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INTERNET TELEPHONY®

VOLUME 10/NUMBER 7 JULY 2007

The IP Communications Authority Since 1998™

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By Richard "Zippy" Grigonis

Introducing the "Applications Session Controller"

In case you haven't noticed, the types of network elements used in IP Communications have proliferated in recent years. New network functions inevitably lead to new technologies and a new crop of new acronyms and initialisms. The first and most noticeable of these was the SBC (Session Border Controller), that jack-of-all-trades device that sits between the calling and called parties in a VoIP call, processing signaling and/or media streams involved in setting up, conducting, and tearing down these calls or "sessions". (Back in 2003, Jeff Pulver briefly tried popularizing the term "voice router" which had been applied to SBCs, but that didn't seem to catch on.)

Then came IMS (IP Multimedia Subsystem) and all sorts of new network elements appeared - though some of these "new" devices had the same basic functionality as existing network elements, and simply had new names. For example, the HSS (Home Subscriber Server) or UPSF (User Profile Server Function), the main user database and authentication center used in IMS, is similar to a wireless network's HLR (Home Location Register) and AUC (Authentication Center). And the IMS network's P-CSCF (Proxy-Call Session Control Function) is a SIP proxy server that's essentially a Session Border Controller.

Now, however, AppTrigger (http://www.apptrigger.com), a Richardson, Texas-based company, has announced the development of a new class of network element: the Applications Session Controller (ASC).

Patrick FitzGerald, Vice President of Marketing at AppTrigger, (news - alert) says: "The Applications Session Controller resides between the applications service node and the core of the network, where it provides interworking from network-to-network and enables an applications package to traverse the multitude of networks to ensure that the service subscriber has access to the same applications features on the wireless side as he or she would on the wireline side."

"We're arguing from a network perspective that, fundamentally, a new piece of equipment is needed by a service provider," says FitzGerald. "The ASC, situated between the applications and network core, provides ongoing network connectivity for all of the different applications that the provider offers on its networks. The ASC scales extremely well, and we're able to deal with a variety of APIs so that we can interwork with the majority of applications currently deployed by service providers."

FitzGerald drills down: "We feel strongly that this new category of network element is needed because, first, the network is always evolving and service providers are always optimizing their current network to take advantage of new technologies and new bandwidths. And, in turn, every time that they do that, the constant evolution of leveraging new technology impacts applications that are currently deployed on their networks, or it impacts the current application deployment model. We want to help the service provider by isolating the applications and removing them from the constant evolution of the network."

"This also ties into IMS," says FitzGerald. "I'd argue that our technology serves as a very good transition, if you will, in taking old traditional IN [Intelligent Network] applications and bridging them into the upcoming IMS network."

All-in-all, it looks as if the ASC will be a welcome addition to both networks and Scrabble games the world over. IT

Richard Grigonis is Executive Editor of TMC's IP Communications Group.

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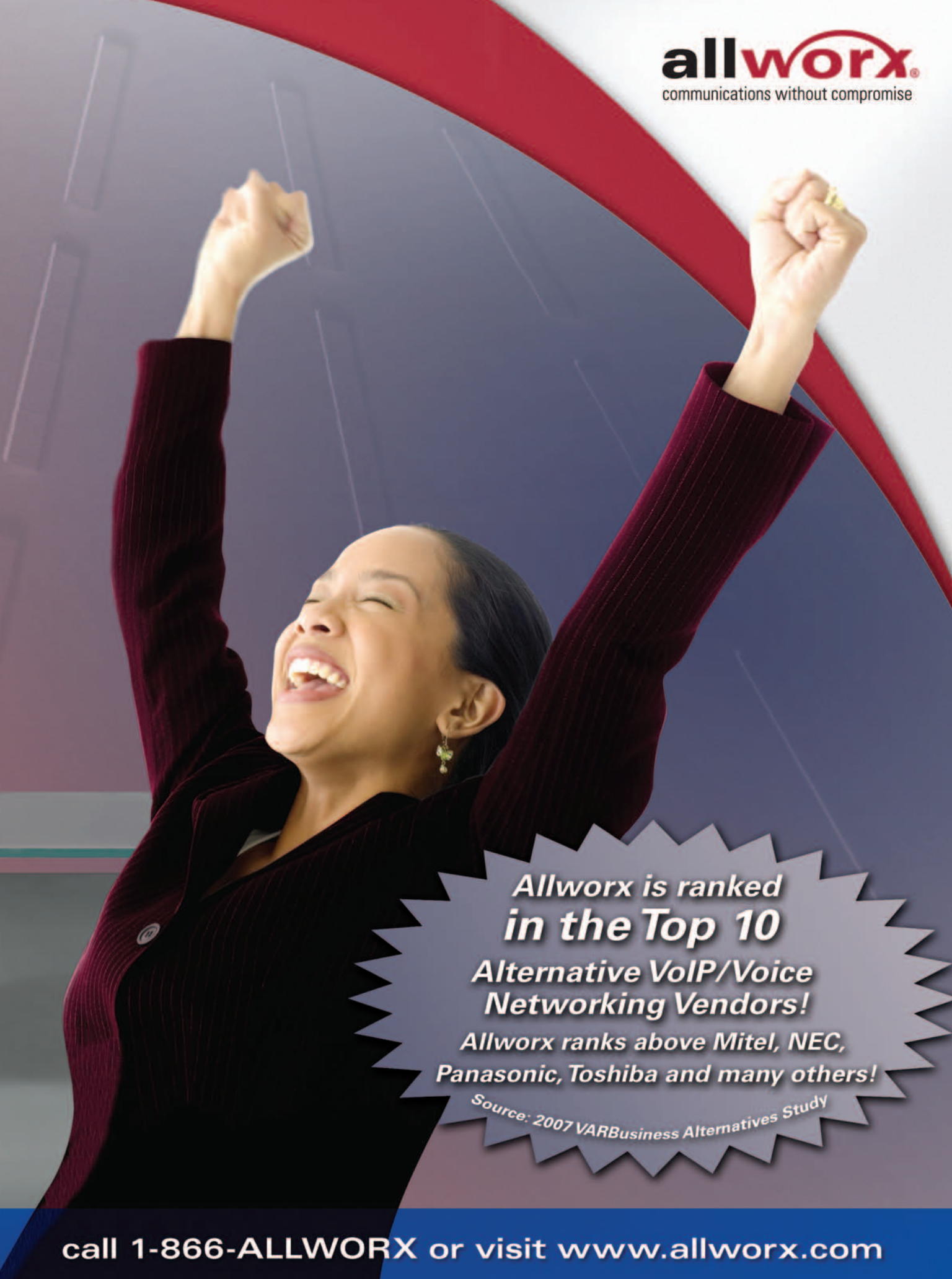
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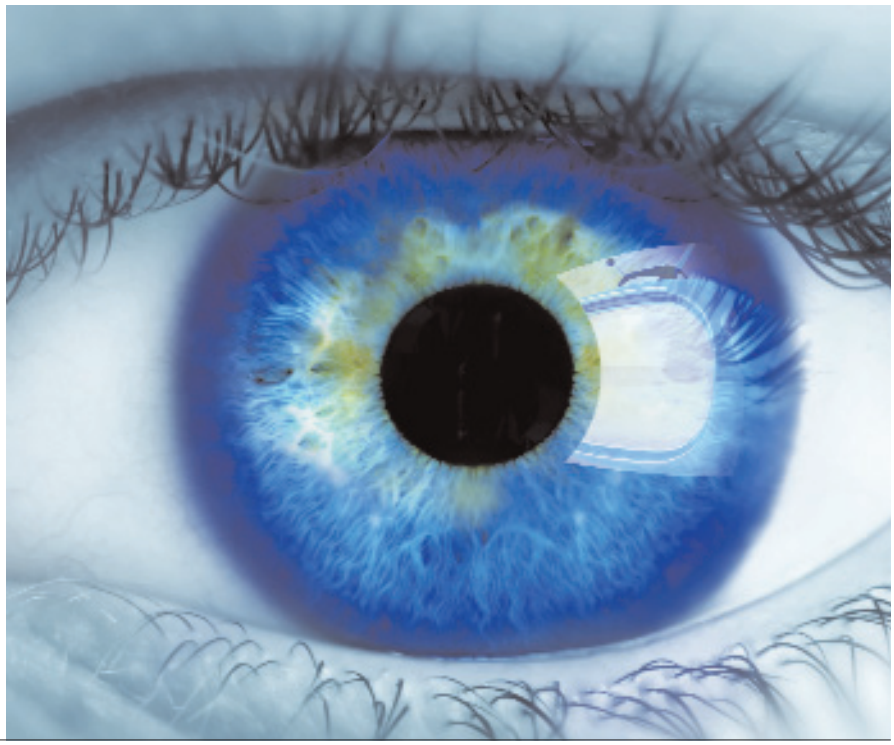

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What's On TMCNET.com Right Now

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 more than 16 million page views per month, translating into more than 1,000,000 visitors, TMCnet.com is where you need to be if you want to know what's happening in the world of VoIP.

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

Improving Communications Through Voice Presence
Telephone tag - noun: telephoning back and forth by parties trying to reach each other without success. According to Sage Research, nearly three-fourths of business calls are sent to voice mail, and the average employee wastes the equivalent of two days each month playing telephone tag.
http://www.tmcnet.com/815.1

Mobile Advertising: The Hidden Breakthrough
While magazines and cable TV have dual revenue streams - consumer subscription and advertising - the wireless industry still relies on monthly bills for its revenue. True, that bill is growing, as ringtones and other downloads are added, but that's not good enough. If wireless is to truly benefit from the publishing model it has to graduate to generating advertising dollars.
http://www.tmcnet.com/816.1

Triple Play: MSOs Can Grab Revenue by Converting More 'Tire Kickers'
The party's over. MSOs no longer monopolize the voice/video/data triple play space Telcos have come on strong the last couple of years, developing competitive triple and even quadruple play offerings. As a result, MSOs are feeling the heat. Instead of signing up for unique video and data services, consumers are now calling MSOs just to kick tires.
http://www.tmcnet.com/817.1

Mobile Network Operators: Off Line In The Online Race?
Mobile operators are missing the boat when it comes to the potentially huge market opportunity of assisting enterprises to reach mobile customers and employees. While the likes of Google, Motorola, and Salesforce are winning hearts and minds in this arena, Mobile Network Operators are being sidelined and condemned to simply carrying bits and bytes.
http://www.tmcnet.com/818.1

Pampering Your Best Customers in a Multi-Channel World
When it comes to contact center operations and the detailed metrics that are tracked, sometimes it's possible to lose sight of the forest through the trees. Metrics aside, the goal of any customer service organization is simple: to make sure each and every interaction generates as much goodwill and revenue as possible.
http://www.tmcnet.com/819.1

TMC's Whitepapers of the Month
Visit TMCnet's Whitepaper Library (http://www.tmcnet.com/tmc/whitepapers), which provides a selection of in-depth information on relevant topics affecting the IP Communications industry. The library offers white papers, case studies, and other documents that are free to registered users.

