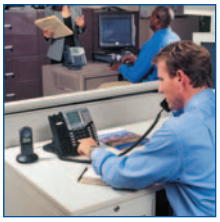

FAST FACT

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By Hunter Newby

The Only Constant Is Change

A recent enterprise deployment consisted of a multi-site Layer 2 VoIP WAN to eliminate per-minute billed calls and then a very aggressive wholesale termination rate for everything else that is off-net. This enterprise realized a savings of $75,000/year by doing this. Their next steps are to find other enterprises (customers, partners, vendors) that built a similar VoIP network and establish peering relationships and encourage others to build similar networks so they can begin saving too. This is the reality of what is already happening.

The ITU has not aggressively pursued ENUM (define - news - alert), or encouraged their carrier members to develop new revenue models. The position they have taken has now given opportunities for others to establish their own registries. Some of the new players on the ENUM registry side of the VoIP define - news - alert)peering scene are from carriers themselves, but some are not. Where the independent registries' roots are based has much to do with their business model and attitude about who should run ENUM and how.

Much in the same way the ITU has failed to deliver a clear strategy which gave rise to carriers themselves trying to create the policies, the carriers lack of a sensible offering to date has led to enterprise investigation and implementation of VoIP and ultimately ENUM. Enterprises are now taking their voice networks into their own hands and bypassing the carriers that used to provide these services. Now, all that is required for intra-company calling are Layer 2 circuits, hardware, and software; and it is all managed by the in-house IT department. That is the basis for peering, it's what makes the most sense and is the way the money is moving.

As the legacy phone service providers try to regroup and come up with a plan many are bringing the IP side of the house in to those discussions. The ISP peering managers are now getting more involved in the discussions and planning of voice networks and service offerings since VoIP is now being seen more as IP and less as voice. One limiting factor in their quest for a successful plan may be that they are being told to protect the legacy revenue streams and model. The disruptive nature of IP peering in a PSTN model will not allow for that. The PSTN define - news - alert) is simply inefficient. The implications for them are a quandary.

Still the challenge remains for the traditional telcos to chart a course. As these service providers from the old fashioned voice world try to figure if and how VoIP peering will work for them they may now have to also contend with the feeling of being outsiders to the IP peering world. There are many service providers that won't be around in a few years, but don't feel bad, it's not that you weren't cool enough for the club. It's just that your business model became extinct. It was about a new way to generate profitable revenue from technology, not technology itself, or any specific group of people who seem to know what is going on. We all have a lot to learn.

The challenge for anyone entering the VoIP world to solve all of its problems is figuring out how to replace $200 billion dollars in TDM define - news - alert) voice revenue with $2 billion in VoIP revenue (if we're lucky) for the same amount of service and not have anyone notice, or complain about it. This will of course be discussed and debated in conferences, blogs and secret mailing lists, but can IP engineers working within voice service providers actually come up with the answers that make the CFOs say yes? This is yet to be seen and much easier said than done.

Looking again at history it is interesting to note that the economics and revenues from the public Internet were created from a new communications world that expanded rapidly within a void. Essentially it created and enabled new types of providers and new revenue for all of them. IP VPNs did take away some revenues from ATM and Frame Relay data networks, but that was a packet evolution anyway. Enabling VoIP peering is totally different. It is displacing predictable revenue (that Wall Street likes) that has been cranking out steady (mainly RBOC/ILEC and pre-bubble) returns to investors for a long time. The CLECs and IXCs were on the rocks before VoIP because of over-investment, over-spending, over-building, and mismanagement anyway, but now this is it. It's over. But, what does it become?

Enterprises are now taking their voice networks into their own hands and bypassing the carriers.

Most network engineers don't spend their days thinking about the balance sheet, and in planning the voice Internet that is a key component. The bulk of the core voice revenues today are not generated from feature-rich services and it is that bulk that is the non-complex, simple phone service that enterprises are taking control of and making on-net. That revenue will not be replaced with revenue from the same service in a different package. New services are required to generate new revenue to make it look like an even trade, but make no mistake about it — something is going away permanently and many new

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things will be created.

The real money (in America and many other places) is in the corporations. At a certain level these entities are focused on only one thing, shareholder value. Cutting costs drives that value up. Enterprise VoIP peering cuts costs. The technology exists and they will do it for the money. That will leave many carriers out. A lot of IP minds now in VoIP think-tanks imbedded within legacy voice carriers are potentially going to be thinking their way right out of a job. Transport networks are dumb and not complicated enough for them to try and become the masters of, but the numbering issues are much more detailed and therefore mystifying. (Being a master of technical mystery brings a higher value). The problem is that now the enterprise IT director can figure it out too. Actually it's the dumb transport that will become the ties that bind the corporate VoIP WANs and as the technical bumps get smoothed out of the numbering issues, the enterprises will need less and less traditional carrier services.

Cutting costs drives shareholder value up. Enterprise VoIP peering cuts costs.

All of this is not to say that new service(s) will not be created, or just evolve over time, that add value, generate positive revenue and can fill the substantial hole left from traditional phone revenue, but that's going to be a big hole. Ring tones are now a $4 billion a year business and no one really planned for that, but it is a drop in the bucket compared to what is going away. The landscape is changing rapidly and things that applied and succeeded in the past might not necessarily be the same this time around. What is critically important for success is the collection and sharing of accurate information with all parties involved. That is the only way to avoid repeating others' mistakes, be aware of what is really happening in the industry and stay on track to running a business that makes sense. IT

Hunter Newby is chief strategy officer at telx. For more information, please visit http://www.telx.com.

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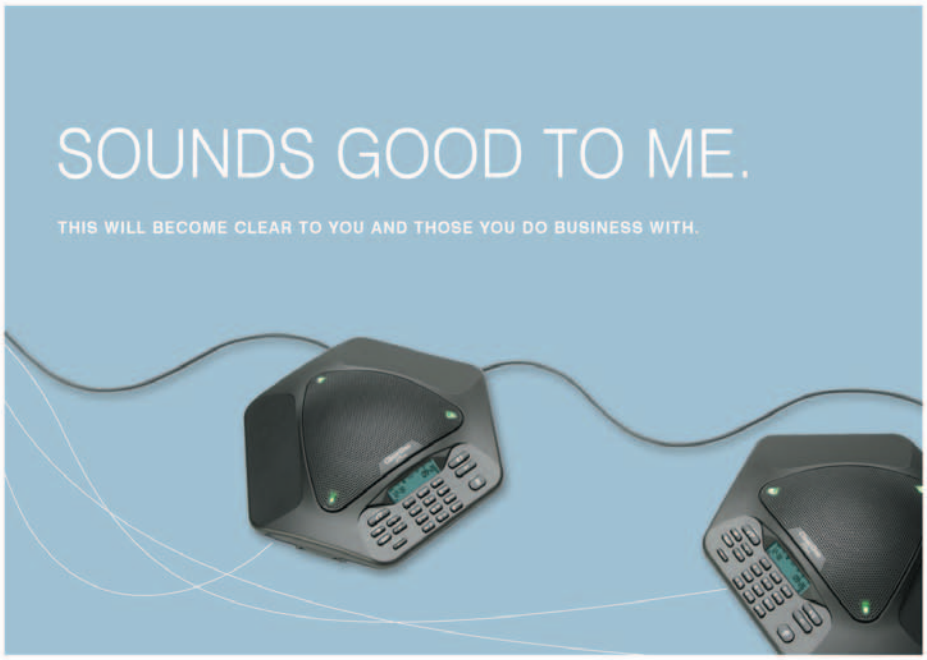

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By Ben Guderian

Is WiFi Telephony A Killer App For IP Centrex?

VoIP technology has reinvigorated the Centrex market. While some still view Centrex as "old-world telephony," the reality is that IP-based Centrex services are raising the bar on features, scalability, availability, and overall value compared with enterprise-based systems. Bringing together IP Centrex and WiFi technologies can offer even more to business customers. WiFi telephony delivered over IP Centrex provides the advantages of enterprise wireless — improving employee mobility, productivity, and responsiveness — along with the operational and functional advantages of a hosted telephony service.

Hosted business telephone services, commonly referred to by the original Bell System brand name "Centrex," have been around since the inception of the PBX (define - news- alert). Centrex services are based on using a network-based telephone switch to deliver business telephone features just as though there is a PBX installed at the customer site. Using Centrex eliminates the capital investment in a local PBX, and it significantly reduces the local resources required to deal with corporate telecom support by essentially outsourcing telecom to a service provider. Centrex customers simply pay a monthly per-user fee that varies depending on the types of services they require.

Centrex is used by less than 20 percent of business telephones in the U.S. today, but that still translates to more than 15 million lines. The Centrex market is strongest with very large enterprises, such as large corporate facilities and university campuses. Centrex service is also attractive with many small businesses that don't want to deal with administering their own PBX or key system.

It's Not Your Father's Centrex Anymore

IP telephony has changed the Centrex landscape in three significant ways. First, the features and capabilities available through an IP-based hosted service go well beyond the traditional circuit-switch Centrex offerings. Utilizing protocols such as Session Initiation Protocol (SIP), a service provider can offer more than just business telephone service, adding messaging, multimedia, and presence-based features. Second, IP Centrex services are delivered over standard broadband connections. An enterprise can truly converge its voice and data services in terms of physical network connections and service providers. This is a big advantage over circuit-switched Centrex, which requires individual wire pairs or T1 channels for every telephone set at the customer site. A broadband connection provides much more scalability and flexibility for adding users and capacity. Finally, IP Centrex services are much easier to deploy, opening up marketing opportunities for new entrants along with traditional telephone service providers. Whereas a traditional Centrex service could only be delivered from the local telco's switching office, IP-based services can be delivered from anywhere over an IP network. And the cost of equipment to support IP Centrex services is significantly lower than that of the large-scale central office switches used for traditional Centrex.

The advantages of IP-based business telephone services over traditional Centrex are already pretty clear, even without a wireless component. But adding WiFi wireless networking to the mix can really enhance the value proposition, both in terms of productivity and cost of ownership. And merging IP Centrex with enterprise WiFi is easier than you may think.

Merging IP Centrex with enterprise WiFi is easier than you may think.

WiFi And IP Centrex: Two Peas In A Pod

IP Centrex and WiFi fit hand-in-glove because both are based on IP network technology. The same wired and wireless network infrastructure can be leveraged for both voice and data applications. While circuit-switched wireless telephone technologies for enterprises have been around for more than a decade, they haven't done a good job of supporting anything other than voice applications. The beauty of WiFi telephony is that it is just another application running on a corporate wireless LAN (with all the requisite network performance and QoS mechanisms, of course).

The end-user devices used with IP Centrex services are typical-looking business telephone sets, making the fact that it is a hosted IP service totally transparent to the end users. But instead of a pair of wires going from the phone to the Centrex service provider, an IP Centrex phone connects to the local Ethernet LAN and uses a VoIP (define - news- alert) protocol such as SIP to set up calls and access features through the host switch. In the same way, a wireless IP telephone communicates over a WiFi network and uses the same VoIP protocol as a wired phone.

Tying IP Centrex and WiFi telephony makes a lot of sense

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from a technical perspective. But there are also several compelling business reasons for bundling them together. There are some markets where a wireless telephone solution is easily justified based on employees' need to be mobile and accessible in the workplace. Hospitals, factories, and large retail stores are already well-known applications for WiFi telephony. Integrating a wireless component with hosted IP telephony gives IP Centrex service providers a much stronger offering in these markets, and improves their competitive positioning against PBX-based solutions.

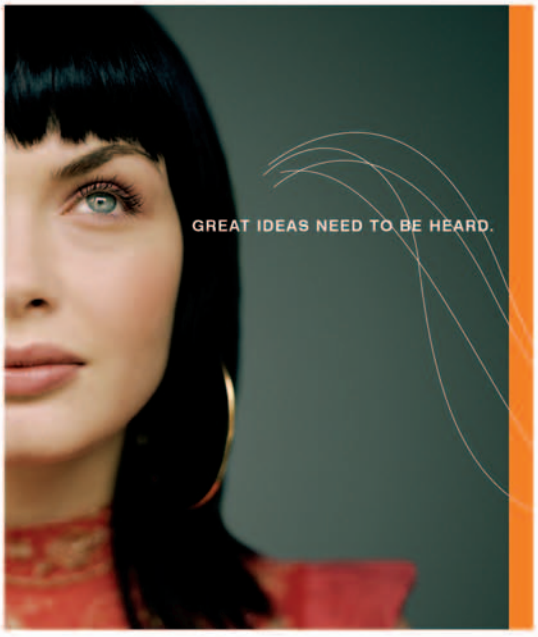
Cutting Costs By Cutting Wires

What about hard-dollar justification for going wireless? Remember, there are two principal advantages to wireless. The first is mobility, and mobility is what drives improvements in productivity and responsiveness. The second advantage, which is often overlooked, is that wireless eliminates wires. For many enterprises, the cost of wiring — both material and labor — is built into the IT budget and is seen as just another cost of doing business. But for small businesses, particularly those targeted by hosted IP telephony service providers, dealing with voice and data wiring is something they would rather avoid. Running data and telephone lines can cost more than $100 per connection, particularly in regions with high labor rates and in older buildings. WiFi telephony eliminates wiring to employees' desktops by supporting both their voice and data needs with a single wireless infrastructure. There are still some cables required to connect the WiFi access points to the network, but with the installed cost of access points below $1,000, the wireless network pays for itself with every 10 cable runs eliminated per WiFi access point. Having a wireless office saves money in the long run because employees can come and go without having to move or add more cables, and the IP Centrex provider isn't constrained by cabling at the customer site.

IP Centrex service providers can also look for other opportunities to leverage the WiFi network at the customer site. For example, some small businesses might want to take advantage of the wireless network to offer public Internet access as a WiFi hotspot. A service provider can target these kinds of customers by bundling hotspot Internet access, private wireless LAN access, and IP telephony services all in one easy to deploy package.

So is WiFi telephony a killer application for IP Centrex? It certainly can be in markets where there is a compelling need for mobility — markets where the enterprise PBX vendors are already targeting their WiFi telephony solutions. But IP Centrex providers have the unique advantage of integrating WiFi to make their offerings even more scalable and easier to deploy without sacrificing features or capabilities. IT

Ben Guderian is director of market strategy at SpectraLink Corp. For more information, please visit the company online at http://www.spectralink.com.



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By Jack Jachner & Chris Vuillaume

The Promise Of Presence

Welcome! To the first of a series of articles, which will address the impact of IP telephony on the Enterprise. In order to mix up both the technology and business aspects, the articles are a collaboration between Jack Jachner (Senior Director with the CTO office) and Chris Vuillaume (VP Product Marketing with enterprise products) at Alcatel. As the first contribution, it is fitting to focus the emergence of Presence, as it is a key differentiator of the new user-centric communication.

The communication interface that enterprise workers use daily has changed regularly over the last century. Some of these changes, such as Dial Tone replacing the switchboard operator, then Dual Tone Multi-Frequency (DTMF) dialing for telephones, and the World Wide Web (WWW) for the Internet, have generated entire new businesses and driven fundamental changes in the way individuals behave. The latest evolution is the emergence of Presence, which has similar potential to instigate change and create new business opportunities.

Presence has been made popular by teenagers using Instant Messaging (IM). One key reason for IM's success is that it displays the presence of "buddies," as real-time information on the relationship of a user (a buddy, a colleague) to one or more devices and/or networks (on-line, off-line, busy, and the like).

Even this simple form of presence introduces a more interactive and less formal approach to communication (even when compared to e-mail). Despite its appeal, the acceptance of presence, IM, and all potential Presence-based applications in enterprises depends on key issues being resolved, such as ease of use, security, and accuracy.

Two concurrent approaches are being adopted to develop presence.

One is to combine presence information from voice and computer communication tools. This has started, for example in Instant Collaboration systems and with standardized connectors to provide Presence from existing PBX (define - news - alert) systems.

The other is the extension to Rich Presence, which is the aggregation of presence from many sources (devices, applications, telecom domains) and the intelligent management of user and enterprise preferences.

Together with the integration of business applications (ERP, CRM...etc.), these approaches will expand users' communication potential and broaden the range of instant decisions they can make.

The increasing number of geographically distributed teams that need to work together, and an increasing range of available communication tools has created business opportunities for collaboration, that is, for groups of users to communicate on-line and share information, create and edit documents, etc. Today, on-line collaboration is the fastest growing sector of communication in both numbers of users and numbers of minutes. However, the growth in communication media and supporting devices is creating communication chaos for the user. Better integration of media and devices is therefore required: presence will play a central role in this unification.

Rich presence offers opportunities and raises issues for the users and managers in an enterprise. On the positive side, it provides users with accurate real-time information about their contacts. It also enables them to change more readily to the most suitable communication mode and reduces communication overload.

Expected benefits for the enterprise are increased employee productivity (less time lost in missed interactions) and increased group productivity (groups can instantly generate the information or make the decision required for the continuity of a business process).

However, presence raises users' concerns about ease of use ("I do not want to learn to use a new set of complex tools"), privacy ("I do not want to be under permanent scrutiny") and time management ("I do not want to be invaded by unsolicited interactions"). There are concerns about security for the enterprise (company information must remain confidential) and about enterprise policy enforcement (employee behavior must comply with company rules). There is also a need to bridge unrelated "silos" of presence coming from various sources. All these concerns are addressed by the emergence of a rich presence infrastructure.

This infrastructure must support basic key services, such as transparency, availability, scalability, and serviceability, which are already offered by the current stand-alone solutions, which now need to be integrated.

The business impact of Presence will be profound over the next five years. For the enterprise user, it will be the shift from device specific to user centric communication, better team collaboration and less time spent recording and retrieving messages. For the enterprise, it is quicker responsiveness to customers and improved reachability of high-value staff, translating to competitive advantage. For the IT manager, it will mean deploying a communication infrastructure with open standard interfaces, and the integration of enterprise communication tools into a cohesive whole. For the vendor community, it represents a shift from stand-alone products to integrated solutions that address the entire range of user centric communication needs.

The promise of Presence will be realized when you never again need to record a message instead of reaching the desired person — with a display of their current presence, you can time your interaction to be successful. Admittedly, much needs to be done, but the goal is enticing. IT

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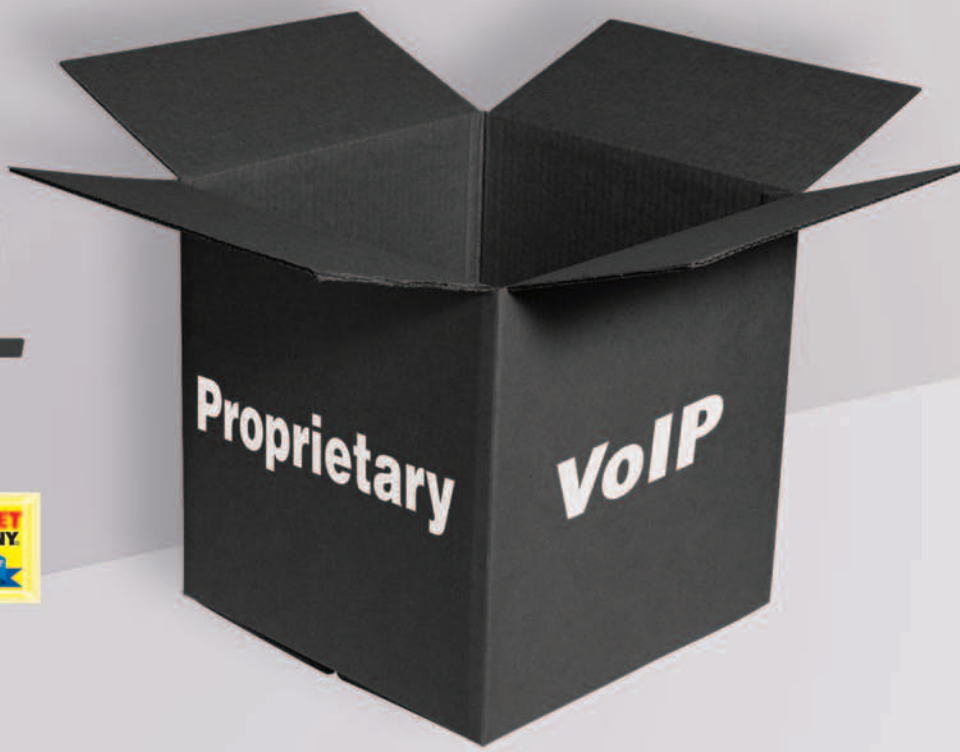

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By Max Schroeder

Enhanced 911: The Current State Of Confusion

The issues regarding Enhanced 911 (E911) are spread across legacy phone systems, mobile services, and VoIP. This first of a series of monthly columns by the Enterprise Communications Association (ECA), will address the VoIP enterprise market and, hopefully, provide clarity to the key issues. Many players including the carriers are involved in lobbying on pending E911 legislation and participating in the FCC's E911 proceedings. However, the ECA is the only organization representing the specific needs of the vendors, channel partners, and end-users in the enterprise market. The FCC defines this market as "multi-line business telecommunications systems" (MLTSs) which includes PBX users.

The dilemma presented to the FCC is that when a 911 call is made, the public service answering point (PSAP) operator currently uses the caller's Automatic Number Identification (ANI) or billing number of the single line subscriber to retrieve address information from a 911 database to determine the caller's location. When a call is made from behind a MLTS (define - news - alert) , the ANI is not necessarily an accurate indicator of the caller's location. This is a critical issue when callers may not able to verbally or accurately advise the PSAP operator of their location. There are some industry options but they are not universally deployed or specified by regulators. The FCC and the industry have been wrestling with this issue since 1994.

Unfortunately, the complexities of the MLTS marketplace have defeated thus far the FCC's attempts to adopt a uniform federal regulation. This has led to a hodgepodge of state legislation including those laws passed by Illinois (since amended) and more recently Florida that appear to require "station-level" location identification. In other words, in Florida the MLTS apparently would have to have an ELIN (Emergency Location Identification Number) for each MLTS station to enable the PSAP to identify the exact caller location. VoIP services do not use ANI and callers are often not associated with fixed locations. Therefore, an additional administrative layer is required to ensure that the PSAP identifies the correct caller location. This single element of the legislation would impose substantial costs on the MLTS vendors, manufacturers, and users.

Last year, the FCC again deferred the adoption of federal rules albeit for a limited time. The intent was to give states a year to address the issue and consider the adoption of the National Emergency Number Association (NENA) model legislation (http://www.nena.org/9-1-1TechStandards/TechInfoDocs/MLTS_ModLeg_Nov2000.PDF). Since this model legislation was developed in consort with manufacturers, vendors, public safety individuals, and NENA, it is considered a workable consensus. The year is now up and the FCC has issued a public notice seeking information on what has happened at the state level. Essentially, the states have been slow to adopt the NENA model or any MLTS legislation. Even in cases where states have acted, the results were inconsistent. For example, Florida completely ignored NENA whereas Minnesota closely based their E911/MLTS statute on the model.

The FCC is in a delicate position as it is forced to walk a fine line between:

1. Standards-promoting regulation to improve VoIP 911 capabilities.
2. Prevention of restrictive over-regulation by states limiting VoIP innovation.
3. Ensuring that carrier issues do not get in the way of enterprise compliance and technical innovation.

This is not a position that any regulatory body likes to find itself, so it is understandable that they are being cautious. However, with public safety organizations around the country clamoring for action on this ticking time bomb, it may be time for the FCC to adopt a more active regulatory role.

Readers of *Internet Telephony* are well aware that VoIP is becoming the predominant telecommunications technology. ECA's position is that the model legislation provides a strong framework of reasonable regulation, and should be adopted by the FCC to preclude inconsistent state legislation. Looking to the future, ECA has urged the FCC to put in place a plan to address VoIP E911 compliance issues as quickly as possible and has proposed that the FCC convene a forum to develop standards for support of E911.

Certainly, vendors and manufactures are concerned that without a clear nationwide policy, the cost of E911 deployment could be enormous. However, ultimately the end-user may incur the most risk to the bottom line. For example, some existing and pending legislation would force PBX users to subscribe to Direct-Inward-Dial (DID) services to ensure that the same number used to identify the MLTS station could also be used by the PSAP operator to call back that station. Currently, a significant percentage of PBX users do not subscribe to DID services. The NENA model legislation avoids imposing this burden by allowing end users to use different numbers for callback and location identification.

The ECA and *Internet Telephony* would like to encourage vendors, manufacturers, and end-users to join in the E911 discussions by submitting "Letters to the Editor" or going to the ECA site (http://www.encomm.org/contact_eca.asp) and indicating your willingness to participate. IT

Max Schroeder is a consultant Principal of The InStep Group, a consulting firm, and a Founding Member of the ECA, Member of the Board of Directors, Chair of the Media Relations Committee and, in that capacity, is the ECA liaison for TMC.

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Part V: VoIP Product Packaging — It's Not Just About Price

By Shawn Lewis

In this last of our five-part survival guide series, I find myself drawing comparisons between the early dial-up Internet access days and today's VoIP services market. If the dial-up Internet access business of the late 1990s taught us anything, it was that you should always be a price leader but never lead with price alone. A low-price only strategy is a formula for certain failure for service providers.

We should look to the market leaders in the early days of the Internet space including MSN, AOL (quote - news - alert), and EarthLink (quote - news - alert) to draw parallels about what worked best for them and why. These market leaders distanced themselves for the dial-up commodity business early on as they focused on content services. They provided everything the customer wanted from customizable home pages, personal Web hosting to Web mail. When the migration began from dial-up to broadband, they kept many of their customers by providing a competitive broadband access product, wrapping it together with a higher level of media rich content.

There is another clear parallel. These Internet Service Providers (ISPs) generally acquired early adopters as customers, and did not lose them to other broadband providers such as their cable company or incumbent phone company. Why not? Because they offered their customers more than just a good price. The successful ISPs maintained their customers with higher pricing in many cases because of their strategy to give their customers high-demand content, features, and services. They also "touched" their customers constantly with direct marketing programs. They understood that if they didn't touch their customer, the competition would.

So, as history has demonstrated, if you want to build a long-term, successful Internet Telephony Service Provider (ITSP) business, you need to take a forward-thinking approach to building your products, what types of customers you want to acquire, and most importantly, what you are going to do to keep them. The VoIP (define - news - alert)

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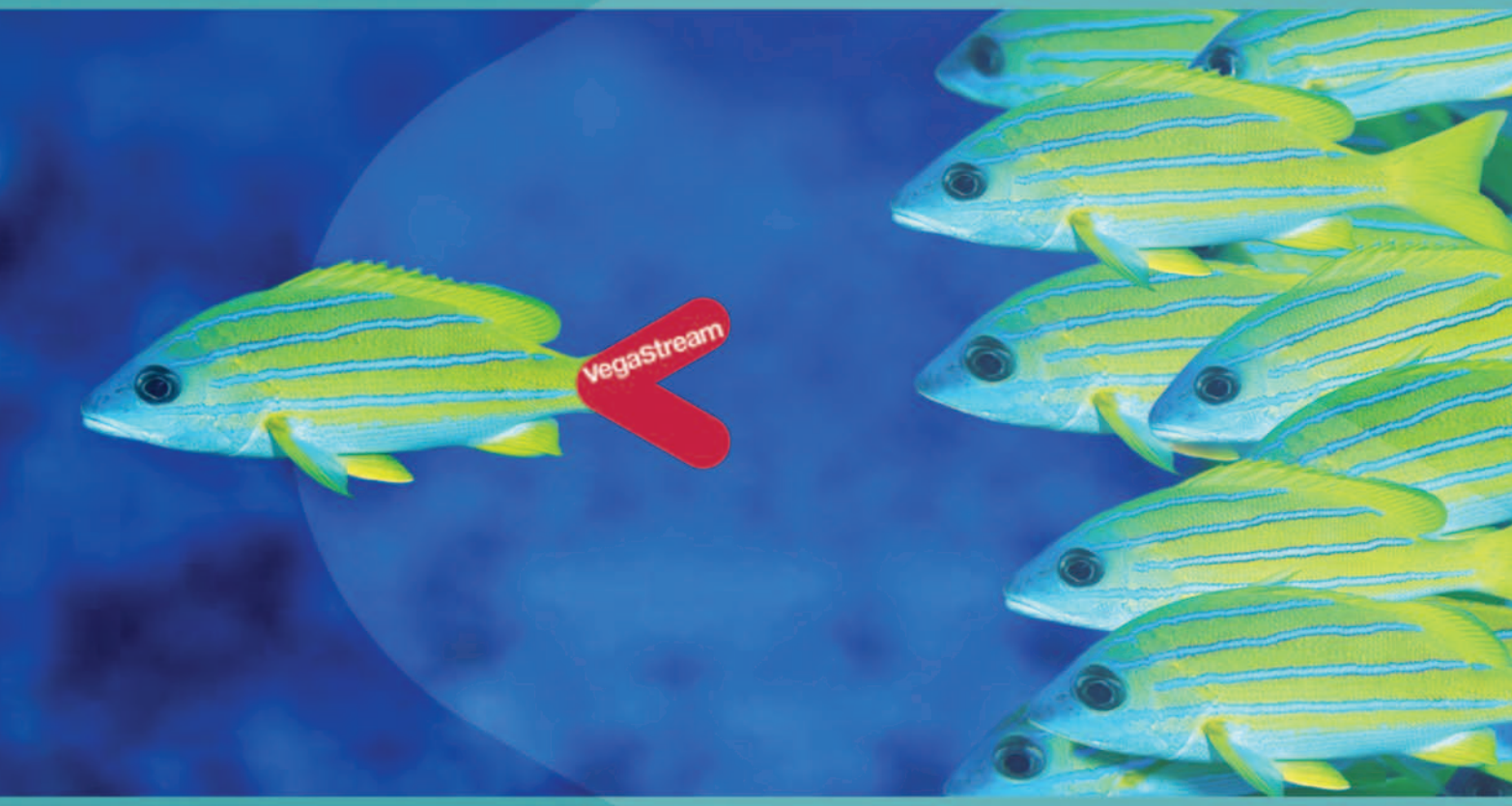

There's nothing more mission-critical than your voice communications. So when you're thinking about moving to VoIP, you need to talk to a company with experience.

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The VoIP world offers many more product options than traditional circuit switched telephony.

world offers many more product options than traditional circuit switched telephony, but they too have issues. Here are some of the top issues that I see facing ITSPs as they begin their VoIP services rollout:

- Expanding product capabilities by bypassing the Central Office limitations.
- Avoiding price wars through high-demand features and promotions.
- Competing with the incumbents.
- Retention from ILECs' win-back programs.

Expanding product capabilities by bypassing the Central Office limitations

Traditional circuit switched voice service providers such as Competitive Local Exchange Carriers (CLECs) and Incumbent Local Exchange Carriers (ILECs) have always been limited to offering service based on Central Office (CO) locations and capabilities. VoIP removes those limitations by bypassing the CO for features and routing functions. As long as the customer has a broadband connection to the Internet, they can be serviced with feature servers located on IP networks from virtually anywhere. These capabilities all but end the age-old model of dependency on the local CO for servicing customers.

Avoiding price wars through high-demand features and promotions

The parallels discussed earlier hit home about the need to differentiate your offering by not focusing on price alone. Of course, that's easier said than done. One thing is certain: the VoIP industry will feel the affects of competition. This will put pricing pressures on ITSPs over the next 12–18 months. Successful ITSPs will find themselves offering a wide range of features and services that will include IP-PBX services and unified messaging. They are also going to need to differentiate with other marketing and promotional campaigns that may include rewards — loyalty programs, and friends and family incentives.

Competing with the incumbents

Several years ago, competing with an ILEC was not that great of a challenge. They were very slow to react to competition and even slower at providing new products at competitive prices. Those days are over, but there is plenty of room in the market for forward-thinking ITSPs (define - news - alert). Luckily, the ILECs are faced with main-

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taining their legacy networks while also trying to introduce new packet switched VoIP products. Additionally, the recent consolidation of AT&T into SBC Communications and MCI into Qwest or Verizon will slow those two ILECs down a bit due to the integration headaches that will face them. Although both are moving their VoIP offerings forward, there is time to beat them to market as long as the ITSP has a compelling, well-thought-out offering.

Retention from ILECs win-back programs

If you are a CLEC competing with an ILEC, then you certainly have had to deal with their "win-back" incentives. Some of the ILECs have gotten really good at their win-back strategy. And yes, in the circuit switched arena it is hard to beat them when they offer up to $200 per line to switch back. ITSPs can package their product to minimize the ILEC win-back affects. Here are a couple of ideas:

1) If your VoIP offering is targeting primary line service, you may want to offer instruction to your new customer on how they can use their existing house wiring so their Analog Telephone Adapter (ATA) device will provide VoIP service from all existing wall outlets. That is of interest to most end-users and by doing this, the customer physically disconnects themselves from the ILEC's network, making reconnecting an issue for the ILEC. In many cases, once the customer disconnects their house from the network, the ILEC may not see them as a serviceable customer.

2) Develop a customer rewards campaign that is tied to certain benchmark dates. An example of this would be rewards for staying with you for the first 90 days, when you are most vulnerable to the win-back attempt.

ITSPs have a tremendous opportunity to gain a nice market share.

In summary, ITSPs have a tremendous opportunity to gain a nice market share. They need to be careful in their product marketing approach and be certain that they build a long-term strategy that addresses these issues and the many others that will certainly arise over time.

Good luck to all of you. I hope that you've found this five-part Survival Guide series informative. IT

Shawn Lewis is the CEO of Volo Communications, a wholesale provider of advanced voice and data services and applications including broadband VoIP service. Mr. Lewis also wrote the first two patents for softswitch and media gateway technologies. For more information, please visit http://www.volocommunications.com.

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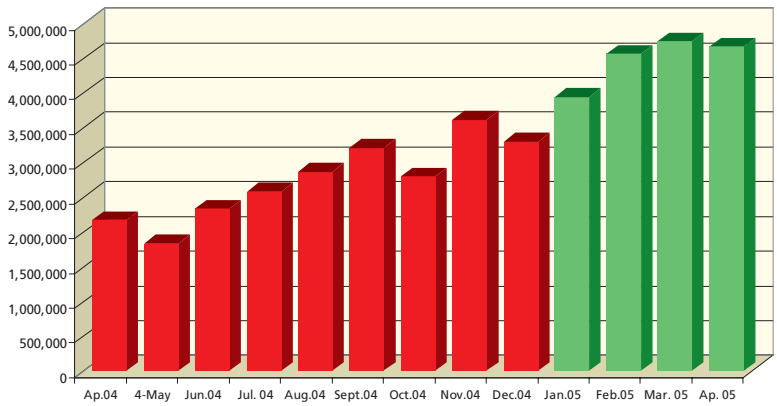

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Q&A: City Of Philadelphia Chief Information Officer Dianah L. Neff

When the City of Philadelphia officially took the wraps off of its controversial "Wireless Philadelphia" initiative on April 7, 2005, officials dispelled a lot of rampant speculation that the municipality would transform the entire 135-square-mile city into a huge community hotspot. Instead, the City unveiled a Business Plan that detailed an innovative effort to build a wireless infrastructure that would not only serve the underprivileged but also serve as wholesaler for any Internet service provider (ISP) interested in tapping into a wireless marketplace. On Monday, April 18, the City held a pre-proposal hearing at a downtown municipal building to answer questions that anyone had about its Request-For-Proposals (RFP) to help build that wireless infrastructure. Anyone wishing to bid on the lucrative $10 million contract was required to attend.