Work is Where You Are, Not Where You Work
Odds are if your business is on the move so are you and your employees. Tracking down essential staff at key moments is integral to your business. Finding them is another matter. Employees can be between offices or stores, with a customer,working from home or on the way to grab lunch. You're no different. How to stay in touch?
http://www.tmcnet.com/820.1

Grow Revenue and Reduce Time to Market with Dialogic Building Blocks
Wireless service providers worldwide are continuously trying to stay competitive and increase their revenue per subscriber by bringing profitable and reliable value-added services to market quickly and inexpensively. Developing with flexible building blocks is ideal for this technical and economic challenge.
http://www.tmcnet.com/821.1

TMCnet's Channels and Global Online Communities provide the latest, most comprehensive news, analysis, and case studies for all your IP Communications needs.

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VoIP Gateways are an integral part of enterprise migration to IP communications. For the latest news, information, interviews, and commentary on how VoIP gateways can benefit your business, visit TMCnet's VoIP Gateways Channel daily. Sponsored by Cantata Technology.
http://www.tmcnet.com/channels/voip-gateways/

TMCnet's IP Presence Channel
Presence is a key component of unified communications platforms being developed and deployed today. It can make the process of "finding" someone a painless task, regardless of where they are or where you are. For the latest on presence-based communications, visit TMCnet's IP Presence Channel each day. Sponsored by Mitel.
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telx Enterprise Peering Facility (EPF)

Enterprise Peering is the ability for enterprise network managers to freely access and directly interconnect to any other network or applications they choose without having to traverse the public networks of the PSTN or the Internet. This environment is a physical one of private, enterprise owned and managed equipment in a facility comprised of multiple networks controlled by a neutral, non-carrier operator. This is the **telx Enterprise Peering Facility (EPF)** and it brings greater quality, security, choice and savings to corporate IT and MIS Directors. Countless orginizations including Financial, Insurance, Healthcare, Legal, Universities, Research Intitutions and more benefit from the telx EPF. To learn how you can benefit from the telx EPF contact us at: enterprisepeering@telx.com

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By Rich Tehrani

Zed-3 - Affordable VoIP

One of the most colorful characters in the communications space has to be Iain Milnes, the founder of Zarak and Zultys. Zarak sold to Spirent for hundreds of millions in stock just prior to the telecom meltdown and Zultys ended up being acquired after some financial troubles. Iain parted ways with Zultys a few months back and is already at it again.

Some people call him a legend in telecom and for sure he is multifaceted, having launched successful companies in testing and the phone systems business.

In less than six months after leaving Zultys, (news - alert) Iain has a new company called Zed-3 (http://www.zed-3.com) and he is the President and majority owner. I had a chance to catch up with Iain at TMC's Communications Developer Conference (http://www.communicationsdeveloper.com). As the name Zed-3 implies, this is his third company to start with the letter Z. The company will make phone systems and compete head-to-head with Zultys and the myriad other companies in the IP PBX space.

The differentiator will be the focus as Iain has relationships all over the world and he will be concentrating on markets like China, Vietnam and India. Zed-3 will be based in the U.S. but Iain seems to thrive on traveling around the world and he is likely on an airplane as you read this.

At Zultys, Iain had a goal of building a $500 million dollar company. At Zed-3, Iain has revised his goal downward to $100 million; this is in part because of the cost of the company's products - they'll be priced at about one-third of what Zultys charged.

Iain believes that Zultys has ignored much of the channel. Zultys itself, however, currently informs me that they have strong relationships with the channel. The reality is probably that both companies are correct to some degree, as it is a big world out there.

Iain [Milnes] has just launched a new IP PBX company, getting it up to speed in the span of a few months.

At Zarak and Zultys, Iain personally got involved in building worldwide sales channels and as a result he is well-entrenched in many countries and can get things done quickly. In fact, speed is something Iain seems to be a master at leveraging.

For example, Iain has just launched a new IP PBX company, getting it up to speed in the span of a few months. However, he didn't start from scratch; he went to a company that OEMs product for many larger telecom equipment providers and purchased it. He then decided to brand some of the products as Zed-3 and, in the cases where contracts do not allow re-branding, he is able to use the new technology his company has developed to make ever-new products.

The PBXs are all VoIP and SIP-based and there is a variant that scales to 30 and 150 users. Soon there will be a 500-user model. The model numbers are the SE30, SE150 and SE500, respectively. The low-end VoIP phone will have a user price of $60. There is a mid-range phone as well which has the ability to display graphics and color; expect it to arrive at the end of this year.

Some signs of Iain's experience are captured in stories wherein he tells you how in many countries it is illegal to use VoIP (define - news - alert) and subsequently you can't import products which have the word "VoIP" written on them. "IP telephony" apparently is not flagged and products with such labels get right in.

His company has already installed systems in Bangladesh and China and a new system is in the process of being rolled out in Dubai.

Thanks to having an established company behind him and relationships with the right people, Iain's Zed-3 has already garnered approvals in over 20 countries, which is an amazing feat. Iain tells a story of how his system was approved in a major country in a mere matter of days while a very large competitor had to wait over a year for the same approval.

When I look at Iain's business model I am reminded of Cisco and how the company takes promising new companies, buys them and then makes the real money through the distribution of the companies' products worldwide. Granted, the scale of the respective operations is quite different but the concept is the same. . . Leveraging the distribution channel. In addition to being a communications equipment provider, Zed-3 is a distribution channel arbitrage play.

As you might imagine, Iain thinks Zultys has the best technology around and others in the industry certainly credit the company with technology leadership. Iain thinks that offering 90% of the Zultys feature set at one-third the price is the right formula for success - frankly, it is tough to disagree with such logic. Moreover, Iain says the Zed-3 call center products will have 100% of the Zultys features.

The company is far from a one-trick pony, as it also OEMs phones which are resold on corporate jets. The irony here is that the same company is behind ultra-sophisticated and expensive

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retail equipment and now this same technology will be built into extremely cost-effective phone systems around the world.

In addition, Zed-3 has a SoftPhone client, the CU3, which works with a memory stick device. The twist here is that the audio is embedded in the memory stick so you can plug the headset right into the stick and start speaking right away. This is especially useful for computers having no built-in sound capability. The soft client also executes from the memory stick, which means that there is nothing to install.

Iain says the CU3 was designed for use in a hotel and as such the NAT traversal has been worked out. NAT refers to network address translation and refers to assigning computers and devices behind a corporate firewall with local IP addresses which are concealed behind a different, external, "public" IP address for security reasons. Generally, NAT wreaks havoc on equipment not designed to deal with it. Iain mentioned that at Zultys, NAT traversal is something they just never got right.

He said that his hotel client generously gives away the sticks to frequent travelers along with a certain amount of free long distance time. The only catch is that you have to be staying at one of the company's properties to use the card as it checks the IP address before allowing the call to take place.

This is a really interesting application and gets one to thinking about all the extensions of such a business model in the world of VoIP. Iain tells me he is in talks with ITSPs about this product, which makes a great deal of sense. The price of the stick is in the $35 range.

Finally, there is a reverse 911 product which Iain thinks has strong homeland security potential. I am aware of other PBX companies such as Iwatsu who have also seen a revenue increase from focusing on disaster preparedness solutions such as this.

In the end, Iain is probably one of the more dynamic people in our industry. He always "tells it like it is" and I respect him for doing so. He should be commended for having such a grand vision, not to mention the fact that he has already begun execution on his latest plan in less than six months. Certainly the telecom market has tremendous opportunities left to be exploited, and if Zed-3 can get a strong foothold in many developing parts of the world, Iain may find himself in the process of pulling off a true telecom entrepreneurial hat trick.

TMC Launches Green Technology World Expo

Hopefully you are already signed up for TMC's Internet Telephony Conference & Expo (ITEXPO.com) to be held September 10-12 in Los Angeles, CA. I stress it strongly, because occurring at that same time and place will be another event called Green Technology World, focusing on technologies that not only save companies money but they also save the environment. The particulars are being worked out as I write this, but be sure to check out http://www.greentechnologyworld.com for the final details and also to peruse our new Green Blog (http://blog.tmcnet.com/green-blog). IT

http://www.tmcnet.com/763.1

ClearOne (news - alert) VoIP Phones Now Compatible with Cisco, Nortel platforms

ClearOne has announced that its MAX IP and MAXAttach IP series of SIP-based VoIP conference phones are now interoperable with Cisco's SIP-based CallManager 5 IP telephony platform, as well as Nortel's MCS 5100 multimedia communication server. ClearOne recently released a major firmware upgrade for its MAX IP products, which enabled these SIP interoperability milestones.
http://www.clearone.com

http://www.tmcnet.com/764.1

8x8 Enhances Packet8 (news - alert) Virtual Office Hosted VoIP Service

8x8, Inc. has added several new features to its already popular Virtual Office service, including Microsoft Outlook integration, overhead paging, and toll free fax numbers. By integrating Virtual Office with Outlook, 8x8 allows its users to associate their Outlook contacts with their Virtual Office extensions, making it easy to place and receive calls via their Outlook email client.
http://www.packet8.net

http://www.tmcnet.com/765.1

BT (news - alert) Launches New Suite of Security Services BT's new security suite is part of BT Counterpane's Enterprise Compliance Framework offering and will proactively provide a range of compliance reports to enterprise customers based on those customers' discrete security and compliance requirements. The new services simplify the reporting process and offers monitoring capabilities, forensic-grade archiving and customizable report templates suitable for audits against major IT security standards, such as Sarbannes-Oxley and PCI.
http://www.bt.com

http://www.tmcnet.com/766.1

Toshiba (news - alert) Unveils New Small Business Media Application Server

Toshiba has unveiled a new cost effective Strata Media Application Server platform for SMEs. The new MicroMAS is a desktop-size platform that brings a multi-application solution to smaller enterprises. The platform is designed to complement Toshiba's Strata CIX100 and CIX40 VoIP systems, yet is compatible with all Strata CIX systems.
http://www.toshiba.com/taistsd

http://www.tmcnet.com/767.1

DialX Lets Small Businesses Reach Their Target Audience for Less

DialX, (news - alert) a provider of automated messaging solutions for business, recently opened an automated call center in Phoenix, Arizona to complement its existing center in Las Vegas, Nevada. According to the company, anyone can use this automated call center to deliver prerecorded messages that are auto-dialed to a targeted audience. DialX is also able to deliver direct marketing messages using its onsite "do not call filter."
http://www.dialx.net

http://www.tmcnet.com/768.1

snom's (news - alert) VoIP Phones Now Interoperable with Brekeke's IP PBX

Under a recent strategic partnership with Brekeke Software, snom's VoIP phones are now interoperable with the recently introduced Brekeke PBX v2.x. Brekeke believes businesses of all sizes now have an extremely viable option that meets all of these criteria through their relationship with snom.
http://www.snom.com

http://www.tmcnet.com/769.1

New Google (quote - news - alert) Program Offers Offline Capability With a mission to organize the world's information and make it universally accessible and increasingly useful, Google launched "Google Gears" - it is an open source technology designed to move Google's online software applications off the Internet.