The response was a standing-room-only crowd of enterprises ranging in size from Sprint (quote - news - alert), Lucent (quote - news - alert) and Unisys (quote - news - alert) down to small women- and minority-owned businesses from all over the United States as far as California and Michigan. Presiding over the meeting was the chief architect of the "Wireless Philadelphia" plan, Dianah Neff, Chief Information Officer of the City of Philadelphia. After the meeting, Ms. Neff sat down with TMCnet (news - alert) Executive Editor Robert Liu who filed this interview for **INTERNET TELEPHONY®** magazine.

IT: We've heard a lot about the Wireless Philadelphia project even before the business plan was announced. Do you think a lot of fear coming from the business community was sparked by confusion not knowing the details of that business plan?

Neff: Well, I do believe the private sector has voice several concerns about the involvement of government in broadband initiatives including using taxpayer funds, unfair competition and it was a disincentive for the private sector. I truly believe the "Wireless Philadelphia" model has really overcome all of those and addressed all of those concerns. We are not using any taxpayer dollars. We're not going for tax-exempt financing. We're not using city dollars to finance the program. It enables a level playing field. So it really provides for the private sector companies to be able to leverage the network

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and it establishes a unique public-private partnership.

IT: You've come from the private sector. So was the fear justified in your view?

Neff: I wouldn't classify the concerns raised by the private sector as "fear." I would classify it as a lack of understanding of the needs of most communities.

IT: Your plan is being seen as a litmus test for the U.S. telecommunications industry. Do you think this will help define the role of government and its involvement in providing Internet infrastructure?

Neff: Yes, the trend by municipal government to be more involved in broadband initiatives is an indication that, like technology, policy decisions are becoming increasingly decentralized moving from a federal level to state and local governments. I think it provides a unique model that we believe addresses the best of taking care of the community and what its needs are. We believe that municipal governments are the primary deliverers of services to their community and they know the community needs. We are the safety blanket. For example, with health insurance, the City has nine clinics. Healthcare companies and insurance certainly haven't gone out of business. The hospitals haven't gone out of business by the City having health clinics for those who don't have health insurance, for those who can't get into a hospital. That's why we're there to provide that safety net. And we believe for a City to be viable in the 21st Century, it has to ensure that its citizens — all of its citizens and not just those that can pay — has access to advanced technologies that the private sector is providing.

IT: So Internet access isn't at all a privilege, it's everybody's right?

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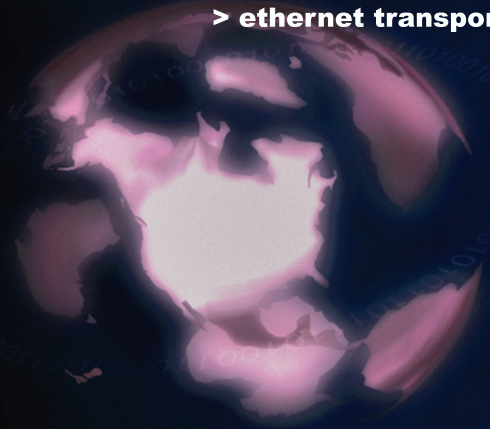

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Neff: Well, I think it's a needed skill set. It's having the basic computer skills, having the ability to transact your business and your life over the Internet. It is critical for going forward into the future.

IT: Are ILECs allowed to respond to the RFP?

Neff: Absolutely, there are no provisions against anyone bidding on this.

IT: How does the City view someone of Verizon's size and stature bidding?

Neff: It will depend on their response to the RFP. If they put together a quality proposal, we will look at it just as we will any other proposals that come in.

IT: Do you think that a smaller subcontractor would have a better chance partnering up with an enterprise solution vendor like a Verizon?

Neff: I don't think it breaks that way at all. I think it's an opportunity because of what we are requesting in the RFP for companies to come together and partner. And I think the best turnkey solutions will be those that come together. I don't know any one company — and I could be wrong because obviously I haven't seen any proposals — that could proposal on all of the requirements in the RFP. I think we'll see groups of companies coming together and selecting a prime [contractor] and submitting a proposal.

IT: Would you favor a consortium over a single large bidder like Lucent, Sprint or Verizon with a turnkey?

Neff: We'll apply the same criteria of evaluation whether they are large consortiums or a single vendor coming in. We'll really be looking at how well they address the requirements; what's the stability of the organization; do they have the resources to be able to perform. We're going to be looking very closely at all those issues.

IT: Verizon already has established a large infrastructure footprint of its own. Why would you build an infrastructure rather than lease it? What's the cost-benefit analysis?

Neff: One of the major differences was DSL as a fixed wireless [technology]. An ILEC infrastructure is inherently fixed based on technologies like DSL and cable. It does not provide the nomadic and portability outdoor wireless. Wireless Philadelphia recognized the increasing value proposition placed on nomadic and portable broadband, which was a needed criteria as we looked at this system. For example, for our field inspectors or any company that has service delivery or field operations, you need outdoor wireless. We've done studies that show by having high-speed access to data that we can save as much as two hours per inspector per day. That's a real cost efficiency that we need. We're in the process of re-evaluating all 600,000 parcels in Philadelphia. You either have to bring in lots of people or you need to use the technology. The cost for even slower speed cellular is too expensive. And this community network will provide us with the access that we need.

IT: You are requesting only Fixed Price contracts. Would you consider any cost incentives built into the contracts?

Neff: No. The RFP states there is a section for counter-proposals and we will consider including the ones that suggest alternative business models and proposals that include cost-risk sharing.

IT: So then you see that structure in a contract as a different business model altogether?

Neff: Correct.

IT: Do you believe the architecture will be based on an open platform (BSD or Linux) vs proprietary platforms?

Neff: In the security portion of the RFP, the City is requiring authentication and the capability to have different standards whether it's encryption or VPN tunneling. So what we will do is evaluate the responses that come back in and compare that and look at what the differences are. We expect we'll see a number of different proposals and some commonalities between the proposals. The [City] will evaluate those recommendations once all bids are received. So we haven't predetermined what that is because part of the RFP is to design the infrastructure but it is an evaluation criteria.

IT: Will the City give greater weight if the turnkey solution includes value-added services or service bundles

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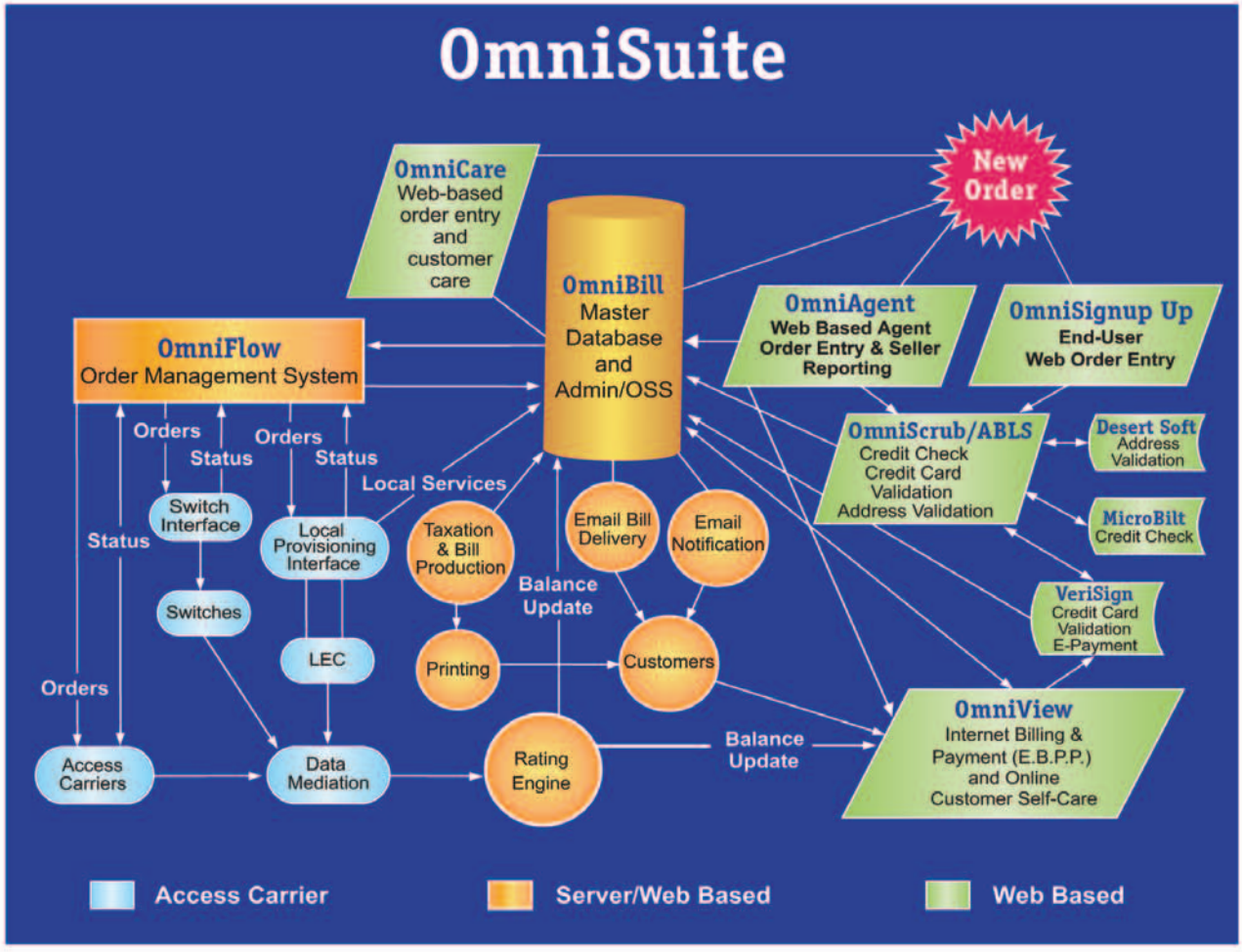

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like solutions that incorporate VoIP providers?

Neff: They're optional. We're looking to provide the basic infrastructure and then make it an open inclusive network so that the private sector can deliver value-added services over that infrastructure. We want to make sure we have a robust infrastructure that will allow it but it is not a requirement. Obviously, we'll be looking at the future of the network — where it goes. The base connectivity is to provide Internet access with e-mail and newsgroups and basics like that. Then there will be an opportunity to add value-added services that companies can deliver over that infrastructure.

IT: You announced at the pre-proposal meeting that the City is still working out the terms for a service level agreement (SLA) to define the parameters of the service that will be delivered on the wireless network for the benefit of both the provider and the recipient. Do you think the SLA details will be finalized before the May 23 bid deadlines?

Neff: We have currently on our program scheduled to be working through the SLAs in the month of June. The responses will be coming back in at the end of May.

IT: So respondents won't really have a chance to include service providers in their bid because they won't know what the SLA includes?

Neff: Correct…although I do want to give you a clarification on this. In the Business Plan, we talk about that and the different service offerings that we're expecting the ISPs to be able to do because that reflects back on the type of infrastructure that the network people have to build. So that information is in the business plan so they have the basic idea. They just don't have the specific details of what that service level agreement will require. We have estimates on subscribers and the types of services that we expect to see the ISPs providing.

IT: Ms. Neff, Thank you.

Responses were due to be received by May 23, 2005. The Wireless Philadelphia initiative will select winning respondents with which to enter into contract negotiations by July 25. The project is scheduled to begin construction by August 22, 2005. IT

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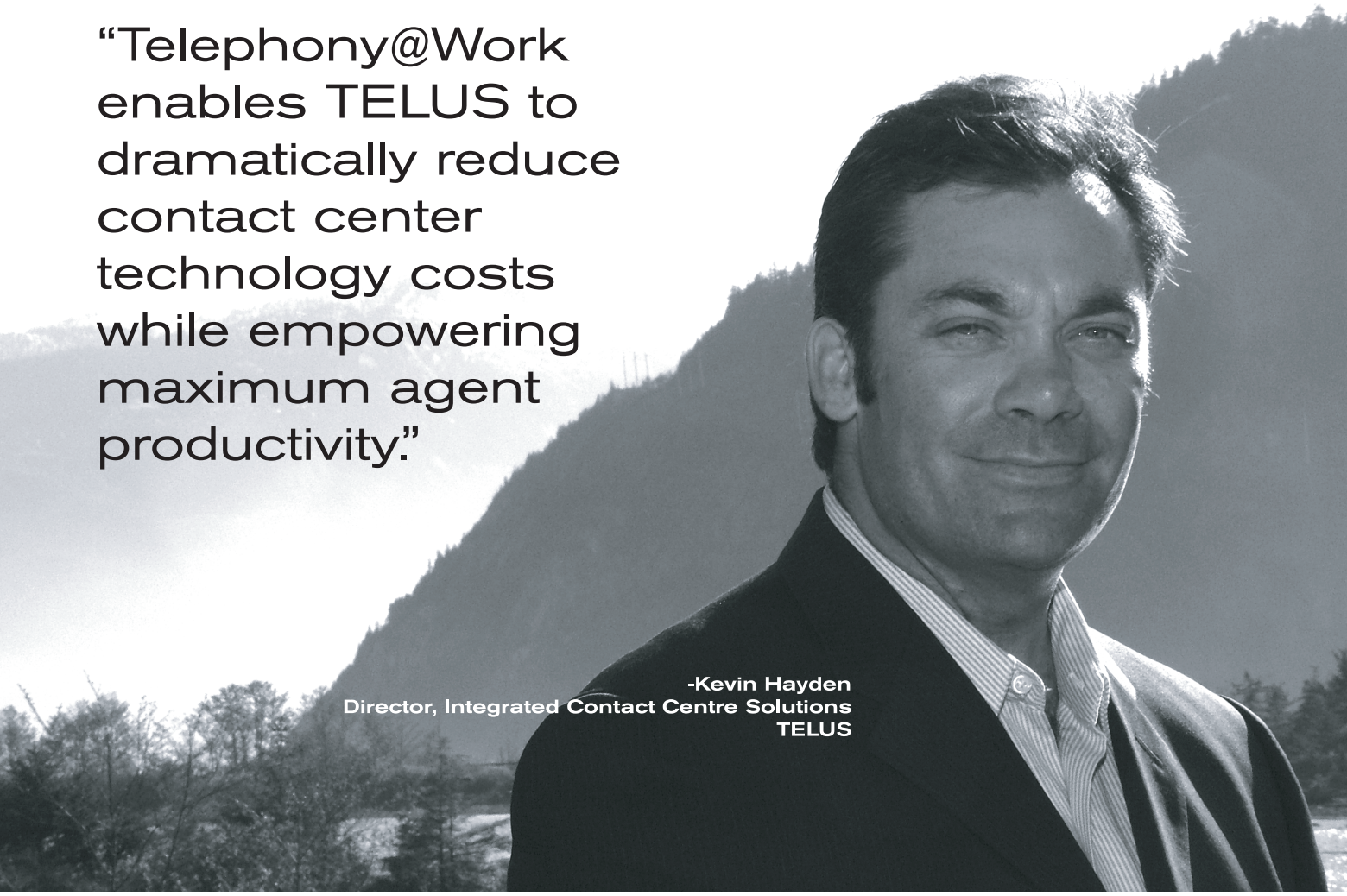

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MetTel's Session Border Control Deployment: A Case Study

Lynchpin to Security, Geographic Expansion, Advanced IP Services Support

Ambitious VoIP plans call for smart planning, with first things first — security not the least among them.

One such ambitious network operator, Metropolitan Telecommunications (MetTel), plans to expand its competitive local exchange footprint from a current 15 states to more than 35 states by the end of 2005. It also plans to respond rapidly along the way to demand for advanced IP-based communications and collaboration services among its primary small and medium business (SMB) target market.

Among its first steps in executing on these aggressive plans, MetTel announced in March that it is deploying nCite Session Border Controllers from Netrake.

According to MetTel executives, the nCite deployment constitutes a necessary precondition for executing on both its geographic expansion and its advanced VoIP (define - news - alert) and IP multimedia services roadmap. Laying the groundwork for session control now, they explain, will deliver benefits including, and beyond, security in the near and distant future.

Trusted Peers: Securing Home Infrastructure

MetTel initially began providing competitive voice and data services to customers in New York City nearly a decade ago. It has since expanded its Unbundled Network Element-Platform, or UNE-P (define - news - alert), services footprint to 15 states — primarily on the East Coast, from Florida to Maine, though also in Texas. It primarily serves the SMB market and counts a number of Fortune 1000 multi-location customers across one or several states among its clients.

Unlike many UNE-P-based competitive local exchange carriers (CLECs), MetTel deployed its own VoIP offering more than two years ago. For most customers, it has delivered telephony services through gateways to standard public switched telephone network (PSTN) interconnections with incumbent local carriers. Through the PSTN (define - news - alert) gateway, the softswitch has looked to customers like a traditional Class 5 TDM (define - news - alert)switch serving their traditional TDM phones.

MetTel will continue to serve TDM customers based on PSTN gateway interconnections. "That business won't go away any time soon," says Sam Vogel, Chief Marketing Officer for MetTel. "Customers will determine when and how they migrate away from TDM."

However, VoIP will anchor MetTel's efforts to reach new customers as it doubles its geographic reach this year. Because the Netrake session controllers enable secure IP-to-IP peering via the Session Initiation Protocol (SIP), these platforms position MetTel to begin offering hosted VoIP services, while it continues to serve TDM customers, from its offering.