Loss in network connectivity is a major issue for those who perform much of their work online. Indeed, for them, offline functionality is the need of the hour and Google has taken a giant leap in developing its latest technology.
http://www.google.com

http://www.tmcnet.com/770.1

IRISTEL (news - alert) Adds IP PBX Service to its Enterprise VoIP Solutions IRISTEL is adding an IP PBX service to its Enterprise VoIP Solutions. Enterprises can use IRISTEL's Hosted PBX to maintain business grade communication and maximize the potential of their existing IP infrastructure.
http://www.iristel.ca

http://www.tmcnet.com/771.1

IP Telephony and IP Presence Solutions Provider Mitel (news - alert) Expands Into Brazil

Mitel recently opened a new office in Rio de Janeiro to serve the Brazilian market. The company also appointed a general manager of Brazilian operations, Paulo Ricardo Pinto.

Frost & Sullivan analyst Ronald Gruia commented in Mitel's announcement that Brazil represents the largest enterprise market for annual station shipments (TDM and IP) in the Caribbean and Latin America (CALA) region.
http://www.mitel.com

http://www.tmcnet.com/772.1

SanDisk (news - alert) Unveils USB Flash Drives for Business SanDisk has introduced two USB flash drives for business. Cruzer Professional and Cruzer Enterprise from SanDisk deliver strong security and state-of-the-art speed to business users. The former targets individuals and small businesses who want to protect crucial data while also making it easy to share selected files. Cruzer Enterprise is ideal for medium and large organizations that require mandatory policy enforcement, central management, and regulatory compliance.
http://www.sandisk.com

http://www.tmcnet.com/773.1

ECI Telecom (news - alert) Launches Advanced Encryption Solution ECI Telecom has unveiled an advanced encryption solution, the Aurora-G, which protects all types of data transmission over high-speed Ethernet networks. ECI's encryption solution is part of the company's offering for the government and military telecommunications market, as well as for other markets and applications where high security and data protection is desired.
www.ecitele.com

http://www.tmcnet.com/774.1

Oakley Networks (news - alert) Launches Risk Management Solution Oakley Networks has launched the SureView 5.0, an insider risk management solution that combines enterprise monitoring with incident reconstruction and forensics tools for investigating serious breaches and policy violations.
http://www.oakleynetworks.com

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http://www.tmcnet.com/775.1

YouTube Coming to Apple TV Apple Computer (quote - news - alert) has announced it would bring the Internet's popular originally-created content from YouTube to Apple TV for user viewing on their sets. According to Apple, its Apple TV product will wirelessly stream videos directly from YouTube and play them on a user's widescreen TV. Using Apple TV's interface and simple Apple Remote, viewers can easily browse, find and watch free videos from YouTube in the comfort of their living room.

http://www.apple.com

http://www.tmcnet.com/776.1

CommPartners (news - alert) Teams with Sonus (news - alert) on IP Voice Net VoIP infrastructure solution provider Sonus Networks and network operator CommPartners have agreed to deploy a Sonus-based infrastructure in CommPartner's rapidly expanding IP voice network. By deploying Sonus' distributed, IMS-based architecture, CommPartners is able to achieve new levels of operating efficiency, scalability, and routing flexibility, producing robust IP wholesale and hosted services networks.

http://www.commpartners.us
http://www.sonusnet.com

http://www.tmcnet.com/777.1

New Global Telecom (news - alert) to Support MSTAR's Triple Play New Global Telecom, a provider of wholesale hosted and trunk-based VoIP solutions, has teamed with MSTAR, a world-class fiber-optic service provider, to support fiber-optic Triple Play services. NGT also announced the migration of MSTAR's (news - alert) more than 5,000 end users to NGT's Wholesale VoIP services platform. By entering this agreement, MSTAR will use NGTs wholesale VoIP telephony solutions to expand its high speed Internet, telephony, and video services to SMBs and consumer customers.

http://www.ngt.com
http://www.mstar.net

www.tmcnet.com/778.1

Veraz (news - alert) Optimizes Bandwidth for VoIP Providers Doing its part to enable service providers to introduce and deliver new services, Veraz Networks has upgraded its I-Gate 4000 PRO media gateway, now allowing wireless operators to better optimize bandwidth in their networks. With the advanced wireless codecs that are now part of the I-Gate 400 PRO, operators will be able to increase the capacity of their voice networks by as much as 12-fold without sacrificing sound quality.

http://www.veraznetworks.com

www.tmcnet.com/779.1

UTStarcom (news - alert) Integrates Video Encoding Platform Into IPTV Solution Digital video solutions company Optibase, Ltd. announced that its H.264 Media Gateway 5100 IPTV encoding platform is being integrated into UTStarcom's end-to-end RollingStream IPTV solution, for a deployment by IPTV solutions provider Aksh Optifibre Limited (news - alert) in India. Optibase's carrier-grade TV streaming platform is enabling Aksh to utilize H.264 encoding.

http://www.optibase.com
http://www.utstar.com

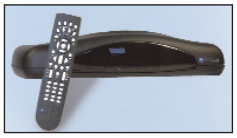
www.tmcnet.com/780.1

IP Unity Glenayre (news - alert) Connects Video Calls to Non-video Handsets IP Unity Glenayre, a provider of carrier-grade messaging and multimedia solutions, is launching its groundbreaking new technology - Video to Audio Connection. The application completes video calls from 3G-enabled handsets as voice calls on non-video phones. This ensures that video calls are completed, regardless of whether the recipient has video capability or not.

www.ipunity-glenayre.com

http://www.tmcnet.com/781.1

Eagle Broadband (news - alert) Teams with InfoValue (news - alert) on IPTV IPTV products and service provider Eagle Broadband announced a collaboration with InfoValue Computing to integrate Eagle's IP3000HD set-top box with InfoValue's video streaming solution. This collaboration will provide the industry with two InfoValue IPTV fully functional solutions, the InfoValue SuiteTV and InfoValue BizTV.



http://www.eaglebroadband.com
http://www.infovalue.com

http://www.tmcnet.com/782.1

Global Telecom Carriers Team on OIF Interoperability Demo Seven of the world's largest telecommunications companies - AT&T, China Telecom, Deutsche Telekom, France Telecom Group, KDDI, Telecom Italia, and Verizon - have joined together to host the Optical Internetworking Forum's Worldwide Interoperability Demonstration. The outcome of the tests and demonstrations is expected to benefit the entire industry.

http://www.oiforum.com

www.tmcnet.com/783.1

Covergence (news - alert) Supports IBM BladeCenter With a vision towards redefining communications and making it more efficient and affordable for everyone, Covergence, developer of secure, scalable technologies for controlling VoIP and other services at the access edge, has announced that its CXC appliance will now support IBM's (news - alert) BladeCenter.

http://www.covergence.com
http://www.ibm.com

http://www.tmcnet.com/784.1

Spirent Communications (news - alert) Expands Diversity Test Solution

Spirent Communications has expanded the capabilities of its Diversity benchmarking and drive test solution, which provides simultaneous, end-to-end testing for voice, data and video. Diversity now includes tests like CDMA2000 and EV-DO Rev.A networks as well as GSM/UMTS wireless networks in the 850/1900 MHz bands.

http://www.spirentcom.com

http://www.tmcnet.com/785.1

Redback Networks (news - alert) Unveils Latest Triple-Play Router

Redback Networks, an Ericsson company that makes video-centric routers for a majority of triple play networks, has announced SmartEdge 1200, a third generation multi-service edge router that enables broadband users to receive any aspect of standard definition TV, HDTV and HD VoD to Internet-enabled cell phones, PCs and TVs.

http://www.redback.com

http://www.tmcnet.com/789.1

OmniGlobe Networks (news - alert) Launches Satellite and WiMAX Management Solution OmniGlobe Networks has launched OmniCenter - a comprehensive, end-to-end network management software solution. The new solution combines satellite and WiMAX network management, operations monitoring, and bandwidth optimization into a single, cost-effective package.
http://www.omniglobenet.com

http://www.tmcnet.com/790.1

Palm (news - alert) Unveils Smartphone Companion Seeking to expand its presence in the smartphone market, Palm Inc. has introduced Foleo, its first smartphone companion product. The Foleo mobile companion has a large screen and full-size keyboard with which to view and edit email and office documents residing on a smartphone.

http://www.palm.com

http://www.tmcnet.com/791.1

Neutrino Helps Mobile Devices in Investigations Guidance Software **(news - alert)** has launched Neutrino, a comprehensive forensic acquisition solution for mobile devices that helps enforcement agencies in digital investigations. Together with EnCase software, the Neutrino solution, with built-in WaveShield technology, is designed to streamline complex digital investigations on various mobile devices. WaveShield technology also enables the user to obtain a forensically sound acquisition of cell phone data, even within close proximity to cell towers.

http://www.guidancesoftware.com

http://www.tmcnet.com/792.1

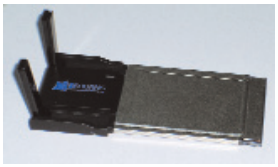
Comverse Mobile IM Client To Reside in Samsung Device Comverse **(news - alert)** announced that Samsung Electronics has selected Comverse Mobile Instant Messaging (Mobile IM) client software to be embedded in a new handset targeted for the North American market. Comverse's handset solutions offer a convenient user interface and expanded functionality that both draw from the company's extensive messaging expertise.

http://www.comverse.com
http://www.samsung.com

http://www.tmcnet.com/793.1

Agilent and Sequans Team on WiMAX Test Systems

Agilent Technologies **(news - alert)** announced its collaboration with Sequans Communications, provider of WiMAX silicon and software based on IEEE 802.16 d/e standards. The two companies will work together on pre-validating the Agilent Protocol Conformance Test (PCT) system and the speed-optimization of RF power-calibration and production-test systems, both for fixed and mobile WiMAX modules.



http://www.agilent.com
http://www.sequans.com

http://www.tmcnet.com/794.1

Firetide and Aptilo Networks (news - alert) **Partner** Thanks to their new technology partnership, Firetide's (news - alert) wireless mesh infrastructure will be combined with Aptilo's service management platform. "This partnership is strategic for Firetide as we expand into the global service provider market," said Bo Larsson, CEO, Firetide. "Aptilo's complete and secure service management platforms complement Firetide's end-to-end infrastructure and offer an excellent choice for service providers deploying wireless broadband."

http://www.firetide.com
http://www.aptilo.com

http://www.tmcnet.com/795.1

Sierra Wireless (news - alert) Launches Intelligent Modems Sierra Wireless' AirLink PinPoint X and Raven X have been certified and are commercially available for use on the Verizon Wireless Evolution-Data Optimized, Revision A (EV-DO Rev. A) network. These first two installments of the AirLink X Platform, have the capability to enhance system processing power and expand the memory within an enhanced and scalable architecture that is optimized for existing and future 3G wireless networks.

http://www.sierrawireless.com

http://www.tmcnet.com/796.1

Sennheiser (news - alert) Brings New Range to Wireless VoIP Sennheiser Communications has now introduced a wireless headset - the BW 900 - that not only can connect with multiple technologies, but has a range of 100 meters. Sennheiser's Adaptive Intelligence technology adds comfort and quality to convenience and functionality by filtering background noise for high quality voice communications.