"Netrake will allow us to peer with many IP providers to open additional VoIP markets quickly," says Ed Fox, Vice President, Network Services, for MetTel. He adds that, unlike some residential and SOHO VoIP providers, MetTel will not ask customers to buy access services from a third party to "get to us however you can. It will be a T1 or T1 equivalent we control so there will be no QoS issues," he says. "Netrake allows us to add off-net locations to our network, as well as the ability to peer and get traffic from markets where we need to interconnect with other local carriers."

In short, Netrake's nCite solution empowers MetTel to securely deliver SIP-based applications to its business customers across its own VoIP infrastructure, as well as across peer networks. This will provide its avenue to

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"Customers will determine when and how they migrate away from TDM."

geographic expansion.

Because the session controller must support what is effectively a national IP peering play, the company made scalability a top priority in vendor selection. According to Fox, nCite's real-time operating system plus proprietary hardware for high-volume packet processing enables a single session controller to provide a range of security features that can be scaled up with confidence. Netrake says it designed nCite to provide security for up to 150,000 VoIP registrations in a single shelf.

"First and foremost, we provide the security fabric to protect their infrastructure so they can readily offer a diverse set of IP-centric voice features across a wide geographic footprint," says Shahsi Kanth, Director of Customer Engineering for Netrake. "MetTel is well aware," he adds, "that VoIP operators must learn from the data networking industry that security must be built into the industry's foundations, rather than turned to as an afterthought."

Network-to-Enterprise Application

Through an agreement reached in January, MetTel will begin in the second quarter of 2005 to resell VoIP services from other SIP (define - news - alert)wholesale carriers thus requiring Netrake to support multiple SIP-based, IP-to-IP interconnects. MetTel plans to gradually build its own hosted IP PBX and other VoIP services over time.

As MetTel employs this dual strategy to gain VoIP customers, it will rely on its session controllers for not only carrier-to-carrier, but also carrier-to-enterprise features. These include firewall and network address translation (NAT), firewall traversal, and denial of service attack (DOS) prevention for secure delivery of advanced communications features such as browser-based Web account management, IP video, and multimedia conferencing. Additionally, the session controller provides per-session historical reporting for both billing and session performance analysis and troubleshooting.

"SIP serves voice, video, IM, and other telephony applications; given the IP nature of SIP, all are vulnerable to all kinds of intrusions," Kanth says. "With the Netrake nCite, MetTel can securely offer all the services they want while helping customers avoid firewall headaches through remote firewall/NAT traversal for hosted PBX. MetTel is

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hosting that process in the network and therefore taking the burden off of their customer's shoulders."

MetTel also is now positioned to help existing customers make the transition from TDM to VoIP at their own pace. "They have to be ready to accept the technology and pony up the money to convert the service," says MetTel's Vogel. "It may at first be new locations, where they wish to make the step to hosted VoIP instead of buying traditional PBX for example."

In the enterprise session control application, scale will matter too. "Netrake was the only supplier that offered firewall and network address traversal, peering, and had Virtual Proxy Server on its roadmap, where you're paying one license, instead of separate licenses," Fox says. "They melted it all together. That is how they architected the system by being hardware-centric, while similar systems have to add software to support these different functions. So we're more confident in their reliability and scale numbers because of that architecture. When you talk about scaling software, it's a scary issue. With Netrake's hardware solution, it works."

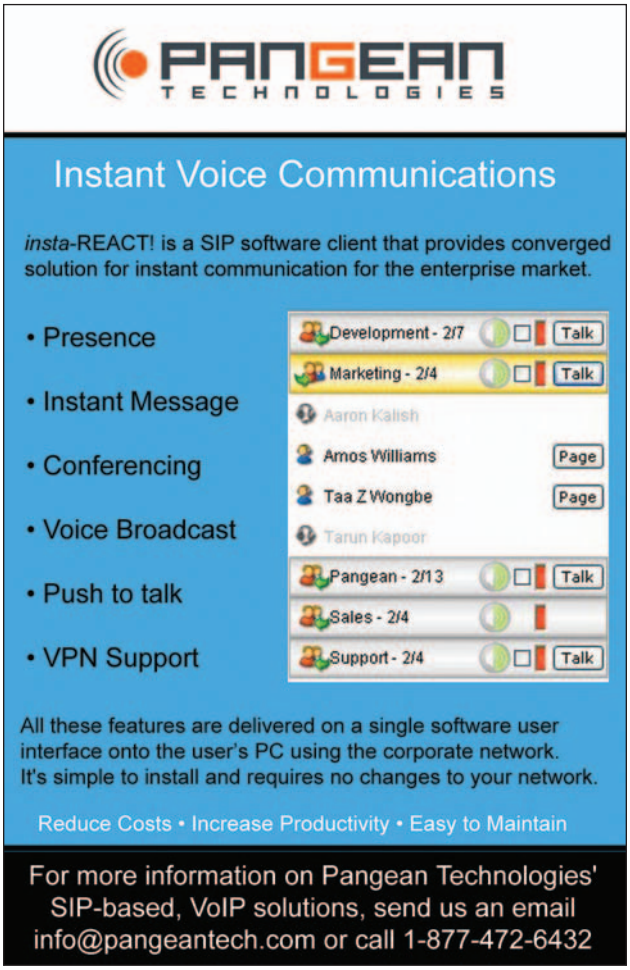
According to Kanth, whether applied to peering with a Level(3) or to a direct IP interconnect with an enterprise, MetTel needs to secure each interconnection point. "Our architecture supports one or many SIP proxies for partitioning of each enterprise to address concerns about unauthorized access," he says. "We protect their softswitch core. As they add more applications and customers, we'll scale with them."

nCite also features remote, automated configuration of customer premises VoIP equipment through its element management system (EMS). "Billing was a big issue," Fox says. "We can pull CDRs [call data records] from Netrake in XML," or extensible Markup Language, a standard formatted data exchange standard. "All our other VoIP and switch operations support are native XML," he adds. "The big draw is we don't have to make changes in the EMS."

> Security must be built into the industry's foundations, rather than turned to as an afterthought.

Fox further notes that the remote CPE configuration, combined with virtual SIP proxy server partitioning, will allow MetTel to "take the intricacies out of customer turn up. It moves the equipment and smarts out into the network. The whole premise is security — allowing us to preempt coming SIP security attacks. Netrake is our joint defense to that."

As small and medium business demand for IP communications, collaboration, and converged multimedia grows, MetTel has laid a solid foundation to respond. IT



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Price: List pricing for AccessGate is $20,000 per pair.

Optimizing bandwidth utilization has become more critical even though simultaneously technology is evolving to improve bandwidth throughput — whether it's wireless, over copper (DSL, T1, E1, etc.) or fiber. The reason is simply cost and the resultant margins. In an increasingly competitive telcom/datacom landscape, keeping your costs low with the highest possible profit margin is critical. In most wireless networks, operators bear the recurring cost of traffic backhauling in order to connect geographically dispersed cell sites with their core networks. As access networks have been built out to support wireless services, each newly deployed service has required additional dedicated transmission equipment (such as leased lines, satellite trunks, or microwave links) between the base station and the base station controller. According to NMS Communications, this backhaul cost can represent up to 20–30 percent of total network operating expenses (OpEx). By reducing the number of these connections, operators can eliminate a significant portion of network OpEx.

NMS' (news - alert) AccessGate is a backhaul optimizer that reduces the backhaul OPEX expense in GSM networks. NMS's AccessGate provides up to 2:1 bandwidth savings, drastically lowering operating expenses and according to NMS, it typically allows wireless operators to recover their investment (ROI) in less than 12 months. According to NMS, the ROI is less than 12 months for T1/E1 when monthly link costs are $400–$1,000 and less than four months for expensive satellite links. Additional savings can be achieved in specific cell site configurations, such as those involving TDMA, EDGE, and UMTS. AccessGate is specifically designed for radio access networks (RANs) and consists of systems installed at the central office (CO) that are connected to units deployed in the cell sites.

NMS actually pioneered unique aggregation and bandwidth reduction techniques that enable wireless operators to maximize network utilization, while still preserving call quality and only adding an impressive less than 9 ms end-to-end latency. The NMS wireless backhaul optimizer not only recovers unused DS0s, but it also recovers inactive bandwidth at the subchannel level through intelligent processing of network traffic. This "freed up bandwidth" can then be used to offer additional services. The AccessGate product uses A.bis multiplexing and optimization techniques and will operate in existing radio access infrastructure and integrates easily with legacy radio systems.

One important note is that AccessGate does not perform vocoding, so it actually preserves audio quality and data integrity. Interestingly, some of the product's heritage came from NMS's expertise in their VoIP product line — in particular their packet optimization within their VoIP products.

RATINGS (0–5)
Installation: 5
Documentation: N/A
Features: 5
GUI: 4.75
Overall: A

So How Does It Work?

Essentially what the product does is create its own HDLC packet that contains the optimized payload. Silence is removed completely which alone can save 40 percent on bandwidth. Typically when a E1/T1 channel is idle, signaling is still sent, however with AccessGate, it eliminates these idle packet payloads. Similarly, with GPRS or EDGE data, if no data is being sent, the AccessGate with keep the connection alive with reduced payload.

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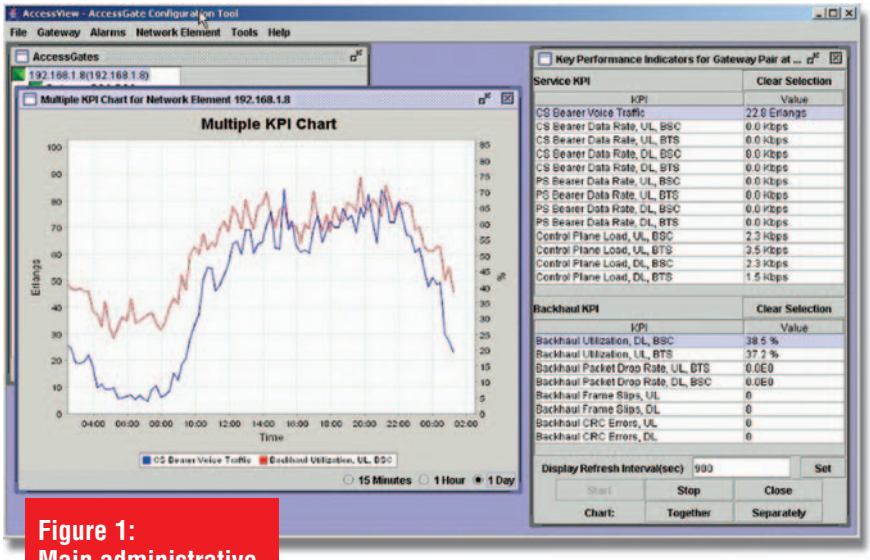

Figure 1: Main administrative interface.

The system located at the cell site is a small, cost-effective device designed to optimize the bandwidth utilization of 2G, 2.5G, and 3G mobile traffic. The device optimizes, aggregates, and multiplexes mobile traffic from multiple cell site services onto a common backhaul to an AccessGate system at the CO, and performs the reverse operation for traffic coming from the CO to the cell site. By enabling operators to backhaul traffic over a reduced number of leased lines, AccessGate reduces current operating expenses.

At the CO, AccessGate is a high-performance, carrier-class, scalable platform that terminates multiplexed streams (backhaul connections) from multiple AccessGate cell site gateways. The CO system processes traffic from each cell site to reconstruct frames and channels. The original frame is then delivered to the base station controller (BSC) and, where applicable, to the 3G radio network controller (RNC).

One interesting feature is the ability to pass SNMP traffic over the backhaul link essentially using an IP packet to be able to remotely manage remote cell sites. In fact, the administrative interface (See Figure 1) is a Java application that transmits the SNMP (define - news- alert) signals to and from the interface over the backhaul link. The management tool application can run from PCs with access to a LAN on which Central Office AccessGate systems are running. The tool can be launched as a native application, or integrated with HP OpenView or with the operator's OSS (using its embedded SNMP agent). The AccessGate management tool's main functionality includes the ability to configure and view system, trunk, timeslot, and subchannel parameters, remotely upgrade system software, acknowledge and delete system alarms, monitor and view charted data for key performance indicators (KPIs), and more.

The cell site unit (BTS) is a 1U server with DC power, 50 watts, and currently eight T1s/E1s with a 16 T1/E1 version called the AccessGate 1000 which will be available shortly. The BSC unit is a CompactPCI chassis with N+1 redundancy, 12U, STM-1, OC-3, etc. You can configure certain trunks to be backhaul, Iub, or A.bis. One really nice feature is that the product has a bypass feature that detects if the box fails due to power failure or software failure and it then triggers a relay switch to connect the BSC straight through to the BTS. The relay switch connects the two at the physical "copper" level, so although you lose the optimization techniques, you minimize potential outages. NMS claims five nines (99.999%) reliability with pass-through enabled.

Another nice feature is that you can set by subchannel or timeslot the ability to NOT optimize traffic, i.e., for sensitive traffic. Another nice feature is that you can remotely upgrade the units at the same time. It has QoS so that if channels are busy, in the event of any congestion, the upgrade download will continue but at a slower throughput. Essentially IP gets a lower priority over voice. Also, when rebooting the unit during an upgrade, the relay switch previously mentioned "kicks in" until the unit has completely booted up, so your backhaul links still go through.

Migration Path

AccessGate provides a cost-effective migration to EDGE and 3G. AccessGate provides cost saving and benefits during the rollout of EDGE and 3G radio access networks AccessGate aggregates and optimizes EDGE traffic to form a reduced and "pooled" backhaul link group. When introducing UMTS, Node B systems are added to GSM cell sites, requiring an additional E1/T1 connection to accommodate minimal

additional network traffic — but not if operators use AccessGate. AccessGate can accommodate both 2G (A.bis) and 3G (Iub) interfaces in a single system. The AccessGate cell site system aggregates traffic from the Node B (Iub interface), utilizing bandwidth made available by compressing the GSM traffic. Wireless operators can avoid both the installation and recurring costs of E1/T1 lines as 3G RAN is deployed, until bandwidth is more fully utilized.

Features

Aggregates T1/E1 communications onto a common backhaul between the cell site and the MSO. It also performces statistical multiplexing which suppresses idle frames and idle channels for 2G services, making the most of backhaul bandwidth.

Other features:

- Bandwidth savings: Achieves a bandwidth savings ratio of up to 2:1.
- Backhaul media: Satellite, leased lines, and microwave.
- Network interfaces: Supports interfaces for 2G, EDGE, and 3G networks.
- OAM&P: Offers simple management and provisioning; SNMP MIB.
- High availability: Provides five nines reliability on the CO system, with pass-through.
- Network interoperability: Supports 2G, 2.5G, and 3G networks.
- Scalability: Up to eight T1/E1 lines in a flexible configuration for cell site systems, and up to 120 T1/E1 interfaces for the CO system.

Conclusion

Simply put, AccessGate reduces the number of E1/T1 connections to the CO resulting in improved efficiency in 2G networks today that can also be applied as 3G and EDGE are deployed. AccessGate was designed from the ground up to address the critical requirements of telecom operators, including reliability (Five 9's) and low latency. With a common backhaul, provisioning and management is easy, and these systems integrate with the operator's existing infrastructure. TMC Labs can say unequivocally that NMS Communications is the true pioneer in backhaul optimization that others have copied, but never truly duplicated. IT

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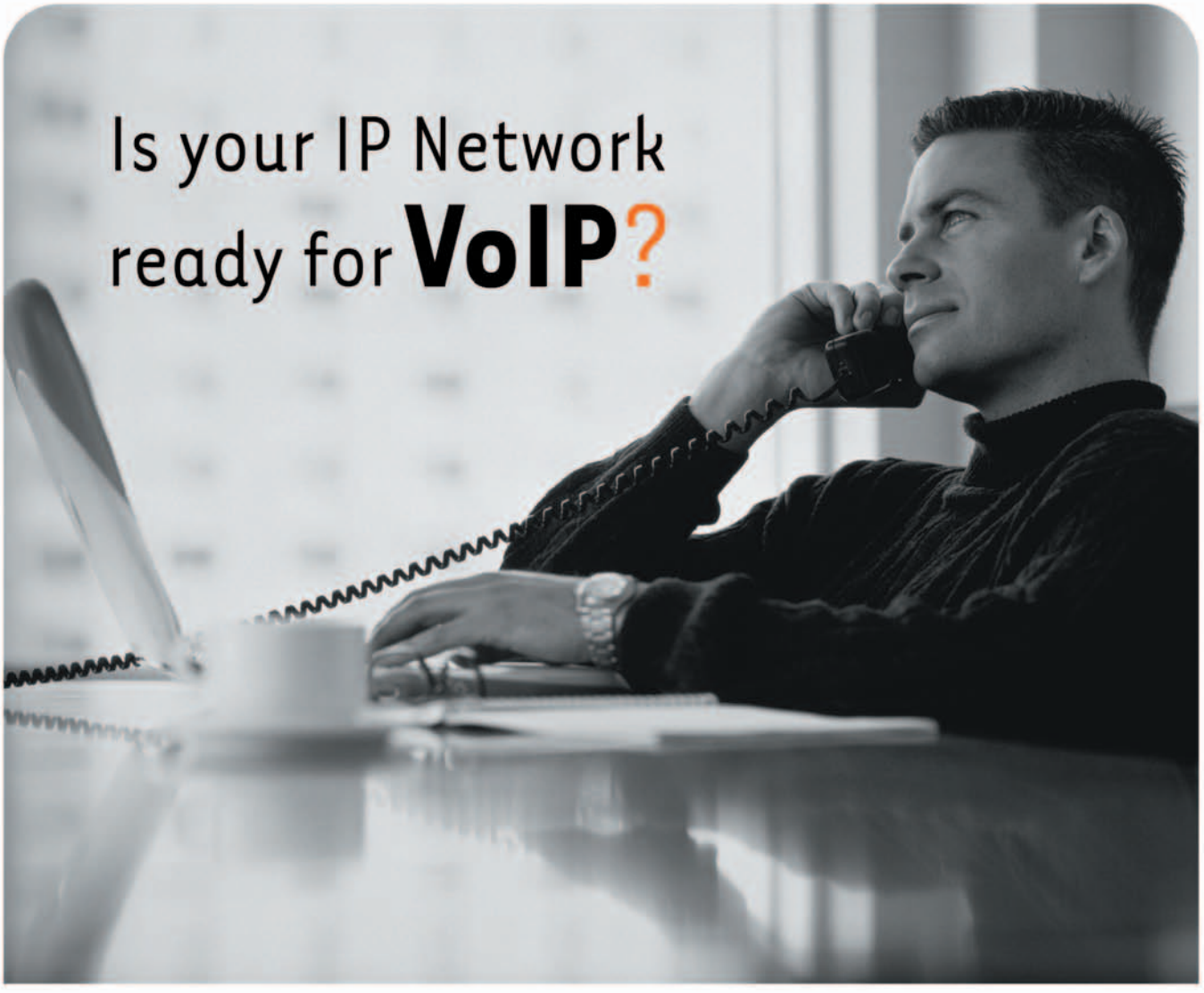

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Session Border Controller Market Outlook

In just three years session border controllers have gone from a new concept, to a hot new product to just another piece of infrastructure required to operate a VoIP network. Now that this solution has reached the threshold of acceptability and the technology is more widely understood, the marketplace for companies whose sole product is based around a session controller is experiencing increased competition. This competition is coming from a number of places including competition from softswitch vendors incorporating session controllers and functionality into their product line, from router vendors incorporating session controllers into their product line, to a lesser extent from companies that give away their technology, and from foreign competition. This competition is driving the price per port downward, which in turn puts pressure on the session controller companies to widen their portfolio and redefine their product or to become acquired by another company who is looking to complete their VoIP portfolio. Due to this increased competition, the long term outlook for companies whose sole product is a session controller is uncertain. Fortunately, the outlook for VoIP (define - news - alert) networks is bright. And there are many ways to compete.

The Need For Session Control Remains

It is clear that there will not be a single VoIP architecture that serves all purposes in the evolving network. There will continue to be a market for companies deploying "traditional" softswitches that use H.248, MGCP (define -news - alert) , and SIGTRAN (define -news - alert), those that are deploying H.323 solutions and those that are concentrating on the "next-gen" solutions using SIP.

These solution architectures are used to provide services into multiple physical networks including the wireline and wireless data network, the wireline and wireless telephone network, the cable TV market, and the power network. There is a real need to communicate not only within a specific physical topology among the various vendors and providers within that topology but also to bridge these physical networks and provide services across them in a unified way. The good news for the session controller market is that there is a common need across these solution architectures and across physical topologies for a session controller function whether it is supplied as a stand-alone device or integrated into another element such as a

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By Nathan Franzmeier

softswitch or router.

The Role Of Session Controller In The Network

The requirements for the session controller function vary depending on the type of network being deployed. For example in a wholesale carrier market, topology hiding, protocol conversion and network traffic management are important. In a retail VoIP solution, the SIP registrar, SIP proxy, and firewall traversal functions are essential. Different vendors take different approaches to how to address the variety of needs in the various VoIP networks, which have mirrored the PSTN. In the VoIP world, the concept of wholesale networks specializing in Class 4 services and retail networks that specialize in Class 5 services persists. Typically companies are focusing on one area or the other. Some SBCs have found a niche in wholesale carriers who are grooming (protocol conversion, topology hiding, etc.) their IP traffic as it enters or leaves their network. The SBCs take care of the vagaries involved in interconnection of two disparate networks. Other SBCs have specialized in the retail networks and find themselves solving NAT traversal issues and providing authentication services to the retail edge devices.

Addressing The Future

While these traditional session controller functions have proven themselves as an important piece of VoIP networks, there is a continuing trend for the common features to be commoditized. The features that are hot are being rolled into other product lines, and in some cases new product categories such as "NAT Traversal" solutions have sprung up at price points that are hard to compete with. To compete in this environment, some companies are rethinking and redefining what a "session controller" is. Session controllers have all the components needed to provide end-to-end services in a network. They can control the signaling path, they control the media path, and they have the ability to monitor, report, and route using all the information available on the network. "Session controller switching" is ideally suited for VoIP networks. As this concept matures, the session controller companies are continuing to expand the role of the session controller to include new functions that overlap those of other traditional VoIP network components. For the same reasons that softswitch vendors are looking for session controller functionality, session controller companies are looking to incorporate some of the other roles that have traditionally been

held by softswitches. Their role is expanding not only into the role of the softswitch to control a network, they are also branching into IVR-based media based services, endpoint services, instant messaging, and more. As this trend continues the distinction between the softswitches, session controllers and media servers continues to blur.

As the distinction between components blurs, session controller companies are having to rethink their architectures. In many cases, these session controllers were designed to be delivered as single point solutions to be inserted into these wholesale and retail networks. Many times these solutions were "closed" solutions. This has worked well for the past few years, but the commoditization of the most widely used features has driven the pricing for these features and this mechanism for packaging and delivery down. This has in turn driven companies to evolve their architectures to be more modular. Closed solutions are becoming more open. Companies that cannot adapt are going to either be acquired for their technology or go away.

The distinction between the softswitches, session controllers and media servers continues to blur.

Conclusion

As the market continues to evolve, there will continue to be many opportunities for companies involved in VoIP to succeed. To succeed, companies will have to continue to adapt and evolve their product lines to address the competition and still deliver the services that the market needs. Moving forward, the technology involved in deploying a network will become less important than the services that can be layered on top of it. The goal of the equipment and technology vendors, regardless of how they define themselves today, should be to deploy technology architectures that are well suited for this emerging "services oriented" network. It is clear that session controller technologies will continue to play an important role in these networks. IT

Nathan Franzmeier is chief executive officer at Emergent Networks. For more information please visit the company online at http://www.emergent-netsolutions.com.

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Open Shelf Architectures Reduce Service Provider CAPEX And OPEX

With the economy continuing to exhibit strong growth, major carriers are moving forward with plans to migrate their existing circuit-switched voice and data TDM (define - news - alert) networks to IP packet networks. They're also rolling out new VoIP, mobile data, video-on-demand, and other multimedia services. Growth should be particularly strong in the wireless area, as service providers expand their coverage in established markets like Europe and North America, ramp up to provide coverage in third-world countries, and begin to deploy new worldwide 3G wireless data services.

As telecom OEMs formulate their design and platform strategies, they must grapple with the age-old question of what to build in house, and what to outsource. Historically, Telecom Equipment Manufacturers (TEMs) have built virtually everything in house. More recently, though, deregulation has made the service and equipment landscape increasingly competitive, making it difficult to deliver home-grown equipment in a timely, cost-effective fashion.

Open platforms like AdvancedTCA, AdvancedMC, and MicroTCA make outsourcing convenient, providing easy access to mass-produced, off-the-shelf hardware and software components. This open architecture approach greatly reduces the time and cost associated with designing and manufacturing telecom equipment, savings that are ultimately reflected in reduced capital expenditures for service providers. These open platforms also facilitate the design of modular, flexible telecom systems that are easier to scale, upgrade, service, and maintain, benefits that are ultimately reflected in reduced service provider operational expenses.

Open Telecom Frameworks Evolve

Subsystem OEMs, particularly suppliers of board-level products, have been trying to lure telecom equipment manufacturers with open shelf architectures for two decades. Most of these, however, have been adaptations of general-purpose platforms not ideally suited to telecom. AdvancedTCA, AdvancedMC, and MicroTCA are the first open platforms developed from the ground up specifically for the telecom industry, and the first developed with input from leading TEMs and service providers.

ATCA provides the quintessential platform for building scaleable, cost-effective, high-availability, high-density telecom systems. Its high-bandwidth (10 Gbit/sec per link) switched fabric gives it the throughput and scalability needed to host advanced multimedia services and grow system capacity. Its large form factor (8U) and high-power capability (200W per blade) enables it to implement complex functions and accommodate a larger subscriber base in a smaller

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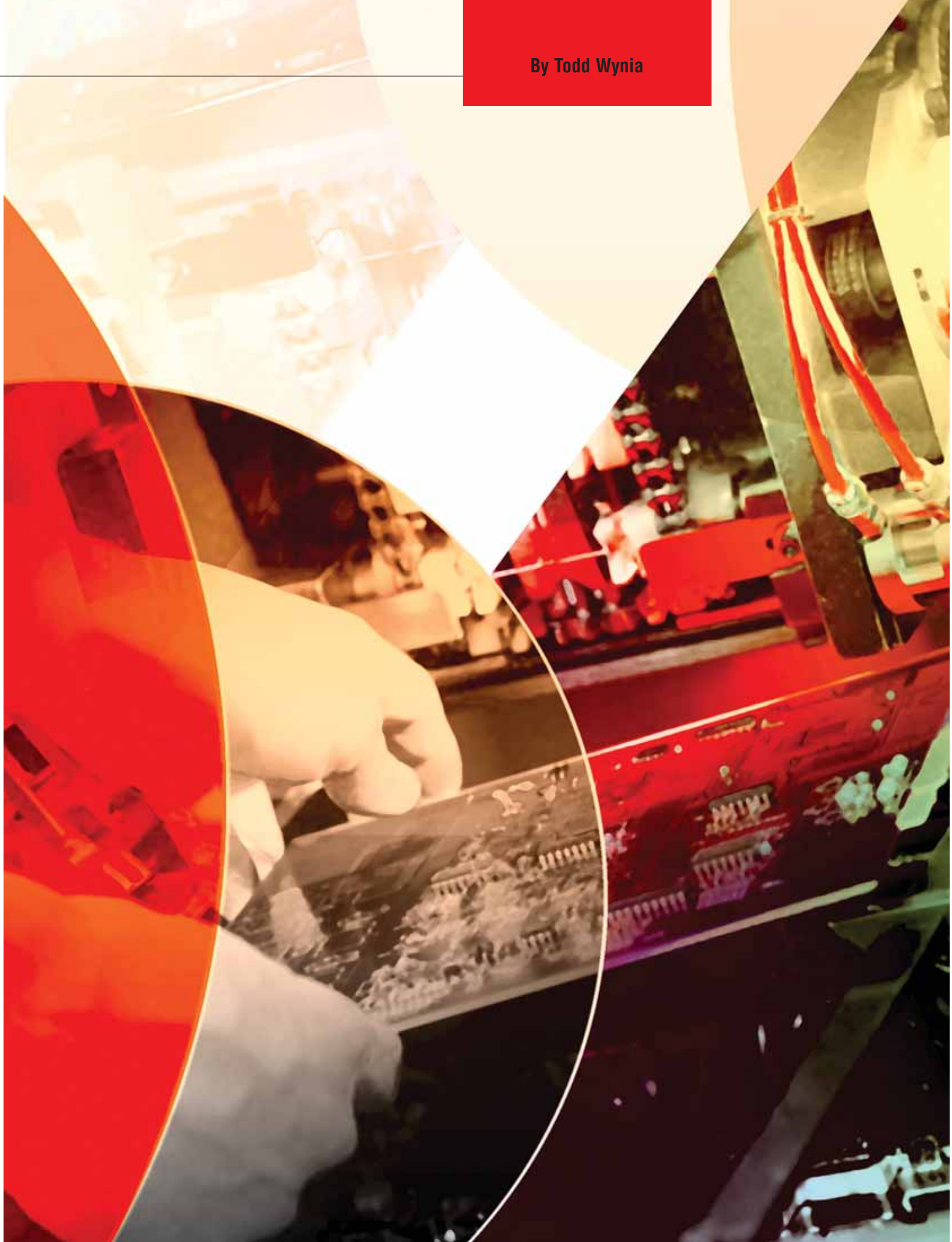
By Todd Wynia



footprint. Its redundancy and "hot swap-ability" reduce susceptibility to point failures and enable individual blades to be serviced and upgraded without disrupting overall service. And its integrated system management facilities enhance availability by providing greater visibility into and control over blade level operation.

AdvancedMC enhances ATCA (define - news - alert) flexibility by extending its high-bandwidth, multi-protocol interface to individual modules, which can be replaced in the field without taking entire ATCA blades off line. Like ATCA, AdvancedMC features a high-speed serial packet interface (up to twenty-one 12.5 Gbit/sec I/O channels), a high power handling capability (up to 60W per module), and an IPMI interface, which enables shelf management to monitor and control individual modules residing on ATCA blades.

Modular ATCA/AMC Framework Reduces CAPEX

ATCA blades equipped with AdvancedMC modules provide a versatile platform for building telecom systems that can be designed, manufactured, and spared at lower cost. Once deployed in the field, these modular systems also reduce operating costs by enabling service providers to scale, upgrade, provision, and service their systems with a finer degree of granularity.

The ATCA/AdvancedMC framework reduces equipment cost by facilitating a Lego-like approach to blade design that eliminates the need to develop a custom blade for each application. With ATCA/AdvancedMC, TEMs can create application-specific blades by combining a generic ATCA carrier with generic AdvancedMC components such as network interfaces, control processors, network/signal processors, and mass storage devices. Because the blade and modules are generic, they can be reused across multiple applications, thereby reducing design time and production cost. The generic nature of the blades and modules also reduces the number of unique blades that TEMs have to purchase and stock, and makes it easier for TEMs to outsource or purchase blades and modules off–the-shelf.

Modular, field-replaceable ATCA/AdvancedMC systems are also easier and less expensive to scale and upgrade, which reduces CAPEX by enabling carriers to deploy the minimal hardware needed to service their subscriber base. Consider for example, an ATCA-based core router equipped with AdvancedMC network processor modules, or a VoIP gateway equipped with AdvancedMC transcoding modules. Both systems could be deployed in a minimal configuration and scaled later to accommodate additional subscribers by adding blades (or individual modules) without taking the gateway or router off line. This pay as you go approach substantially reduces service provider capital outlays, while providing ample headroom for future expansion.

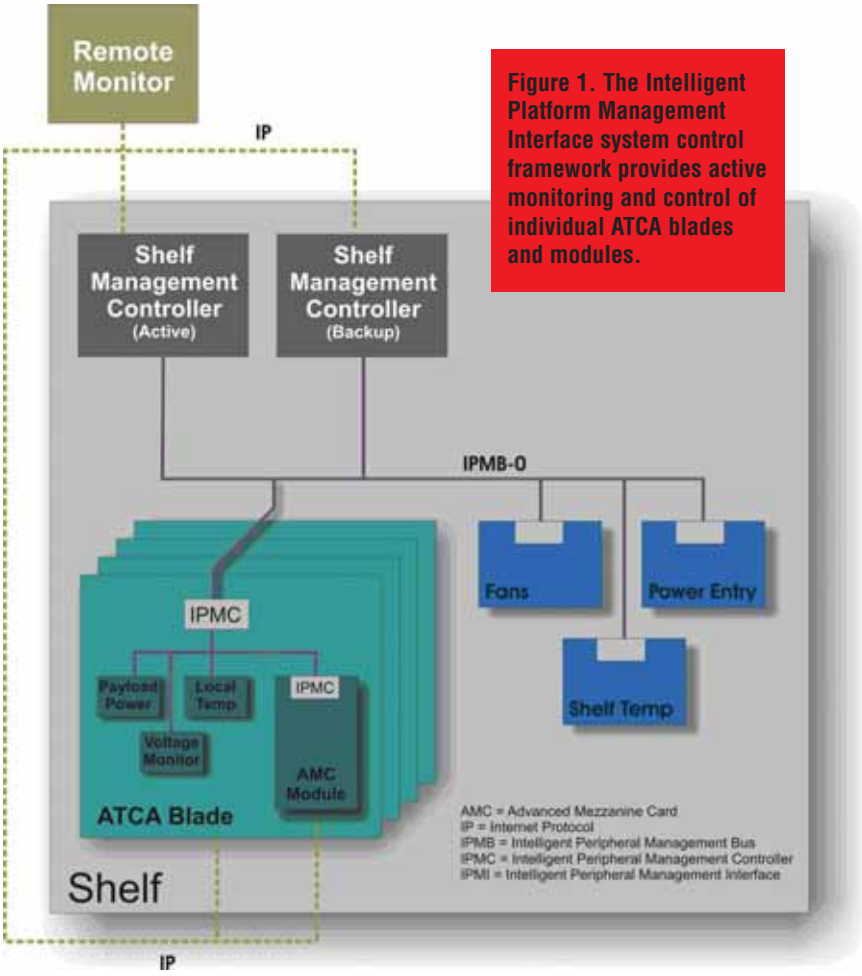


Figure 1. The Intelligent Platform Management Interface system control framework provides active monitoring and control of individual ATCA blades and modules.

ATCA/AdvancedMC Reduces OPEX Too

Reduced equipment costs make the ATCA/AdvancedMC platform attractive to service providers on a tight budget. Even more attractive, however, is the long-term savings this platform offers for OPEX. One of the principal ways that ATCA/AdvancedMC systems reduce OPEX is by reducing the impact of component failures. Because ATCA blades and AdvancedMC modules are field replaceable, they can tolerate failures to individual blades/modules with minimal disruption to overall service.

Consider, for example, an ATCA optical WAN blade with eight AdvancedMC modules, each providing dual OC-3/STM-1 channels. A failure in any particular OC-3 channel might,

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Open architecture greatly reduces the time and cost associated with designing and manufacturing telecom equipment.

at most, take out two OC-3 channels (one module), versus all 16 for a monolithic blade on which the 16 channels are mounted directly to the baseboard. Similarly, failures to any single module on a multi-channel SIGTRAN signaling blade or DSLAM blade would only impact the signaling links or subscriber connections provided by that module.