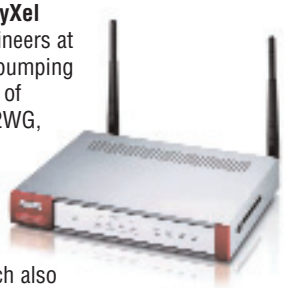
http://www.sennheisercommunications.com

http://www.tmcnet.com/797.1

XO Communications (news - alert) Launches Broadband Wireless Services in Las Vegas XO Communications, along with Nextlink, a subsidiary of XO Holdings, has launched a broadband wireless service in Las Vegas. Through this broadband service, XO Communications expects to provide high-speed network services at speeds ranging from 45 Mbps to 155 Mbps (OC-3) to support a wide range of communications services.
http://www.xo.com

http://www.tmcnet.com/798.1

Wireless Rules at ZyXel (news - alert) The engineers at ZyXel have been busy pumping out new products, one of which is the ZyWALL 2WG, a 3G and WiFi mobile broadband security appliance for remote offices.



The sleek box acts as a 4-port switch which also allows WiFi access and can fail over to a 3G (or even 2.5 G) wireless network if the Internet goes down. You can insert an EV-DO or HSPDA card yourself, once you have chosen a wireless provider.
http://www.zyxel.com

http://www.tmcnet.com/799.1

Window Film Ends Wireless Signal Stealing

The potential for hackers to steal wireless signals with simple eavesdropping devices is greater than ever as wireless devices make data access and exchange more convenient. To minimize those risks, CPFilms **(news - alert)** introduced LLumar Signal Defense Security Film, a high-tech clear window film that helps users secure and protect the confidentiality of their wireless and other "free-space" electronic communications. LLumar Signal Defense film reduces electronic signal leakage through windows, a building's point of least resistance, by serving as a transparent barrier that allows light to pass through, while minimizing transmission of electronic signals.
http://www.cpfilms.com

SIP NEWS

http://www.tmcnet.com/803.1

Switchvox Announces Interoperability with Cbeyond

Switchvox **(news - alert)** announced that its products are interoperable with Cbeyond's SIP Trunking service, BeyondVoice with SIPconnect. Integration with Cbeyond's managed services will enable Switchvox to expand its channel partner community, as well as provide further support and services to its already established resellers.
http://www.switchvox.com
http://www.cbeyond.net

http://www.tmcnet.com/804.1

Truphone Announces New Gateway for Bridging Calls to the PSTN

Mobile VoIP provider Truphone **(news - alert)** announced that it has successfully ported FreeSWITCH's open source telephony application code to TelcoBridges' **(news - alert)** hardware platform to fulfill its need for a media gateway that can bridge VoIP calls between the Internet and the PSTN. Truphone's SIP-based mobile VoIP service is delivered via WiFi . The development of a PSTN media gateway is key addition to its service because calls initiated on Truphone's IP network can now be bridged to the PSTN.

http://www.truphone.com
http://www.telcobridges.com

http://www.tmcnet.com/805.1

CDW to Offer Bandwidth.com's SIP Trunking VoIP

Bandwidth.com, **(news - alert)** a nationwide provider of complete business communications solutions, has announced that CDW Corporation, **(news - alert)** a provider of technology products and services for business, government and education, is now offering the company's SIP Trunking VoIP solution as part of its suite of telecommunications products and services.

http://www.cdw.com
http://www.bandwidth.com

IP CONTACT CENTER NEWS

http://www.tmcnet.com/806.1

Lekane and Genesys Partner to Make the Contact Center More Mobile

Genesys Telecommunications **(news - alert)** Laboratories and Lekane **(news - alert)** have announced that Lekane has leveraged the Genesys suite to create a small, lightweight Java-based agent desktop that can confirm the presence and availability of field service personnel, while also enabling a centralized contact center to easily transfer customer inquiries when appropriate.
http://www.genesyslab.com
http://www.lekane.com

http://www.tmcnet.com/807.1

Contact Centers to Gain Greater Choice and Control with Aspect Unified IP 6.5

Contact centers will soon have an advanced option to rely on for helping to drive customer service, collections and sales and telemarketing business process goals. Aspect Software **(news - alert)** has announced Aspect Unified IP 6.5, a SIP-based VoIP unified contact center solution delivering ACD, predictive dialing, voice portal capabilities, Internet contact, workflow management, multichannel recording, and quality management.
http://www.aspect.com

http://www.tmcnet.com/808.1

Amcat, Aculab Develop Contact Center of the Future

Amcatis **(news - alert)** is working with Aculab **(news - alert)** to develop and deliver a new enterprise IP contact center model. The new model will give users greater abilities to optimize customer traffic, enable the use of true anywhere/anytime agent and management resources, and increase per-contact revenue. According to both companies, they share a common outlook on how next-generation IP contact centers are developing.
http://www.amcat.com
http://www.aculab.com

DEVELOPER NEWS

http://www.tmcnet.com/810.1

Microsoft, LG Electronics to Cross License Patents

Microsoft **(quote - news - alert)** and LG Electronics **(news - alert)** have entered a patent cross-license agreement to further the development of the companies' current and future product lines. Under the agreement, LG will be able to use Microsoft patented innovations in its products, including Linux-based embedded devices. Microsoft will have access to LGE's patents and will license other patents developed by LGE that are now owned by business solutions provider MicroConnect Group.
http://www.microsoft.com
http://www.lge.com

http://www.tmcnet.com/811.1

New Dialogic DM/V-B Boards Extend Media Processing Power with PCI Express

Dialogic **(news - alert)** achieved an important milestone - its DM/V-B boards became available in PCI Express configurations. With software-selectable T1/E1 connectivity in a new single span and previously available dual and quad span densities, the Dialogic DM/V-B PCI Express boards provide a true universal port solution and a robust media feature set that includes voice processing, speech recognition, fax, and conferencing capabilities.
http://www.dialogic.com

CHANNEL NEWS

http://www.tmcnet.com/812.1

Novatel Wireless Extends Partnership with NexAira

Under a technology **(news - alert)** distribution agreement, NexAira will resell the Novatel Wireless **(news - alert)** broadband product line exclusively to its distributor, agent, and operator customers. The agreement builds on a strong partnership that has processed more than $4 million of business in the first quarter of 2007.

http://www.novatelwireless.com
http://www.nexaira.com

http://www.tmcnet.com/813.1

Tel-Net Systems (news - alert) to Resell Whaleback Systems Broadband VoIP Service

Tel-Net Systems, a leading provider of voice and data services to the entire New England area, has joined Whaleback Systems' Partner Program. The Whaleback Systems **(news - alert)** Partner Program is a channel sales program intended to boost the distribution of CrystalBlue Voice Service, Whaleback's unique end-to-end broadband business telephony service for Small and Medium Businesses (SMBs).

http://www.telnetsystems.com
http://www.whalebacksystems.com

Convergence For Better Guest Services

By Tony Rybczynski

The questions being asked by many an IT savvy traveler and guest are 'Do you have WiFi in the hotel?', 'Are your Business Center facilities available 24 hours a day?', 'Can your IP TV system plug-in my iPod?' As a tech savvy traveler yourself, this is a far cry from 'yesteryear' and the basic facilities hotels used to provide, right?!

The hospitality industry is becoming an increasingly challenging business environment, for luxury hotels, mid-scale, economy hotels and everything in between. With the growing use of on-line hotel booking portals, consumer and business travelers alike can select the lowest-cost option based on price and pre-established quality standards - regardless of consideration of brand. That said, exciting and delighting guests through superior personal experience can not only drive up demand and occupancy rates, but also create valued service opportunities.

Technology convergence and bundled technology services are key differentiators that enable the hospitality industry to further enhance the guest experience, improve operational effectiveness and lower overall IT total cost of ownership. While the latter two are extremely important for a profitable operation, leveraging IT convergence technology to further delight the guest is central to on-going top line growth. Marketed well, convergence and IT service offerings have intangible benefits as well: for example, product differentiation, creating a competitive edge, and brand awareness and loyalty all drive longer term top-line growth.

Excite & Delight the Guest

The 'credo' for hospitality CIOs is 'enhancing guest experience through technology where hotels are places of relaxation, entertainment and business productivity'. The aim is to establish a 'home away from home', whereby hotels provide similar technology 'modern conveniences' that guests have in their own homes or offices.

Future direction and major trends in the hospitality industry look to leveraging convergence technology to excite and delight the guest in the following areas:

Firstly, providing broadband connectivity anytime, anywhere across the property is a strategic imperative across the industry. Today, business travelers aren't willing to slow down because they are not in the office, while leisure guests expect to be able to share their experiences with loved ones. Already hotels have become a hot bed of hotspot deployment globally with over 36,000 locations according to JiWire. As wireless capabilities become more widely deployed across devices, business and leisure travelers will increasingly expect to be able to access information and resources wherever they are. Progressive entities such as Moevenpick Hotels & Resorts are moving to provide wireless connectivity across the entire property, including, for example, convention areas, golf courses, and spas.

Broadband connectivity also provides an infrastructure for hotel staff (e.g. event coordinators, maintenance and security personnel) to stay connected and thus be better able to respond to guest needs, emergency situations and day-to-day operational challenges. It is only common sense and good business that this be leveraged off the existing infrastructure and core technologies, for example, for WiFi phones for staff and guests, digital signage, and closed circuit TV solutions. Through process intuitive services such as 'one stop shop guest request tracking', a call received at a central service center can be forwarded by a service representative to a 'runner' (equipped with a WiFi device anywhere in the hotel complex), who can acknowledge and service the request within minutes. Before long, the networked devices will not just be limited to the hotel-based technology but also to the devices that the guests bring along with them - mobile phones, iPODs, PDAs, video cameras and more.

Secondly, leveraging IP Telephony to enable new phone-based services is an emerging technology that will be here to stay in the luxury hotel segment. With screen-based IP phones, there is now a more friendly approach to put hotel personnel and services and any web-based multimedia information at the fingertips of their guests. For example, special guest promotions could be offered (e.g. a discount to loyal guests on spa services during off-peak hours) and accepted via a touch-sensitive color screen of a phone. Payment could be made via USB-attached card swipe units. A further opportunity exists by linking IP phone applications with property management systems and the room environmental control system, including control of temperature, air circulation, lighting, and curtains. Delivering rich and easily accessible 'just in time' service to its guests will set a hotel apart from the competition, while tapping into new revenue opportunities. These primary in-room communications vehicles become 'virtual concierges' to enable enriched functionality like city maps and points of interest, weather facilities, internal and external advertising (as forms of direct and indirect revenue generating opportunities), checking restaurant offerings, menu ordering, SMS messaging capabilities and much more. These are complementary to IPTV for video-on-demand, music-on-demand and online games, just to name a few, providing a holistic approach to enhancing guest experience.