Modular ATCA/AdvancedMC blades also reduce provisioning cost by enabling service providers to scale and provision their systems according to actual demand. Consider, again, the ATCA optical WAN card equipped with eight AdvancedMC cards. In this configuration, the optical channels can be added and provisioned in blocks of two rather than 16. This fine granularity can also be used to reduce the cost of sparing. Regardless of the number of active channels used in the system, spare replacements (on line and on the shelf) would usually require only one or two modules, not an entire 16-channel blade.

One of the greatest contributors to overall CAPEX (define - news - alert) and OPEX (define - news - alert) savings in ATCA/AdvancedMC systems is the IPMI (Intelligent Platform Management Interface) system control framework, which enables chassis management to actively monitor and control individual ATCA blades and modules. Through IPMI, chassis management can monitor physical system health characteristics (such as voltage, fan speed, temperature, and power supply status), negotiate power allocation, and remotely shutdown/restart the system. This fine-grain monitoring and control reduces service provider OPEX for carriers by making it easier for chassis management to detect and correct faults.

Another way that IPMI can help reduce OPEX is by facilitating negotiated power management, which helps chassis management optimize system-wide power consumption and cooling budgets in high-density systems utilizing large numbers of high-performance processors. Through IPMI, chassis management can negotiate with individual blades for power allocation, and dynamically throttle back power to boards that are idle or not essential. This dynamic capability enhances availability by enabling shelf management to ensure continuous operation for the most important boards when total power usage and heat generation threatens the available budget. It also increases effective power density by reducing overall power consumption, which enables service providers to deploy more heavily populated systems.

MicroTCA Addresses Low- To Mid-Range Apps

The high performance, flexibility, and availability of the ATCA/AdvancedMC platform make it an excellent fit for many mid-range to high-end telecom applications. This performance, flexibility, and reliability, however, comes with a price tag that makes it too expensive for many low-end central office, access, outside plant, and customer premises applications.

To address low- to mid-range telecom applications with tight space and/or cost constraints, PICMG is in the process of creating a new specification based on the AdvancedMC platform known as MicroTCA MicroTCA will provide a compact framework that enables AdvancedMC modules to be plugged directly into a 4U rack-mountable, 19-inch shelf, which is only 300 mm deep, including cabling.

The MicroTCA specification is still in development, but the plan is to provide scaleable bandwidth from 1–40 Gbit/sec and scalable reliability from three 9's to five 9's. Utilizing the same serial transport mechanism as AdvancedMC, MicroTCA backplanes will provide a bandwidth of up to 12.5 Gbit/sec per channel, with a bias toward supporting star, dual-star, and full-mesh topologies. Similar to ATCA and AdvancedMC, MicroTCA will be protocol agnostic and provide redundant IPMI interfaces.

By leveraging existing ATCA/AdvancedMC infrastructure (such as IPMI) and utilizing the installed base of off-the-shelf AdvancedMC modules, MicroTCA will be able to offer many of the performance and availability advantages of an ATCA shelf in a more compact form factor at a fraction of the cost. This versatile, economical shelf architecture should prove very attractive to service providers who have tradtionally utilized custom products to handle edge, outside plant, and customer premises applications.

Together, ATCA, AdvancedMC, and MicroTCA provide a modular, scaleable end-to-end framework that addresses the full spectrum of high-availability telecom applications, from core routers and voice gateways, to converged customer premises equipment. This open framework drives equipment costs down by enabling TEMs to quickly configure systems using affordable, off-the-shelf hardware and software components. And it reduces operating costs by enabling carriers to scale, manage, and service their systems with a higher degree of granularity. For the first time, service providers now have the flexible, high-availability platform needed to cost-effectively deploy new packet-based networks and multimedia services while providing backward compatibility and interoperability with legacy circuit-switched TDM networks. IT

Todd Wynia is vice president of marketing at Artesyn Communication Products. For more information, please visit the company online at http://www.artesyncp.com.

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Using VoIP Software Building Blocks — A Look At The Choices

VoIP is now beginning to reach the mainstream market, as reflected in a recent IDC study projecting that the number of U.S. subscribers to residential VoIP services will grow from three million in 2005 to 27 million by the end of 2009. To meet this demand, an increasing number of Original Equipment Manufacturers (OEMs) are now developing VoIP-enabled products. In many cases, the expertise of these OEMs is in the areas of data communications, user interface development, or manufacturing — not VoIP. They need to easily and rapidly VoIP-enable their products without having to build their own VoIP capabilities from the ground up.

OEMs have long known about the benefits of merchant silicon. By utilizing application-specific standard products (ASSPs) produced by silicon vendors, OEMs can realize significant cost savings and time-to-market advantages over the alternative of developing equivalent technologies in-house. Today, no OEM would think of beginning the development of a product by kicking off a series of custom silicon development programs to create processors, memory controllers, Ethernet MACs, or UART controllers that are readily available via merchant silicon vendors. However, these same OEMs will regularly take on massive software development efforts to create from scratch the software that drives this silicon.

Fortunately, software exists from a variety of sources that can be leveraged by the OEM in the same way that merchant silicon is leveraged. This "merchant software" provides the same type of benefits that merchant silicon does in terms of reduced development effort, expense and risk. Merchant software is available in the form of software components or as integrated software platforms.

The Software Component Approach

Software components represent a class of merchant software that is readily available to OEMs, and provides a tremendous amount of design flexibility. This class of software is characterized by individual components or building blocks that perform specific functions. Examples of software components would be a G.729AB codec, or an Ethernet driver.

One advantage of the use of software components is that the OEM can leverage the functionality provided by the software without having to develop in-house expertise in the specific functions or invest developer time on the effort to

By Michael Ward

implement and validate the components. Other advantages include the ability to acquire and deploy only the specific set of functionalities that are needed for the system, as well as the ability to integrate these components into an already-existing architecture. However, the software component approach does have a disadvantage in that there is a given level of effort required to integrate the individual components into the overall product. This integration challenge may be further complicated if the components are sourced from a variety of vendors, each with its own interface methodologies. As additional sources of components are used, the effort required to manage various vendors increases, and there is a greater risk of encountering problems related to the interaction across components from different sources.

Software Platforms

Software platform solutions are another form of merchant software available to OEMs. Software platforms are solutions that incorporate collections of related functionalities, typically provided within an integrated software framework. A software platform solution may provide a full suite of VoIP media processing (multiple audio codecs, tone generation/detection algorithms, echo cancellers, etc.), together with such call control protocols as SIP or H.323 and a framework that integrates these components and presents the user application with a high-level API.

Software platform solutions share with software components the advantage of the OEM not having to learn and develop the base functionality. This allows OEMs to redirect efforts toward the development of features that further differentiate their products from the competition. A significant additional benefit is that the integration of the various functional components has already been performed and validated by the supplier of the software platform. In many development efforts, the integration of individual functional components represents the most significant portion of both development time and risk, so a software platform in which the functional components have been pre-integrated can provide a significant advantage in minimizing these challenges.

The reduced number of vendors that are a part of the solution may also help to minimize the effort in developing and managing the product. A potential drawback of a software platform solution for some OEMs is that a given platform may incorporate more functionality than is required for a specific application. This can be minimized by selecting a solution that is presented as a modular framework, allowing the unneeded components to be scaled out.

Sources Of Merchant Software

OEMs can access merchant software either directly from an individual merchant silicon vendor, from board-level vendors or through third-party software companies. The source of the merchant software adds several other decision factors that must be considered.

Software provided by a merchant silicon vendor has the benefit of being pre-integrated with the specific silicon device being used. This can save integration time and effort with respect to not having to learn the low-level details of the silicon interfaces. Additional benefits from this approach are that the software may (but not necessarily) take full advantage of the silicon architecture, providing possible performance gains. However, it is this same point that can become a disadvantage to the OEM, as the software is almost always limited to use on the specific silicon device. As a result, the provided software is not portable to designs that use silicon from another vendor. Additionally, many merchant silicon vendors will provide software as an enabler of the sale. Software development is not a key focus of the vendor, and as a result timely response to support issues or feature enhancements related to the software may not exist. The completeness and field-robustness of the software provided also may vary greatly across the software offerings from various silicon vendors, ranging from basic lab-grade bring-up or diagnostics code to production-ready solutions.

The OEM can leverage the functionality provided by the software without having to develop in-house expertise.

Board-level solutions — combinations of specific hardware and software — represent another delivery mechanism for merchant software. Benefits of this approach include the reduced development effort both in terms of hardware and software development, as well as integration. The OEM is able to focus on applications development, utilizing the VoIP sub-system provided by the vendor. Because this model takes more of a sub-system approach, it is not appropriate for many designs because the solution is delivered in a specific, defined form-factor. The specific form-factor (PMC module, CompactPCI card, etc.) may not be able to be integrated into the OEM's target platform, or may require special mechanical or electrical design to accommodate this pre-defined subsystem. The pre-defined nature of a board-level solution may also limit the extent to which new functionality can be deployed at a later time.

Dedicated merchant software vendors represent the final source of merchant software technology. Companies that offer merchant software for both portable and silicon-specific implementations are able to provide an additional level of flexibility to OEMs. Merchant software vendors typically support a number of silicon devices with the same base software components or software platforms. This provides the OEM with the flexibility to make a single investment in learning the software interfaces,

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and to leverage this investment across a variety of merchant silicon designs. Because the software provider's focus is on the development and licensing of software, the OEM can be confident that the supplier is focused on the support and continued development of the software technology.

Depending on the specific merchant silicon vendor, and the form in which the software is provided, the advantages provided by this approach can range from meaningful to very significant, especially if the OEM is developing a family of products that would use a number of merchant silicon devices from multiple vendors.

In addition, the software available from some vendors may feature an open architecture that allows developers to easily integrate custom or third-party algorithms, protocols, and control applications into the system. OEMs are thus still able to preserve their investment in their own intellectual property and differentiate themselves in the highly competitive VoIP equipment market. This approach combines all the time-to-market benefits of a turnkey solution with the flexibility of software components.

Time to market for the development of VoIP products has been shortened through the use of merchant silicon. Additional gains can be achieved through the use of merchant software. This merchant software is delivered in several ways, such as software components and software platforms, and can be obtained by an OEM in various manners, from direct distribution with the merchant silicon, as part of a "turnkey" system offering, or from third-party software vendors. Each approach features characteristics that must be considered in relation to the specific requirements of a given product's development. Utilizing merchant software that provides the greatest flexibility in terms of portability and integration for a particular application, with regard to both the software functional components and the silicon, can reward OEMs with a strategic advantage that enables decreased time-to-market, lower overall product risk and lowered product development costs. IT

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Reducing Time-to-Market For Triple-Play Telecom Products

Predictions that VoIP technology would penetrate the mass market have been around for many years. The end of the "dotcom" boom in 2000–2001, however, brought with it a slowdown in the telecommunications market in general, and the VoIP market in particular. Nowadays, we see that VoIP is finally moving from the early adopters market to the mass market. Additionally, we see that video is becoming the next "killer application," as evidenced by its wide adoption by the 3G market. This trend brings video into the home, office, and contact centers as well. Telecommunication equipment manufacturers can achieve reduced time-to-market for Triple-Play infrastructure products by using off-the-shelf media processing tools, such as media processing DSP farm boards and DSP chips. Additionally, many factors must be taken into consideration when choosing such development tools.

VoIP Is Not Only Voice

Looking at the requirements from a customer's perspective, simply porting the currently available PSTN (define - news - alert) services to VoIP (define - news - alert) is not justification enough for an organization to undertake the required investment in replacing their TDM (define - news - alert)systems. Users want to be able to use a single device as their mobile phone, wireless terminal in the office, and home phone. This device should provide features such as: real-time conversational voice and video, video streaming, video mail retrieval via the device or via e-mail, enhanced presence capabilities that will be integrated with location-based services, and provide information — not only about the availability of each person on the "buddy list" but also the services to which she has access — and messaging. Providing these services in a cost-effective and high-quality manner requires seamless roaming of the device between the different networks, and service availability across the networks. This dictates the following requirements:

1. Bridging between the following networks:
   a. Broadband wireline IP network, mainly using SIP but also using legacy H.323 equipment.
   b. Broadband wireless IP network (WiFi and WiMAX) using SIP.
   c. 3G real-time conversational voice and video, currently using 3G-324M and SIP in the future.
   d. Voice PSTN network.
   e. Video over PSTN using H.324.

2. Connectivity between devices in these different networks: Since each network has its own characteristics, the devices support different protocols and have different media characteristics. Even when both devices support SIP there are cases where media bridging/processing is required.

Off-the-Shelf Versus In-House

As part of the design and planning of new voice and video infrastructure systems — such as gateways, conferencing bridges, media servers, and video mail servers — the manufacturer needs to decide whether to use available off-the-shelf solutions or to develop an in-house solution. Depending on the approach

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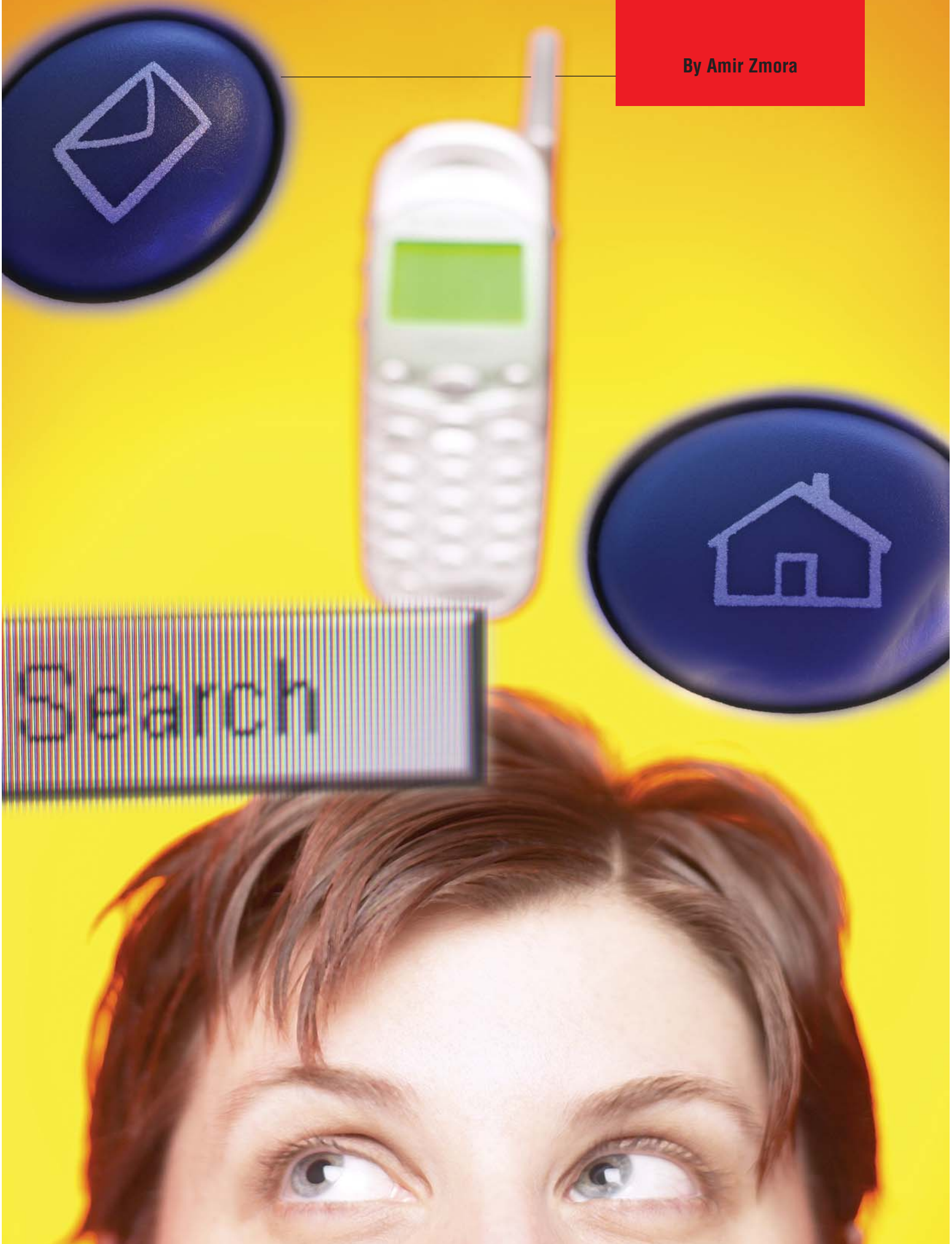
By Amir Zmora



taken, the company will need to invest in development of different components resulting in varied time-to-market levels:

In-house only

This approach requires more than 25 R&D years to develop the following required software components:

- A complete DSP framework.
- Voice codecs, including the required voice features: echo cancellation, signal detection and generation, events detection, voice activity detection, n-way conferencing — including dominant speaker detection — and many more telecommunication features. Additionally, this type of voice implementation would require years of field-hardening prior to becoming robust and bullet-proof.
- Video codecs, including video processing features such as: frame rate change, resolution change, video conferencing algorithms, and text overlay.
- Development of other media types, such as fax and modem, if required.

In addition to the software development, an optimized DSP (define - news - alert) farm board must be developed, a task which requires additional, significant R&D resources. This board would typically be a PTMC or AMC daughter card that rides on a cPCI or ATCA motherboard. The manufacturer would need to purchase an off-the-shelf motherboard and perform the required integration work, or develop this component from scratch.

DSP software/DSP fully-loaded with software

This solution includes the DSP framework as well as the media types that run on it. Choosing this level of integration will require the manufacturer to invest significant resources in both development of the DSP farm board, and integration or development of the motherboard.

A complete off-the-shelf DSP farm solution

This solution comes pre-integrated with a motherboard and includes all the components described above. Choosing this approach will result in greatly reduced time-to-market. It will enable the manufacturer to invest all development resources to focus on and enhance its application. This approach maximizes the added value of the manufacturer's application, providing competitive differentiation and the reason for customers to buy the end product.

Regardless of the actual development approach chosen from the four described above, the following decisions must also be made:

- Choosing the DSP farm board architecture.
- Choosing the media processing software architecture.
- Choosing the DSP.

Choosing The DSP Farm Board Architecture

A DSP farm board needs to handle high throughput of media while simultaneously receiving controls and sending monitors. Some applications require a simultaneous interface to TDM and IP, while others require an IP interface only (i.e. Session Border Controller).

Traditionally, the TDM front-end connects through an H.100 interface, and communication with the host processor is via Host Port Interface (HPI). For this architecture the host processor needs to handle both DSP traffic aggregation, providing it interface to the IP network, and the control application (that in many cases includes the signaling stacks). These two tasks are different both in nature and requirements. Since the host processor usually runs operating systems such as Windows, Linux, and Embedded Linux, it is not optimized for the aggregation task. Running these two tasks on the host processor causes media and control to compete for resources, resulting in system quality issues (since delay is increased). Additionally, the butterfly effect may occur, wherein one DSP prevents access to the bus due to implementation issues or DSP failure, in turn causing a complete board fault. In order to create a balanced DSP farm board it is necessary to separate media and control functions. This can be achieved only if the DSP has a direct interface to the IP network, which will allow media to be sent over UDP/IP using RTP. This type of archi-

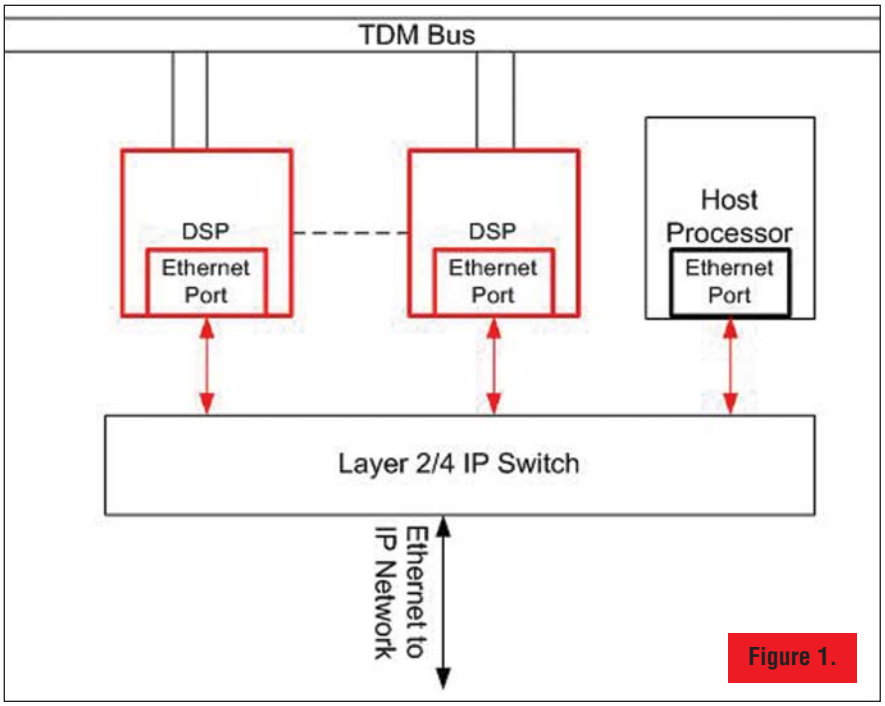


Figure 1.

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tecture enables aggregation using on-board layer 2 and 4 switches (Figure 1).

Effective Usage Of DSP External Memory

Adding media types such as video and enhancing the system with new features requires external memory on the DSP. Additionally, external memory allows storage of data — such as prompts and buffering of media for streaming/recording applications — avoiding intensive host-to-DSP data transfer bottlenecks.

Having external memory in a DSP-based media processing device does not necessarily mean that it will be used in the most effective manner. In order to optimize external memory, the system architect must ensure that:

- External memory size and width comply with current application needs and leave enough room for future expansion.
- Access to external memory data is performed through a predictive caching mechanism. Accessing the external memory using a caching mechanism can reduce the memory access duration by up to five times.
- A mechanism for off-line data transfer from the host to the DSP's external memory is established. This mechanism will simplify the host-to-DSP interface, and enable the host to view the DSP memory as an expansion to its own memory.
- Access to external memory should be mainly through DMA operations that work in the background, transferring blocks of data from external to internal memory and vice versa.

Choosing The Right Media Processing Software Architecture

Many telecommunication equipment manufacturers are taking note of their customers' interests and making their way into the video arena by enhancing their voice solutions to support video. Most currently-available voice and video media processing solutions do not run these two media types on the same DSP. Some use different DSP types for each media and some use host processing for one of the media types. Additionally, transport protocols such as RTP for IP and H.223 for 3G-324M do not always run on the DSP. These types of solutions are usually expensive and their quality is questionable due to:

a. synchronization issues between voice, video, and the transport protocol (RTP or H.223)
b. delay issues

If a media processing development tool based on the architecture described above is chosen, there is no flexibility to add new features and media types. Consequently, these additions will require "special" (read: resource/time-consuming) work on the part of the manufacturer. Overcoming these issues requires running all media types (voice, video, and data) and the transport protocols (RTP/H.223) on the same DSP. This approach will also allow run-time flexibility for the ratio between voice and video channels running on the DSP. The DSP software should include an "Open Framework" that is actually a pseudo operating system that can handle missions such as scheduling of DSP tasks, memory access, and "sockets." The framework should be open, with "hooks" to allow the manufacturer to plug the proprietary algorithm into the DSP, thereby enabling flexibility for addition of new features independently of the DSP software and board vendor.

Choosing The DSP

After reviewing the above architecture considerations, the requirements of the DSP can be summarized as follows:

- Provide external memory interface in order to have sufficient room to support new media processing tasks.
- Support IP interfaces directly from the DSP to enable socket-like interfaces with the network for every task.
- Possess adequate processor performance for execution of complicated tasks, such as multi-channel Video processing.
- Feature a wide range of vendors that provide software components optimized specifically for this line of DSPs.

The manufacturer needs to decide whether to use available off-the-shelf solutions or to develop an in-house solution.

To date, the only line of DSPs that complies with all the above criteria is the C64xx DSP generation by Texas Instruments. More specifically, TI's C6412 DSP can support 64Mbytes of external memory, it has a fast Ethernet interface, it can perform multiple video stream compression/decompression, and it enjoys an impressive array of third-party companies that develop all kinds of new protocols/stacks. Additionally, this DSP is capable of simultaneously running all media types, such as voice and video if the right framework is used.

In conclusion, as media processing becomes more complicated and feature-rich, and since time-to-market is more crucial than ever in the current competitive market, choosing an off-the-shelf solution that takes into consideration all the requirements described in this article, and that includes a comprehensive open DSP framework that runs all media types (voice, video, and fax/modem) simultaneously, will allow telecom manufacturers to focus their resources on their added value — their application. This will result in best time-to-market and highest value to the customers. IT

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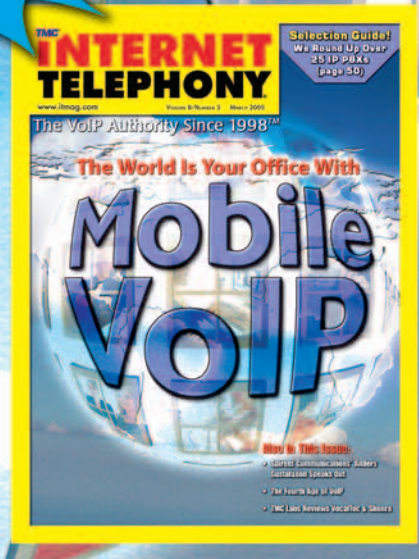

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Defining IMS-based Converged Services For "*Prosumers*"

Today, the telecommunications landscape is shifting as a result of service providers' desire for new, revenue-generating services that can distinguish them from their competitors, technological advances that are enabling the delivery of a wide range of new services, and growing end-user demand for these services. The shift offers carriers an opportunity to address end-users' interest in services that complement their lifestyle, allowing them to communicate how, when and with whom they choose — with the features they demand and have come to expect — regardless of the device they are using.

Service providers are seeking ways to increase market share, revenue, and subscriber loyalty, and they are looking to the burgeoning market for blended lifestyle applications to help them meet these objectives.

End-user interest in blended services has grown as an increasing number of employees work from home, from remote office locations, or from the road. As enterprise mobility increases, the delineation between subscribers as business *pro*fessionals and as cons*umers* has blurred. These individuals — sometimes referred to as "prosumers" — have a growing expectation for a communications experience that combines voice, video, data, and multimedia applications seamlessly across a range of devices.

A service provider that can meet these expectations, both in terms of supporting a range of access methods and offering a wide variety of high-value, end-user services can have strong appeal, especially when these features are combined with a trusted brand name associated with a positive user experience, a solid selection of attractive and easy-to-use devices (both hardware and software-based), and an experience that is consistent whether the subscriber is at home or roaming outside of their home service area.

What Are "Prosumer" Services?

Most professionals today have multiple sets of communications services — one at the office, another at home, and perhaps more if they regularly work in more than one location. The maintenance of these disparate service silos can lower productivity, and impede access to needed services and capabilities. As the lines blur between prosumers' professional and personal expectations, the lines between their professional and personal services will need to blur as well. Blended lifestyle services for prosumers can help overcome this challenge.

For example, a user may want to receive business calls at home when they are telecommuting, and so might want separate ring tones to identify business calls from personal calls. They may also want to treat these calls separately such as forwarding all business calls to voice

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By Sandip Mukerjee, PhD.

mail at certain times of the day. They may want to limit access to their instant messaging presence information to coworkers during the workday, and then reverse the scenario in the evening, sharing their availability information only with friends and family. They may be interested in seeing the latest sports scores, and even receiving a streaming video clip of the big play of the day in the evening, but would prefer not to receive the same information during a business meeting.

IMS: Meeting The Prosumer Demand

To meet the needs of this growing prosumer segment, service providers need to deploy an infrastructure solution that can enable them to better understand their customers' needs and preferences and blend individual services into new, personalized offerings that meet the unique needs of these subscribers.

The standards-compliant IP Multimedia Subsystem (IMS) architecture is an excellent fit for an operator that is looking to cost-effectively create and offer lifestyle services. IMS provides an ideal means of delivering voice, data, video, and other multimedia content. IMS also enables the interoperability of these services across different access technologies such as 802.11/WiFi hotspots, 3G mobile networks, or cable or DSL (define - news - alert) broadband connections, on a variety of devices such as mobile phones, wireless-enabled laptops and PDAs and desktop PCs or SIP (session initiation protocol) phones while still providing backward compatibility with existing circuit switched voice and data networks.

As importantly, IMS lays the groundwork for operators to deliver services that can be blended together to create even more powerful services that interact with each other by sharing common information such as subscriber profiles, presence and location data, and buddy lists, allowing existing services such as instant messaging to be combined with emerging capabilities to support newer offerings such as multiparty video conferencing and shared Web browsing. Through the blending of service features, operators can create intelligent "lifestyle" services, which generate greater end-user demand and yield higher average revenue per user (ARPU) than traditional services.

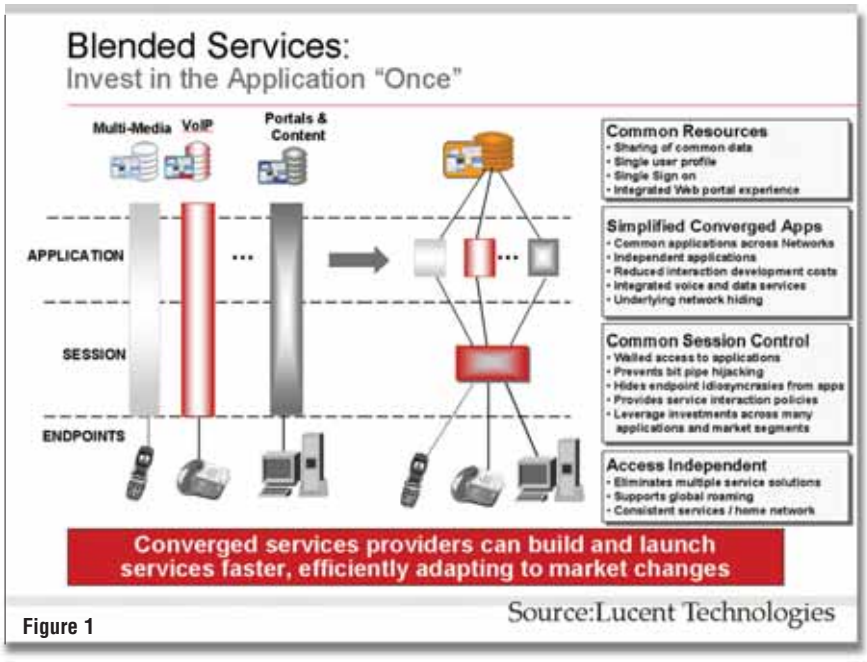

Figure 1

Beyond The IMS Standard

Standardized IMS platforms alone, however, are not sufficient to support this blending of services. To support the blending of applications, the IMS must remove the walls between the service delivery silos that exist today, and provide end users with an improved user interface that allows them to move between applications seamlessly, maintaining a common look and feel for services regardless of the access method used. The benefits to operators of this blending are obvious. Using instant messaging, push-to-talk, location-based services and content applications as examples, an IMS-based network — with the appropriate service layer enhancements — can enable these individual applications to be more easily blended into new services (Figure 1).

By providing a single, unified service delivery platform, an IMS architecture designed from the ground up to support this blending will enable operators to more easily and rapidly deploy new services because less time is required for service integration and provisioning. This produces a variety of benefits for service providers including reduced time to market (as much as six months per service) and increased user friendliness.

True Blended Services

But what does blending really mean? Is there a common definition of a "blended lifestyle" service? Certainly definitions will differ from equipment vendor to equipment vendor, and from operator to operator, but there are some characteristics that will help define true blended services from those offerings that are simply cobbled together through some customized, patchwork solution. Some of the characteristics of a blended service are:

- Common directories and addressing across applications;
- Presence, availability, location and policy sharing across applications;
- Spawning sessions to compliment existing sessions;

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- Single identity and common billing;
- Network-hosted data; and
- Personalization and customization of devices and users.

These features will provide for a blended service environment that will significantly enhance and simplify the communications experience for end users, making it easier for them to use and enjoy new multimedia and content services. The key to success is not just delivering new applications and services, but how they are delivered, and accessed by subscribers that will determine success or failure.

End User Willingness To Pay

Primary market research shows significant pent-up-demand for these blended lifestyle services, along with a high willingness to pay, and an overarching desire for a seamless experience across applications, and across devices.

Moreover, these blended lifestyle services can actually expand the "telecom wallet," the amount of money consumers and business users spend on communications services. The research and modeling indicates that users are willing to expand their subscriptions and overall spending on enhanced services, a very attractive feature for service providers seeing more and more price pressure on their existing offerings

Personalization Through Blending

Blended services also offer great benefits in terms of customization and personalization. Blending allows operators to develop services to address specific markets, and targeted, for instance, toward individuals interested in services that provide comfort, convenience and/or entertainment. A service aimed at the "convenience" market, for example, could provide users with a single contact list that spans all of their services so they no longer need to have one contact list for e-mail, another for messaging, another for voice services, and so on.

Location-Based Services (LBS) are another example of an application that can cut across many markets including comfort, convenience and entertainment. Successful commercial LBS offerings will use location information as an enabler to provide data and an array of potential services to a subscriber. Security services — such as E-911 — that utilize location and presence data to provide security features for subscribers are another popular "convenience" service category for consumers and enterprise customers alike. While privacy issues remain a concern for many customer segments, schemes that enable customers to restrict access to location data can make location services an attractive proposition.

Enterprises will value the improved productivity resulting from the ability to immediately locate personnel in the vicinity and quickly communicate with them to resolve issues (e.g., automatically sending critical event messages to field service technicians that are nearest to an event site). With the ability to immediately locate technicians or other personnel on the road — enterprises can expedite service requests, reduce downtime and increase customer satisfaction.

Consumers will value the more efficient use of time resulting from being able to easily find people, events, and points of interest that they care about. And in today's uncertain world families will value the greater peace-of-mind that comes from knowing where any one of their family members might be during their daily routine, and will appreciate being able to keep track of each other on outings such as family vacations. Teens will enjoy staying connected with buddies at school, at the mall or during other activities.

The Benefit Of Blending To Service Providers

Ultimately, the real value of the blended lifestyle services business model accrues to operators. An IMS platform designed to support blended services will help operators introduce a range of new services that simply don't exist today, and can be extremely attractive to consumers and business professionals. Moreover, these new services can be customized to the needs of particular end-user segments, and brought to market more quickly and at lower cost than is currently possible.

New services can be customized and brought to market more quickly and at lower cost than is currently possible.

This not only will enable operators to tap new market opportunities, but it will give them the flexibility to adjust quickly to changing market needs, helping them stay competitive. And for those operators that move quickly to pursue this opportunity, the first-mover status could be invaluable. These new services can help operators establish greater customer loyalty, an important asset in today's competitive market. Also, the additional revenue from these new offerings can be reinvested in further advances to help these operators establish a market leading position that will be difficult to overcome.