Thirdly, leveraging multimedia IP communications to enhance business meeting and convention services is in the proof-of-concept phase. One major shift to expect is that meetings planned for hotel properties will increasingly include those physically present, as well as others who will participate via multimedia communications - both in real-time and after the event. This is being enabled via "virtual" meeting technologies such as immersive video conferencing, leveraging high definition widescreen video and lower cost video editing and streaming. During the event, multimedia conferencing can be based on integrated delivery-to-video conferencing facilities at other properties. New revenue opportunities include post-meeting capabilities such as streamed video replay to desktops anywhere and audio and video podcasting of the event.

Conclusion

Technology convergence and the bundled technology services provide the hospitality industry with multiple levels of benefits: new opportunities for hotels to excite and delight guests, improve staff effectiveness and lower IT costs. Successful marketing of technology convergence services drive brand loyalty and product differentiation in an increasingly competitive global market. If you must travel, you'll be the ultimate beneficiary! IT

Tony Rybczynski is Director of Strategic Enterprise Technologies in Nortel, (quote- news - alert) and has over 35 years experience in the application of packet network technology. He writes a monthly 'Inside Networking' column in Internet Telephony magazine. Roger McFarlaine is VP Technology Middle East & Asia for Moevenpick Hotels & Resorts with over 26 years of IT experience at a local and international level with around 40 hotel/projects openings.

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Building Trust by Delivering Performance

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www.dialogic.com

IPTV's Limited Window of Opportunity

By Brough Turner

IPTV and Peer-to-Peer TV (P2PTV) are two new ways to deliver video. Both are in the news, both use IP, but there the similarity ends. IPTV provides video streaming over DSL, so telephone companies can compete with cable TV. P2PTV is mysterious, possibly illegal. It's an application and/or a service that runs over the public Internet, independent of any specific Internet access provider. Just as P2P file sharing is driving fundamental change in the music industry, P2P is about to disrupt conventional TV - broadcast, cable and IPTV.

In the US and Canada today, cable TV "triple play" services - TV, telephony and Internet access - are succeeding, to the detriment of the telcos' residential voice revenues. Since subscribers change residential services infrequently, losses tend to persist. So it's no wonder incumbent local exchange carriers (ILECs) are launching IPTV services using DSL over their existing copper plant and, in the case of Verizon, using new FiOS fiber-to-the-home (FTTH) infrastructure where it's deployed.

IPTV provides a centrally managed service platform that Telcos can rely on to deliver carrier grade video streaming. TV services typically require local franchises, but ILECs are lobbying experts, likely to obtain the needed franchises directly or via state legislated overrides. TV services also require content, but AT&T and Verizon have the capital and critical mass to negotiate content deals. So IPTV is a good bet for equipment providers, as ILECs invest in their struggle against Cable's triple play. But will it matter ten years from now?

Peer to Peer

Peer-to-peer (P2P) technology is best known for content sharing. P2P handles distributed databases, searching and file transfer using only Internet connectivity and the distributed storage and processing power of participants' computers. There is little or no central infrastructure. Recently, this technology has been extended from file sharing to live video streaming.

P2P TV first showed up in China under names like PPLive and PPStream. PPLive grew out of work done at HuaZhong University of Science and Technology in WuHan in 2004. They launched services as PPLive in January 2005. Now, western companies are jumping on the bandwagon. Joost has the highest profile as it was started by the founders of Skype, but Babelgum, RawFlow, Zattoo, and Neokast are also using P2P technology.

Disrupting Conventional TV

Which of these startups succeed is unclear, but three forces guarantee disruption will ensue. First, people want to watch content on their own schedule, not that of a broadcaster. The advent of TIVO and other personal video recorders has made this abundantly clear. Second, access to "the long tail" of all possible content, obscure or otherwise, significantly expands any content market as Internet forces have already demonstrated with books and music. Third, user-created content is a powerful force. YouTube just exposes the beginning of this effect. As mobile phones evolve to include video cameras, the volume of personal video content will soar.

These forces work against conventional broadcast TV, whether via cable or IPTV. When most content is not live, file transfer is better than broadcast. As the volume of interesting content soars, Internet scale search and delivery beats any local service. And when P2P technology can handle live streamed sporting events, the last remaining advantage of conventional broadcasting disappears. If anything, P2PTV will increase live sports coverage when individuals are able to broadcast local little league matches. But there's more.

IPTV vs. P2PTV

IPTV typically couples video streaming to local access in order to guarantee quality of service (QoS). With file transfer, QoS is irrelevant. And for one-way video streams, a few seconds of delay can buffer any variations in packet delivery. Either way, all that's required is high speed Internet access, from any provider.

P2P technology has an additional advantage over IPTV infrastructure - automatic local caching. Costs for video delivery include the cost of hosting the actual video and the cost of bandwidth. While local Internet access is typically sold flat rate, costs depend on volume in the Internet backbone and the "middle mile" (from the backbone to the local access network). Local caching has two advantages, it reduces backbone and middle mile bandwidth expense and it improves local response times. So IPTV systems typically incorporate local caching at some considerable expense. P2P systems accomplish similar local caching with no capital investment whatsoever.

Limited Window

Telco investments in IPTV are a logical response to cable telephony but, with TV disruption on the horizon, investing in IPTV looks a lot like starting a new record label in 1995. IT

Brough Turner is Senior VP of Technology, CTO and Co-Founder of NMS Communications. (news - alert) For more information, please visit the company online at http://www.nmscommunications.com.

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In Harmony With Innovation™

By Hunter Newby

Maturity and Change

The concept VoIP Peering and its major functional areas have been introduced and generally defined over the last several years. Within the last two years there have been several service providers some established, some start-up that have thrown their hat in the VoIP Peer-ring, but recently there haven't been any new entrants. There have been a few major announcements, X-Connects' Brazilian Federation for one, but no major breakthroughs in either the technology, or service model. Does this mean that VoIP Peering has matured?

The alternatives might be constant change in service types, features, rates and, or new providers being announced on a regular basis, so the current players getting settled in and a steady stream of customer announcements and new deployments coming from them is a good thing. The perception of maturity may be derived from the stability and predictability of the market at the moment. That is not to say that "everyone" understands what VoIP Peering means at this point, but when they are finally exposed to what it is it shouldn't be much different than it is today. Or will it be?

The cycle from concept and creation through execution is shorter than the time it takes most companies to just organize a meeting. This incredible power is going to impact all applications and the industries they support including Voice.

There are intelligent forces hard at work out in the developer community that are creating open, dynamic and highly scalable programs that support every application imaginable. Some of these sources are more adept than others and can create based on original ideas and execute on those ideas producing valuable services for the business and, or consumer markets in a very short period of time. The cycle from concept and creation through execution is shorter than the time it takes most companies to just organize a meeting. This incredible power is going to impact all applications and the industries they support including Voice.

This notion may be nothing new because we have seen hints of it for a while now, but the hints are beginning to materialize. There has been much discussion about what happens to the stand-alone service of voice once it is embedded in a video session. How does it continue to generate revenue as a separate service and/or business in that world? The growing online gaming communities have their own voice-enabled features that provide not only the circumvention of the traditional PSTN, but the entire process of a linear call. Along these same lines there is SecondLife which is a virtual reality world with Avatars that currently text to "speak", or communicate with each other, but a full duplex audio feature is probably not far off. Facebook, an online social networking site, just recently opened up their platform to the world so that new features can be developed and used dynamically for the benefit of everyone and they're not charging anything for it. Imagine on-net "click to talk" with a member base of 10 million and a very high growth rate. These are all peering communities and the voice piece is in now, or will be soon and it will be seen as inherent and not seen as unique, or special.

Beyond, or behind the community itself though are the people that are building the functionality. That is where the true innovation is coming from and the results are not limited to only online communities such as gaming, social networks, or virtual reality sites. Those are just the tip of the iceberg. The same thought process of building applications for open communications with no care, concern, or even knowledge of the past "telco" model that is being employed in these individual communities is being used for the backend intelligence of private Internets and search engines that generate revenue from ads to create a totally new world that none of us have ever seen before. So, where are the voice carriers in the future when everyone is part of an online community? How do they have to change the way they sell to businesses like H&R Block - that has opened up an office in SecondLife? Do the same old rules apply, or have they changed? And if those rules have changed, doesn't that change the very nature of VoIP Peering? IT

Hunter Newby is chief strategy officer for telx. (news - alert) For more information, please visit the company online at http://www.telx.com.

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CommuniGate SYSTEMS

Is Your Network Ready for Voice-over-IP?

By Michael J. Leo

For most organizations today, it's less a matter of if and when, but more a matter of how to embrace IP telephony communications. Since 2005, when the balance tipped and more IP telephony systems were shipped than traditional time-division multiplexed (TDM) phone systems, VoIP has become the technology of the present and the future. In thousands of installations worldwide, VoIP communications are daily enhancing collaboration, increasing productivity and lowering costs. But even networks that have been optimized to handle large and complex data workloads may not be ready for an IP telephony implementation. What characterizes a Voice Ready Network?

Ensuring Quality

To carry on business effectively, users must be able to conduct conversations as if they were in the same room with the person on the other end of the line. With the latest codecs, audio quality on IP phones now surpasses what was previously possible on analog or even non-IP digital phones. But to attain business-level clarity and immediacy, the network must deliver sufficient bandwidth to support the voice traffic and provide the quality of service prioritization that prevents latency, "jitter" and prolonged call setups.

Just as important, the network must be able to reliably deliver a dial tone across the entire organization, over both wired and wireless installations. Phone users have long been accustomed to virtually 100% uptime. Many businesses cannot tolerate interruptions in their telephony service, losing money by the second when calls fail to get through. So a Voice Ready Network must provide high-availability, with the capability to support additional survivability features such as resilient links, uninterruptible power or back-up systems if required.

Additionally, a high-quality Voice Ready Network needs to be amenable to the strategic vision and budgetary constraints of the organization. In a company planning to implement a call center, the network should support that capability in advance to ensure functionality and keep implementation costs in check. If a business unit expects to open another district office, the network should be architected to sustain employee productivity with telephony survivability features that can withstand even a WAN failure. Or if video-based training will eventually be part of the picture, the network installed today ought to be able to accommodate the bandwidth and low-latency demands that quality video signals will entail tomorrow.

Guaranteeing Security

The various threats to business data networks - ranging from Trojan horses and worms to distributed denial-of-service attacks and intellectual property theft - are well known to IT professionals. But voice traffic is just as susceptible to attacks as data traffic, with most incursions occurring from within the firewall. And wireless networks present additional points of vulnerability. To protect business-critical communications of all types, the network must be capable of defending itself at the infrastructure and application levels by identifying threats and removing them while maintaining network integrity. Network performance must also be protected against traffic congestion generated by peer-to-peer, instant messaging and spyware activity.