Finally, the characteristics that define the prosumer segment won't long remain limited to that segment. Like other early adopters segments, the characteristics that define prosumers may soon define the general public, and the sooner operators are able to meet this emerging demand, the better position they'll be in to take advantage as it becomes a mass market phenomenon. IT

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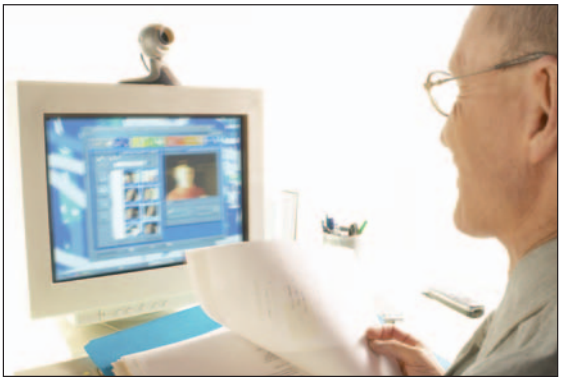
- Webinars are interactive, the moderators ask and answer questions, and fully engage with the attendee.



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For More Information Contact Dave Rodriguez: 203-852-6800 Ext. 146 or drodriguez@tmcnet.com

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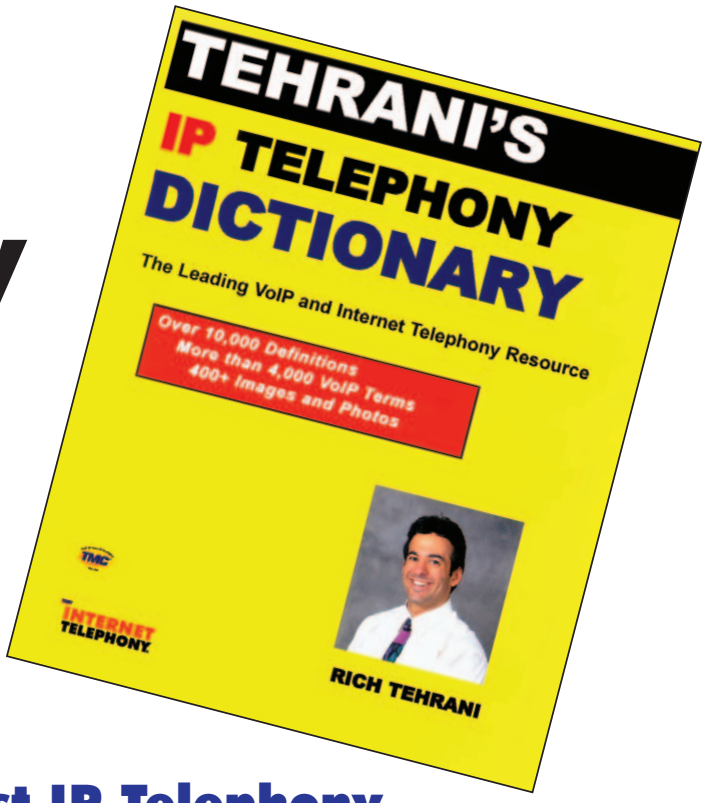

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CEO Spotlight

Leigh Belden
President and CEO
Verilink Corp.

In the CEO Spotlight section in *Internet Telephony*® magazine, we recognize the outstanding work performed by exemplary companies. Each month we bring you the opinions of the heads of companies leading the Internet telephony industry now and helping to shape the future of the industry. This month, we spoke with Leigh Belden, President and Chief Executive Officer at Verilink Corp.

GG: What is Verilink's mission?

LB: Verilink's (quote - news - alert) mission is to become the partner of choice for next-generation broadband access solutions. In this leadership role, our company is focused on solving the issues of "last mile" associated with the bandwidth bottleneck and enabling the delivery of ubiquitous high-speed broadband communications. We develop products that enable service providers to profitably deliver broadband services today, while offering them a strategic path to migrate their networks to support tomorrow's technologies and next-generation services. These products include Integrated Access Devices (IADs), Optical Transport Systems, Wireless Access Routers, CSU/DSUs (define - news - alert), DACs, and Inverse Multiplexers. The services supported by our broadband product line include TDM (define - news - alert), Frame Relay, VoATM/VoDSL (define - news - alert), Ethernet over SONET/SDH (define - news - alert), and VoIP (define - news - alert). Our products support standards-based protocols, technologies, and management capabilities needed for deployment in today's access networks while being at the forefront of technology needed for tomorrow's networks.

GG: What is your vision for Verilink and how is the company positioned in the next-generation telecom market?

LB: Founded in 1982, Verilink was the pioneer of CSU/DSU and other technologies associated with T1 access. With over 20 years of experience in a fast-moving industry, we have learned how to continually evolve our technology and products to meet emerging requirements. From a new generation market standpoint, Verilink will continue to focus on some of the highest growth segments of the broadband access markets including Voice over IP, Ethernet Access, and Wireless. Supported by a turnkey professional services organization, our company will continue to provide solutions to our carrier customers designed to improve their ability to serve end customers with new and differentiated services while enhancing their business model and profitability.

We have a wide range of products and technologies that are enabling the future of broadband services. Today we are leading the VoIP access market with our 8000 Series IAD, supporting both SIP and MGCP. We maintain broad interoperability partnerships with all leading companies in the space — softswitch and feature application servers, media servers, gateways, session border controllers, etc. Going forward, we will apply this same leadership philosophy to develop solutions that support future technologies, including multimedia offerings such as Triple Play.

From a geographic standpoint, Verilink is addressing the worldwide market through our presence in the U.S., Asia, Europe, and Latin America. Our strategic partnerships with leading telecommunications equipment manufacturers like Alcatel, Lucent, Nortel, and others who specify and deploy Verilink products as part of a total network solution, give us a broad, global reach.

GG: What is it that sets Verilink apart from your competition?

LB: Several things. First, our 23 years of experience in the business provides us with an operational edge. We are an established company with a strong global channel base and consistent track record in delivering innovative products to both large and small service providers and enterprises around the globe. Over the years we have gained an in-depth understanding of the challenges and operational requirements of our customers.

Second: product breadth and depth. We have a broad portfolio of access solutions. Since there is no such thing as a "one-product-fits-all" solution, Verilink offers a range of products to address a range of technology and application requirements.

Third: a seamless migration path to new services. Our products are unique in that they work with present day networks and provide a path to deliver next-generation services, typically through remotely configurable software settings.

And finally: our professional services offering. We have a professional services group that partners with carriers to assess their present mode of operation, and make process improvements that drive profitability. Additionally, we help them introduce new services, from network planning to technology evaluation, to deployment and service turn-up.

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GG: Now that it appears that growth and opportunity are the trends in the VoIP industry, what possible hurdles do you see that might upset this momentum?

Regulation remains one of the wildcards in the future of IP telephony.

LB: Personally, I don't believe the momentum will be upset, but I do think there could be many hurdles ahead. Regulation remains one of the wildcards in the future of IP telephony, but I believe governments will try to address regulation in a way that favors adoption of competitive services and fosters further innovation.

Consolidation is a hurdle the industry will likely face, based on the disruption that is typically created as a result. As carriers and service providers position themselves strategically to have a stake in all lines of business — with business and residential offerings, wired and wireless, voice, data and video — consolidation, and therefore disruption, will be inevitable for the foreseeable future. This will present some challenges for the equipment and vendor community, companies like Verilink, who innovate on behalf of these service providers. For the consumer, the challenge will be in evaluating and rationalizing new service offerings and service plans that best meet their needs. In the end, however, I believe it will all benefit the consumer with a rich set of services and better overall value.

GG: What are some of the technology areas where Verilink is increasingly focusing, and why are these areas important to the future of your company?

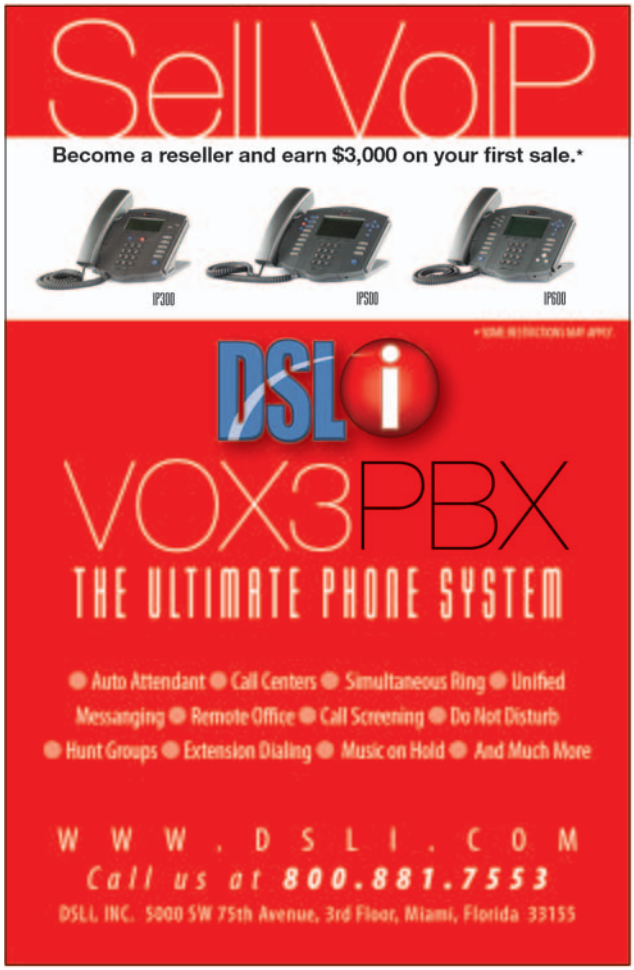
LB: VoIP is clearly an important technology area for Verilink, and we have invested heavily over the past several years to put ourselves in the leadership position we are today. In other packet-voice areas, VoATM and VoDSL are also important technologies given the broad penetration and continuing growth of DSL deployments on a worldwide basis. Ethernet over 'X' access is another area of focus for Verilink, given the ability to now extend Ethernet from the LAN to WAN and its attractive, low price-per-port. Wireless is another area that is strategic to Verilink, as mobility becomes an increasingly important requirement. And finally, video technology, as the industry evolves to Triple Play. From a technology perspective, Verilink plans to stay at the forefront of all of these important and emerging areas.

GG: Describe your view of the future of the IP telephony industry.

LB: I believe the future IP telephony business will be radically different from today's telecommunications business as we know it. There are many facets of the business that will inevitably change, driven by technology advancements, industry consolidation, convergence of wireless and wired communications, and an explosion of new services. At the carrier and service provider level, with increased competition for subscribers and market share, the service provider market will shakeout through a natural consolidation.

IP being a data transport standard, will open the door to new entrants from the likes of software companies and hosted service providers. This is an area where I think there will be a lot of change in the industry. This will introduce the possibility for location-based services, unified messaging with e-mail and voice mail, IMS, find-me/follow-me services, and video conferencing via the Web, areas that will be visible to the consumer. The potential for new services and improvements in communications is enormous.

And on the equipment side, we've all witnessed the convergence of the cell phone and the computer in a new generation of smart phones. This convergence, I predict, will continue and will blur the lines between fixed and mobile communications in the future. Our goal at Verilink is to play a leading role in this exciting future. IT



CEO Spotlight

Hans Henrik Lund
President and CEO
GN Netcom

In the CEO Spotlight section in *Internet Telephony*® magazine, we recognize the outstanding work performed by exemplary companies. Each month we bring you the opinions of the heads of companies leading the Internet telephony industry now and helping to shape the future of the industry. This month, we spoke with Hans Henrik Lund, President and CEO of GN Netcom.

GG: What is GN Netcom's mission?

HHL: GN Netcom (news - alert) delivers headset solutions to help our customers improve their mobility and productivity at work, and the quality of interactions with their own customers.

GG: What is your vision for GN Netcom and how is the company positioned in the next-generation telecom market?

HHL: GN Netcom has a history of innovation — from the first multipurpose amplifier in 1989 to the first Bluetooth-certified headset in 2000 and the first digital amplifier in 2004. We will continue this commitment to innovation to meet the needs of next-generation telecommunications. With the significant investments being made to implement VoIP (define - news - alert) , I believe the choice of headset matters for office workers and contact center employees. It's the "last three feet" of your entire next-generation telecommunications investment.

Personally, I expect that in the next few years, GN Netcom will build on our heritage of sound quality, durability, and innovation. I want to help companies around the world be more successful, and have happier customers and employees! And we've been around since 1869, so we're ready to ride the next wave!

GG: What is it that sets GN Netcom apart from your competition?

HHL: Three key attributes set us above our competition: innovation, entrepreneurial spirit, and global capabilities. First, we invest significantly in R&D and we work closely with our customers to use innovation to exceed their expectations. Second, we are very responsive. We started as a small company and we have retained the agility of our modest beginnings. Finally, our products are sold and supported in over 100 countries and offices and development centers in 23 countries. This global reach allows us to seamlessly and readily meet the needs of global customers. No other company in our industry can match us on innovation, entrepreneurial spirit, and global capabilities.

Of course, all this doesn't mean anything — expect that we deliver for our customers! One great example is the GN 8120 USB-to-headset adapter. We developed this groundbreaking product after working with a global financial services company that was trying to understand how to successfully launch a VoIP solution for over 10,000 office and contact center employees. They were struggling with how to help users adopt softphones — especially with problems like screen savers, e911, and an unfamiliar interface. The GN 8120 USB allows users to access the most common call control functions at the touch of button (such as with softphones from Avaya, Cisco, and others), and delivers the sound quality and durability that enterprises need in their VoIP solutions. It's allowed our customer to speed the implementation of their VoIP rollout, and make their employees more productive — and happy!

GG: Now that it appears that growth and opportunity are the trends in the VoIP industry, what possible hurdles do you see that might upset this momentum?

HHL: While cost savings is being advertised as one of the major selling features of VoIP, many of our customers are telling us that in the short-term, this may not be the case. Often the implementation costs may result in short-term telephony expenditures comparable with their legacy systems — albeit with a much broader range of capabilities and features.

We have to reinforce that VoIP is about more than just cost savings. It's about building a telecom infrastructure that allows companies to achieve their business goals more efficiently and effectively. It's about the innovation that can happen when old communication paradigms are broken.

A key part of breaking the paradigm

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We have to reinforce that VoIP is about more than just cost savings.

is to understand the VoIP "end-user" experience. The typical end-user can have a hard time using VoIP. I tell people that this is a 150-year change! Since the invention of the telephone, we have been comfortable with picking up a handset and typing a few numeric keys. With VoIP the applications are more sophisticated — but also more complicated. As an industry, we have to make sure our solutions make VoIP easier to use for everyone. Otherwise we will not realize the true "upside" of VoIP.

GG: What are some of the technology areas where GN Netcom is increasingly focusing, and why are these areas important to the future of your company?

HHL: As we continue to develop groundbreaking products, GN Netcom is focusing particularly on wireless and VoIP technologies. Headset use with mobile phones is getting individuals in enterprises thinking about using a headset in their office. By utilizing Bluetooth and other wireless technologies we can create cutting-edge headset systems that deliver the freedom, productivity, and "cool factor" that these customers demand. Soon, a headset will become another one of the indispensable tools — such as laptops and PDAs — that office workers use every day.

In addition, VoIP has introduced the concept of softphones to office workers. Softphones require the use of a headset system in order to enjoy private, clear communications. However, the majority of USB or soundcard headset solutions on the market today are not intended for commercial or office use. GN Netcom already has a complete line of professional-grade softphone solutions. We understand VoIP and what it takes to make it successful in the enterprise and contact center. IT

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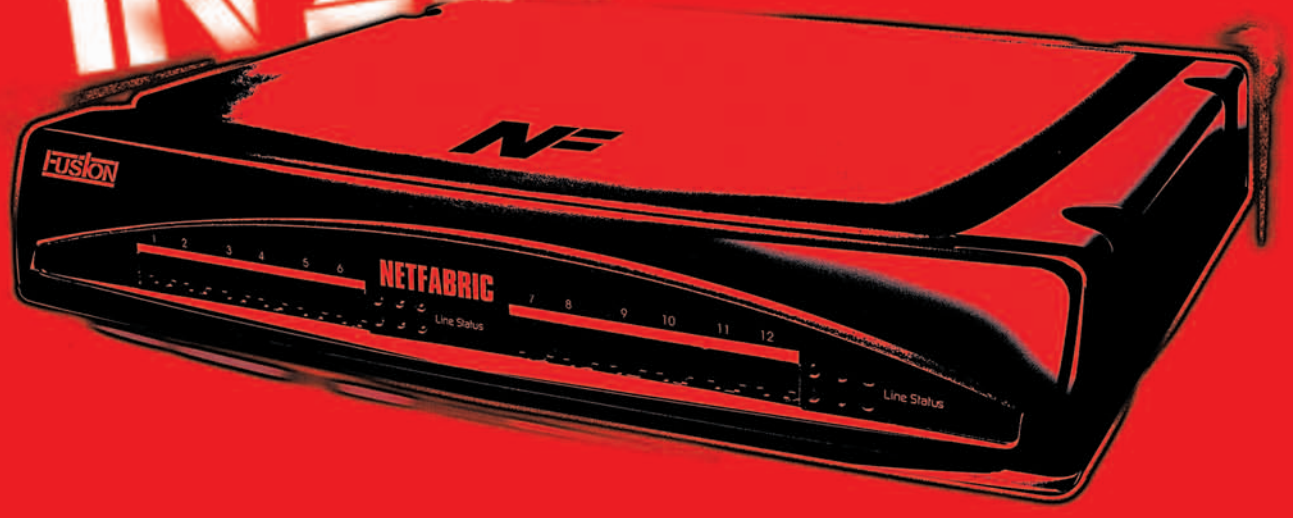

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