Promoting Simplicity

The Voice Ready Network not only needs to be simple to manage, it must be able to scale as the business grows. This requires an intrinsically simple architecture that distributes intelligence where it is needed with minimal hands-on manual configuration. Communications are becoming increasingly mobile every day, but mobility means more than untethered phones and ear buds. It also involves converging wireline and wireless technologies and delivering critical applications to employees at home, in remote locations or on the road. That is why the network needs to be mobile-ready as well as voice-ready.

Technologies such as those based on Session Initiation Protocol (SIP) will be particularly important in simplifying the process of extending full telephony privileges to users as they travel or roam the building. Then there is the matter of migration. Most managers prefer a migration strategy that is really more of a transition strategy. That is, they want to leave as little of their legacy network behind as possible when they move to a voice-capable infrastructure. This requires a thorough network assessment and implementation plan. Plus, it means installing voice-capable solutions with the flexibility to support a wide range of applications and a full complement of industry standards.

Summary

Drawing from a broad, standards-based portfolio of converged network solutions, a Voice Ready Network can:

- Guarantee enterprise-level reliability and availability.
- Protect network resources and users from internal and external attacks.
- Integrate with legacy solutions through a standards-based architecture.
- Support converged services-including conferencing and multimedia communications-with wire-speed performance.
- Deliver high-quality audio with prioritized traffic controls.
- Provide a practical power source with Power over Ethernet capabilities.
- Facilitate communications and business activities for mobile workers.
- Comprehensively monitor and manage main and branch networks.
- Easily scale to accommodate future growth. IT

Mike Leo is Director, Convergence Marketing, Convergence Business Unit, 3Com Corporation. (quote - news - alert) For more information, visit the company at http://www.3com.com.

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ALTIGEN COMMUNICATIONS

Who Needs Application Acceleration and Why?

By Raymond Nahorniak

The architecture of networks has evolved from a centralized model, where application resources reside in one location, to a distributed model, where users and IT resources are co-located at branch locations. The distributed model ensures acceptable performance, but the centralized model is more cost-effective. As a result, we're seeing a trend back to centralization of application resources.

Although centralization offers many advantages, it can create performance issues when serving applications to a geographically dispersed user community. Most applications are designed for use in LAN environments, which are not prone to latency/bandwidth issues. But, increasingly, user communities are spread nationally or globally over WAN environments. For example, it is not unheard of these days to have a call center in India using a CRM application residing on a server in the US. The primary resulting pain point is slow application performance.

Enter application acceleration as a solution to address the performance issue. Application acceleration tools are designed to provide LAN-like performance over the WAN.

How Application Acceleration Works

Application acceleration uses a combination of technologies, including:

- Application acceleration (advanced protocol optimization) - Mitigates latency and bandwidth through advanced protocol optimization, including read-ahead, message prediction, and caching.
- Throughput optimization - Improves behavior of transport protocols to make them more efficient in WAN environments.
- Bandwidth optimization - Minimizes the transmission of redundant data patterns through data redundancy elimination (DRE) and compression.

As an enhancement, vendors are also tailoring acceleration to specific applications such as SAP, Oracle, and Siebel. With tailored solutions, acceleration benefits may still be realized for other non-named applications, but the benefits may not be as significant as the targeted application.

Optimization methods include caching of "same" information at the local site, so only changes to specific information are communicated back to the data center. The objective is to store all static information locally. The need to access the data center server for information is kept to a minimum, and, when the server is accessed, a copy of the information is stored locally in anticipation of additional needs.

Business Benefits of Application Acceleration

Application acceleration delivers many business benefits. For example, when a CRM application quickly delivers customer records across the WAN, the improved performance is experienced by end-users and is passed directly onto the customers being assisted by those end users.

Also, we've all experienced delays when calling companies. Speed may become the differentiator that customers use to decide from whom to make their next purchase. If your company's customers are experiencing delays, your business may benefit from application acceleration.

Perhaps it's your transactions that could use a boost. The ability to handle more transactions per day increases daily revenue without having to increase headcount, and provides a real gain in productivity as a result of increased performance.

Each organization must develop its own benchmarks and baseline criteria to measure the improvements gained from implementing application acceleration.

Select a Solution Based on Your Unique Business Needs

Application acceleration is not a "one size fits all" solution. IT organizations need to complete their due diligence before implementing this technology. Companies must prioritize applications based on business needs and select the appropriate acceleration method that best meets those needs. If you get application acceleration right, some industry claims suggest that your bandwidth consumption by any given application may be streamlined by as much as 70%.

With a prudent approach to implementing application acceleration, including taking the time to define the solution that fits, it's likely that the benefits will keep adding up in more ways than you initially anticipate.

The Bottom Line

Organizations restructuring towards a centralized IT model should include application acceleration as a key component of that effort.

A final thought: Network technology and applications are constantly improving. If your performance benchmarks are a few years old, then the performance potential of your network and the applications running on it may be at levels that are a few years old as well. In other words, just because your network is performing as well as it always has doesn't necessarily mean that it's performing as well as it could — or should. IT

Ray Nahorniak, Director of Network Solutions for Forsythe Solutions Group, (news - alert) has more than 30 years of telecommunications experience. His broad experience, which includes operations management, operations control, project management, and managed services, has provided him with a thorough understanding of project lifecycle issues at every phase of execution.

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Dear Colleague,

After a decade of innovation, IP communications has come to an important crossroads. From this point forward, the solutions available have become more advanced and complicated than at any time before. Security, unified communications, hosted solutions, disaster preparedness, open source, SIP, WiFi telephony, IPTV, IMS and FMC are just some of the latest areas of the market you likely need to understand well.

Since 1999, INTERNET TELEPHONY Conference & EXPO has been the single event helping companies make purchasing decisions in the world of VoIP and IP communications. ITEXPO helps you understand what is important and what is not. It is not a geeky future-fest. We focus on the implementation issues you are faced with today while keeping an eye on tomorrow and the decade to come.

ITEXPO still stands alone. It has a unique blend of exhibitors not found anywhere else in the world. It has a conference guarantee* backing up the industry's best educational offering. Finally, it is a show designed by the editorial team behind the leading communications publications in the market - TMC's INTERNET TELEPHONY, IMS Magazine, Unified Communications, and Customer Interaction Solutions magazines. In addition, the TMCnet editorial team aids in ensuring ITEXPO is always focusing on the topics you need to know about.

In fact, if it isn't at ITEXPO, it isn't important in IP communications.

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As the IP communications landscape gets more sophisticated, it is imperative you come to industry conferences to experience everything there is to learn. In addition you are able to network with all the key players and your peers at once, ensuring your education is balanced. The worst thing you can do is make a decision without knowing all of your choices up front.

The ITEXPO team has spent day and night working to ensure — in fact we even promise — Internet Telephony Conference & EXPO is the Ultimate IP Communications Experience and we look forward to seeing you in person in Los Angeles. When you leave the show, you will be better equipped in your current job and will have an easier time making the correct decisions on what you need to purchase and how to get the job done correctly.

Sincerely,

Rich Tehrani, TMC President & ITEXPO Conference Chairman

P.S. Check out page 7 to see the amazing, 'Connected Car of the Future' that you could win on Tuesday, September 11th.

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Tracks for Enterprises, Government, SMBs:

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- Enterprise Solutions
- VoIP for SMB
- Essential Issues
- IMS Summit at ITEXPO
- FMC
- Call Center 2.0 at ITEXPO
- Open Source
- Wireless/Mobility
- SIP
- FierceMarkets' IPTV Evolution

Tracks for Developers:

- Unified Communications
- Essential Issues
- IMS Summit at ITEXPO
- FMC
- Call Center 2.0 at ITEXPO
- Open Source
- Wireless/Mobility
- SIP
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Your conference fee is guaranteed. See page 30 for details.

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- Telepresence
- Cable/Satellite IP Communications
- Peering
- Enterprise Network Management
- IP in the Contact Center
- IMS versus WiMAX
- SOA
- Convergent Billing
- Hosted VoIP Options
- Mobile VoIP & Video
- Broadband Wireless VoIP
- E-911 Update
- SIP Trunking
- Securing VoIP Networks
- Security in a Mobile World
- Open Source
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- Disaster Preparedness Workshop
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Nick Jensen
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Dialogic Corporation

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Susan A. Johnson
Senior Vice President,
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Who Should Attend?

Enterprise, Service Provider, SMB Corporate Management, CEOs, CTOs

Ultimately, the vendors you choose become as much your partner as your supplier. Whether you are deploying a solution or a carrier offering service, INTERNET TELEPHONY Conference & EXPO provides the perfect venue for forging these profitable relationships.

Resellers

You get a full day of free sessions teaching you how to make money selling VoIP service and equipment and the opportunity to meet with literally hundreds of companies who could become your next partner. Need we say more?

Enterprise, Service Provider, SMB Tech Management

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No other conference offers three full days of conferences teaching you how to take advantage of today's most powerful development tools. In between sessions, form partnerships and relationships as you meet with manufacturers and vendors.

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Each topic and presenter is hand-selected by the INTERNET TELEPHONY editorial team from hundreds of candidates. Only the most relevant sessions presented by seasoned speakers make it on to the program at INTERNET TELEPHONY Conference & EXPO.

3. Invaluable Networking Time

ITEXPO West 2007 is the perfect venue for you to meet and talk with other enterprises/government, service providers, developers and resellers to share ideas, exchange business cards, and discuss the virtues of one solution over another.

4. Hundreds of Exhibiting Companies

In between sessions, meet vendors and partners you need to successfully deploy or offer solutions. The agenda leaves ample time to stop by each booth to discuss how each exhibitor's offerings can help you.

5. FREE "Executive Showcases" on the Exhibit Floor

Visit this special area on the show floor and get more unbiased education about key topics.

6. Top-Level Keynotes

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7. Free Service Provider Shootout Special Panel Session

In addition to the non-commercial conference sessions, you can hear leading service providers share their vision of how IP communications can benefit you.

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- Presence-based Applications
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- Protocol Stack
- QoS Network Monitoring
- RAS/Modem Chips
- Routers
- Session Border Controllers
- SIP Software
- SIP Trunking
- SMB VoIP Solutions
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- Softswitches
- SOHO Solutions
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- Telepresence
- Testing Platforms
- Unified Communications
- UPS/Power Solutions
- Voice Boards
- VoIP Development Tools
- VoIP Gateways
- VoIP Monitoring
- VoIP Peering Solutions
- VoIP Security
- VoIP Silicon
- VoIP Testing Hardware
- VoIP-enabled Handheld Devices
- Web-based Customer Service
- WiFi Telephony
- WiMAX
- Wireless IP Communications

Exhibit Hall Hours:

Monday - September 10.....4:15 pm - 8:00 pm
Tuesday - September 11.....11:00 am - 6:00 pm

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Todd Landry
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Marisa S. Viveros
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Converged Comms., IBM
Global Technology Services

IBM

Day One: Monday – September 10, 2007

	Unified Communications	SIP	Service Provider Solutions	Wireless/ Mobility	FMC	Call Center 2.0 at ITEXPO	FierceMarkets IPTV Evolution
	Conference fee required	*Conference fee required*	*Conference fee required*	*Conference fee required*	*Conference fee required*	*Conference fee required*	*Conf. fee required*
8:30 - 9:30	Continental Breakfast - Paid Attendees Only						
9:00 - 9:45	Unified Communications Overview	The State of SIP	Guide to Understanding Today's Service Provider Market	Deploying & Troubleshooting WLANs	Fixed/Mobile Convergence Primer	Benefits of an IP Enabled Contact Center	Keynote Address
10:00 - 10:45	Things to Consider… Before You Deploy U.C.	SIP & SS7	Serve Your Customers Innovative Applications	Overcoming Broadband Wireless VoIP Challenges	Seamless Services Across Fixed & Mobile Networks	Transition Your Contact Center to IP	IPTV or Online Video: What's the Next Generation of TV?
11:00 - 11:45	Living with your U.C. Deployment	SIP in the Call Center	What About Hosted?	IMS Versus WiMAX	The Need for Convergent Billing	Develop an Effective IP Strategy	Panel Session: IPTV Bill of Rights
11:45 - 12:30	Conference Luncheon - Paid Attendees Only						
12:30 - 1:15	The Dawning of Telepresence	SIP Trunking From 10,000 Feet	Successfully Managing Next-Gen Networks	Designing Software For Mobile VoIP and Video	Service Provider Perspective On FMC	Uncover the Value of Speech Analytics	Panel Session: Monetizing Apps Beyond TV
1:30 - 2:15	Extending Security to the U.C. User	Developing Applications Using SIP	The State of VoIP Peering	Trends in Dual Mode	FMC: Driving the Transition to IMS	Help Yourself! A Look at Web Self Service	Panel Session: Security and QoS
2:30 - 3:15	Unified and Good to Go... A Look at Mobility	Why SIP Trunking Makes Sense For SMBs		Making Money With Mobile VoIP		Proactive Support: A New Paradigm In Managing Customer Relationships	Lessons learned from Tier 2 & Tier 3 IPTV Deployments
3:15 - 4:15	**FREE** Keynote Session Featuring Digium and Inter-Tel						
4:15 - 8:00	**FREE** Networking Reception in Exhibit Hall - Sponsored by Aculab						
Monday's Free Workshops: Ingate's SIP Trunking Workshop (pg. 28); Reseller Solutions Day (pg.26); Disaster Preparedness (pg. 26)							

	Unified Communications	Open Source	Service Provider Solutions	Wireless/ Mobility	IMS Summit at ITEXPO	Call Center 2.0 at ITEXPO
	Conference fee required	*Conference fee required*	*Conference fee required*	*Conference fee required*	*Conference fee required*	*Conference fee required*
7:00 - 8:00	Continental Breakfast - Paid Attendees Only					
8:00 - 8:45	Unified Communications in a Hosted Model	Primer: State of the Art in Open Source	Reaching The Consumer Market	Introduction to Wireless	Introduction to IMS	Video in the Call Center
8:45 - 9:45	**FREE Service Provider Shootout Panel Discussion** Featuring: Covad, Earthlink, 8x8, Inc., GlobalTouch Telecom, Worldgate					Call Recording: Benefits & Challenges
9:45 - 11:00	**FREE** Keynote Session Featuring Interactive Intelligence and AT&T					
11:00 - 6:00	Visit the Exhibit Hall					
12:30	Conference Luncheon - Paid Attendees Only					
1:30 - 2:15	Panel Discussion: Streamline and Integrate Your Business Processes	Selecting an Open Source VoIP Solution for the SMB	Introduction to Security	Wireless VoIP Vision for the Enterprise	The Business Case for IMS	Call Center Urban Myths
2:30 - 3:15		Mobile VoIP and Linux	Securing Hosted VoIP	Mobile Enterprise Applications	Best Practices in Service Creation	Beyond Boundaries: Exploring the Virtual Call Center
3:30 - 4:15	Don't Forget Fax	Securing Open Source Enterprise VoIP	Carrier Hotels	Mobile Rich Media Applications	A Day In The Life of IMS	Leveraging Hosted PBX Services in the Contact Center
4:30 - 5:15	Future Trends in Unified Communications	Open Source Development Challenges	Understanding Quality of Experience	Security in a Mobile World	IMS in the Enterprise	SaaS Panel: Opportunities & Challenges
6:00	**FREE** Networking Reception - Sponsored by Atacomm					
Tuesday's Free Workshops: Ingate's SIP Trunking Workshop (pg. 28); Vocalocity's Reselling Hosted VoIP Workshop (Pg. 27)						

Day Three: Wednesday – September 12, 2007

	Enterprise Solutions	VoIP for SMB	Essential Issues	IMS Summit at ITEXPO	Call Center 2.0 at ITEXPO	Voice Peering Fabric Workshop
	Conference fee required	*Conference fee required*	*Conference fee required*	*Conference fee required*	*Conference fee required*	*Free Workshop*
7:30	Continental Breakfast - Paid Attendees Only					
8:15 - 9:00	Prepare Your Network for Enterprise VoIP	VoIP Options for the SMB	Future Trends	Optimizing Components for IMS	IP Contact Center Shootout	Voice Peering 101
9:15 - 10:00	Make Your Transition to VoIP a Success!	IP Powered Applications for the SMB	Business Continuity and Disaster Planning	Is There A Killer App in IMS?		Inside the Voice Peering Fabric
10:15 - 11:00	Decisions Decisions… Hosted Versus Premises-based VoIP Deployment	Performance and TCO Advantages of Hosted IP-PBX Phone Services for SMBs	Enterprise Voice Mashups	IMS & Fixed/ Mobile Convergence	Do Advancements in Mobile CRM Make the Laptop Obsolete?	Peering and Transcoding with Asterisk on the VPF
11:00 - 12:00	**FREE** Keynote Session Featuring Dialogic and 8x8, Inc.					
12:00	Conference Luncheon - Paid Attendees Only					
12:45 - 1:30	Video Makes Its Way Into the Enterprise	Stay Connected to Your Customer	Regulatory Update	The Complementary Roles of IMS and UMA	Customer Analytics: Strategies for Success	vpf The Voice Peering Fabric
1:45 - 2:30	Enterprise Network Management	A Closer Look at Hosted VoIP	Regulation: E-911 Update	Migration to IMS	Open Source: Too Good to be True?	
2:45 - 3:30	Securing Enterprise VoIP	Selecting SMB VoIP: Cut Through The Confusion	VoIP Competitive Intelligence Survey	Testing IMS Networks	Welcome to the Era of Care 2.0	

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4. **YOU MUST VISIT THE EXHIBITS BOTH DAYS AND BE PRESENT AT DRAWING TO CLAIM YOUR PRIZE!**

UNIFIED COMMUNICATIONS

Monday, September 10th • 9:00 - 9:45 am

Unified Communications Overview

Unified Communications is the unification of presence, real-time communications (IM, telephony, video and application sharing) and near-real-time communications (e-mail, voicemail, short message services) into a single user experience. UC can provide businesses of all sizes with improved customer service, better return on investment, and a significant competitive advantage. But before IT managers purchase a new communications system, it is important that they explore the variety of ways that companies can use newer unified communications solutions. This session will address how to evaluate, select, implement and take full advantage of unified communications.

Monday, September 10th • 10:00 - 10:45 am

Things to Consider... Before You Deploy U.C.

The convenience of unified voice and data communications has long been a key convergence benefit, at least in theory. In practice, few users today find themselves operating in a truly unified environment. Solutions that have been cobbled together through acquisitions can be so complex and poorly integrated that they are simply too unwieldy to install, manage, use, and support. This session examines the requirements of practical unified communications, and how to verify that a particular solution meets them.

Monday, September 10th • 11:00 - 11:45 am

Living with your U.C. Deployment

Enterprises, service providers, and other organizations deploying Unified Communications (UC) solutions must deal with a number of operational issues not typically found in either data-only or traditional voice deployments. These risks fall into several areas including regulatory compliance, network architecture, network/performance management, standards and more. Come to this session to hear the expert speakers give their views and to learn some best practices for living with your UC deployment.

Green Technology Featured Session

Monday, September 10th • 12:30 - 1:15 pm

The Dawning of Telepresence

Today's collaboration tools significantly boost productivity, however most users would agree that they are still no substitute for being there "in person." Early videoconferencing solutions tried to emulate the face-to-face meeting experience, but it's difficult to find a business executive who doesn't have a videoconferencing horror story. A new technology, 'Telepresence,' promises to deliver the business-class collaboration capabilities required for today's fast-paced global economy. This session will examine this new technology and where it fits in an overall unified communications strategy.

Monday, September 10th • 1:30 - 2:15 pm

Extending Security to the U.C. User Community

As enterprises increasingly deploy UC, they find themselves under increasing pressure to extend networks beyond trusted domains, in order to enable soft clients, WiFi/dual-mode phones, remote IP phones, and Web phones that extend unified communications beyond the enterprise main office. With users less confined to headquarters, enterprise networks are becoming increasingly complex and susceptible to security breaches. This presentation will examine a number of common threats including reconnaissance, Denial of Service (DoS)/Distributed Denial of Service (DDoS), Stealth DoS, spoofing and VoIP spam, in order to explore the best practices methods to secure all VoIP, IM and other IP communication applications from threats that endanger the continued exchange of time-critical, business-sensitive information.

Monday, September 10th • 2:30 - 3:15 pm

Unified and Good to Go... A Look at Mobility

Mobile Unified Communications extends the functionality of enterprise IP PBXs and related services such as Presence, IM, Corporate Directory and Conferencing to a variety of smart phones and dual-mode devices over WiFi/Cellular networks. This "enterprise communications everywhere" approach gives users the ability to tailor, control and manage calls, messages, and information from any location at any time. For enterprises and IP professionals, mobile UC optimizes business communication, saves money and increases productivity.

Increasingly, mobility means access to a wide range of applications that go beyond communications, to deliver insight and awareness into a business' daily operations. Mobility means delivering the best business experience possible anytime, anywhere, across any network. This presentation will discuss the next-generation of mobility applications such as UC, asset tracking and logistics, supply chain management, sales force automation and point of sale/care, etc… and how they are helping organizations to improve productivity, increase revenue and provide an enhanced customer experience.

Tuesday, September 11th • 8:00 - 8:45 am

Unified Communications in a Hosted Model

As businesses are becoming more mobile and distributed, the need to become more available, more productive, and more customer-centric has also magnified. Legacy premise bound devices such as telephones, fax machines, and mail addresses have given way to cell phones, e-mail and mobile computing devices. People today want the ability to reach everyone, anywhere, anytime, from any network, device or application they choose. A unified communications offering can leverage hosted voice while running desktop software, affording businesses a certain level of flexibility. Offered in a hosted model, UC solutions can help SMBs get a premium bundle of hosted, productivity enhancing business communication software and services at a compelling price point, enabling a higher level of communication and efficiency. Come to this session to learn the benefits that these types of solutions can offer at both the service provider and business level.

UNIFIED COMMUNICATIONS

Tuesday, September 11th • 1:30 - 3:15 pm

Panel Discussion: Streamline and Integrate Your Business Processes

Companies are under pressure to improve the speed and efficiency of their business processes. Although there has been much focus on improving worker productivity and on making systems communicate efficiently with each other, there has been little focus on improving processes that require significant human interaction. With the combination of IP Telephony and Web services, organizations can now quickly and efficiently embed real-time interactive communication services into a range of internal business processes to enhance collaboration, quicken decision-making and improve productivity.

The panelists will explore the technical requirements needed for SOA, such as interoperability with other applications and processes, reliability, redundancy and security. The speakers will also provide real-world examples of how businesses can effectively use this dynamic to improve their business processes.

Tuesday, September 11th • 3:30 - 4:15 pm

Don't Forget Fax

Despite the repeated predictions of its demise, fax continues to be a core communications technology for a wide range of businesses. Legal, real estate and medical businesses still rely heavily on the easy to use transmission of documents that fax provides. The pure simplicity of inserting a page, entering a phone number and pressing START is hard to beat. At the same time, the concept of "paperless" offices that transmit, receive and store legal, technical or hand-written documents is on the rise. The introduction of unified communications has given the technology new life, but also led to a number of challenges in compatibility and reliability. By attending this session, you will learn to recognize the these difficult challenges and a number of solutions that will enable fax in unified communications applications.

Tuesday, September 11th • 4:30 - 5:15 pm

Future Trends in Unified Communications

In this session, the presenters will discuss current trends and focus on future directions for unified communications. UC has generated a lot of hype to date, but not a lot of customer installations so far. The speakers will separate the hype from the reality and show how unified communications is about to become not only the "killer app," but a true business necessity. Future directions to enhance collaboration, communications, and mobility for your workforce will be discussed, as well as how these solutions work together to reduce the latency in human communications.

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ENTERPRISE SOLUTIONS

Wednesday, September 12th • 8:15 - 9:00 am

Prepare Your Network for Enterprise VoIP

As enterprises increasingly consider VoIP it becomes apparent that among the considerations they need to be aware of is preparing their network to carry converged voice and data traffic. The speakers will educate the audience on why and how to do a network assessment. Subjects covered will include:

- Common misconceptions about voice quality
- Types of problems that lurk in the network
- The practical steps involved in performing a preliminary network assessment before VoIP is installed
- How to perform a post-installation assessment
- How to verify that VoIP is working effectively over the data network
- The value of the network assessment - and risks of not doing it; and more.

Wednesday, September 12th • 9:15 - 10:00 am

Make Your Transition to VoIP a Success!

Establishing a plan to transition voice communications to the data network is a complex process with many uncertainties. Without the right information, IT directors are forced to make poorly informed decisions that can directly affect the future of corporate communications. This session is all about making the transition to VoIP, from analyzing and preparing the network to providing a bridge between the VoIP equipment and legacy TDM equipment, to considering hybrid TDM/IP solutions on the way to a full VoIP deployment.

Wednesday, September 12th • 10:15 - 11:00 am

Decisions Decisions... Hosted Versus Premises-based VoIP Deployment

Every enterprise that has already chosen to deploy VoIP still has another decision to make. "Should we bring the solution in-house and manage it on premises, or should we opt for a hosted solution?" Both options offer certain benefits and certain drawbacks in terms of cost, management, flexibility, and so on. If you're already sold on the benefits of moving your phone system to IP, but you still have questions over how to deploy, then this session is right for you. Don't miss out!

Green Technology Featured Session

Wednesday, September 12th • 12:45 - 1:30 pm

Video Makes Its Way Into the Enterprise

Video communications for the enterprise is coming sooner than you think! With IP telephony becoming more widespread, video conferencing technology has progressed, and it is moving from boardroom systems to desktop systems and from isolated end-points to systems that are integrated with the corporate IP PBX. In addition, video has moved from ISDN (H.320) to video over IP (H.323, SIP) - ushering in a whole host of benefits. This session will examine what new capabilities are available and the value added with the integration of video with the enterprise IP PBX.

Wednesday, September 12th • 1:45 - 2:30 pm

Enterprise Network Management

The ongoing convergence of enterprise voice and data networks combined with growing overall traffic volume, increased numbers of discrete applications and a broadening array of systems and servers is presenting formidable challenges to the integrated network operations staff tasked with assuring voice and data service quality. This presentation will outline best practices for network operations managers and other staff managing voice and data service performance to deliver cost-effective, simplified and proactive network management.

Wednesday, September 12th • 2:45 - 3:30 pm

Securing Enterprise VoIP

As VoIP moves from the Intranet to Internet, security has gone from being a nice-to-have feature to a fundamental requirement. This session will look at what is required and how security works in VoIP systems. It will consider the types of attackers, their motivations, and the attacks that have been observed on a wide variety of real deployments. It will then explain the various mechanisms that are available to provide authentication, authorization, integrity, and confidentiality.

SIP

Monday, September 10th • 9:00 - 9:45 am

The State of SIP

We continually hear about SIP, but do you find yourself bewildered by the buzzwords and terminology? Wish someone would tell you what a SIP Proxy was, and why it might feel the need to fork? What advantages does SIP bring? Why should I move now? This 'back to basics' session will take a high level look at the SIP protocol and the power it puts in the hands of application developers and solution architects. We will discuss the building blocks required to put together a SIP deployment so you can talk with confidence about how the next generation of telephony products will be built!

Monday, September 10th • 10:00 - 10:45 am

SIP & SS7

One of the challenges for carriers is to roll out a SIP-based core network and related applications, while providing a package of services for both traditional and IP phone users. One way to overcome these challenges is to provide support for interworking between circuit-switched signaling methods - in particular, SS7 and SIP. A variety of standards groups have taken on the challenge of providing interworking between the large SS7 installed base and SIP. In this session, we will review the various efforts that have been made in standards bodies to address these needs and provide some use cases of how SIP and SS7 can be used together to provide connectivity and voice services for both IP and circuit switched users. In addition, we will consider some of the open business and technical issues in this transition and practical approaches that can be used to solve them.

Monday, September 10th • 11:00 - 11:45 am

SIP in the Call Center

Everyone is talking about SIP, and for excellent reasons. After all, SIP changes everything in a contact center. If a business is struggling to innovate for a competitive edge, SIP delivers key new capabilities to a contact center that foster new avenues of communication and instantaneous collaboration using any device. Understanding the vital capabilities of SIP and how they help remove restraints to convenient, dynamic, breakthrough customer service will allow users to add cutting edge capabilities to a contact center that strengthen customer retention, boost employee productivity, and provide superior agility.

Monday, September 10th • 12:30 - 1:15 pm

SIP Trunking From 10,000 Feet

SIP trunking rapidly reduces costs by leveraging SIP, eliminating redundant network connections and providing PSTN termination in the local area. This session will provide an overview of the issues faced in enterprise deployments, provide real solutions and discuss the opportunities that SIP trunking offers.

Monday, September 10th • 1:30 - 2:15 pm

Developing Applications Using SIP

VoIP has created a beachhead for a new generation of converged IP applications for telecommunications, the mobile market, and even the enterprise. SIP offers an IP data delivery platform that uses the IP infrastructure already in place for real-time communications services like VoIP, plus it enables a whole new generation of converged applications that combine multiple functions into a single application - across software clients, devices and networks. Part of the beauty of using SIP as a convergence development platform is that these new telecommunications applications can be readily adapted to run over just about any IP service infrastructure, including enterprise networks or cellular service as well as landlines. This presentation will discuss how SIP is serving as the common platform in driving the convergence market, making it possible to integrate multiple features and functionalities into a single application accessible from any client or device. It will also review how SIP and SOA are streamlining applications development among enterprise and telecommunications developers as the lines distinguishing data and voice platforms continue to converge.

Monday, September 10th • 2:30 - 3:15 pm

Why SIP Trunking Makes Sense For SMBs

SIP Trunking is experiencing rapid growth in the SMB market. While SMBs have other options like hosted PBX and legacy interfaces, why is it that SIP Trunking is leading the way? Panelists from some of the leading PBX Manufacturers and Service Providers will discuss the benefits of SIP Trunking and why this trend is occurring.

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(FtOCC, pronounced "F-talk") is a 3-day course teaching you the basics of trixbox administration. Designed for those who wish to install trixbox systems for their company or clients, persons tasked with maintaining a trixbox installation, or users relatively new to trixbox that want a better understanding of it's capabilities. FtOCC focuses on the core operations that an administrator would need to handle on a regular basis.

Who Should Attend?

IT Engineers tasked with supporting or implementing an IP PBX.
System integrators and VARs who want to sell IP PBX systems.
Phone system resellers looking to move into the IP PBX market

Each student receives the trixbox VMWare image and the VMWare Player to install on his/her laptop for course lab work. Note that the course does not presume that the students are full-time sys admins, however all are presumed to have some general computer experience.

Materials: Polycom SIP Telephone, FtOCC Workbook, Jump drive with trixbox VMWare and FtOCC presentations, "FtOCC Certified" polo shirt, trixbox T-Shirt and cap

Course Objectives: At the end of the class you should:

- Become comfortable working within the Linux shell.
- Understand the various components of Asterisk.
- Be able to add, delete and alter user configurations.
- Be able to configure several common models of SIP phones.
- Be able to create IAX2 or SIP links to service providers.
- Be able to alter basic parameters for Zaptel devices (FXS and FXO).
- Be able to add DIDs and direct them to users.
- Be able to implement new features.
- Be able to build IVR menus with proper loop-prevention, error handling, etc.
- Be able to record prompts for IVR menus, audio text messages, etc.
- Understand and use the Asterisk ACD (queue/agent) system.
- Understand the issues with NAT and their impact on remote users.
- Understand the strategies which can eliminate these issues.
- Be able to check on system health from the shell/CLI.
- Understand and prevent security threats that impact a trixbox system.
- Understand how call routing works in Asterisk and be able to implement a basic Least Cost Routing structure in the Dial Plan.
- Recognize the issues related to emergency handling (911/E-911) and how best to configure a system to securely handle such calls.

OPEN SOURCE

Tuesday, September 11th • 8:00 - 8:45 am

Primer: State of the Art in Open Source

Every new VoIP deployment begins with an evaluation of open source alternatives. But in the world of open source VoIP, one size does not fit all. This session reviews the top open source VoIP projects and provides a framework for evaluating them and others. At its conclusion, attendees will be able to better understand the strengths and weaknesses of each in relation to the needs of an organization. Among the alternatives, this session will feature coverage of Asterisk, OpenSER, SIPX, Freeswitch, OpenSBC and JAIN.

Tuesday, September 11th • 1:30 - 2:15 pm

Selecting an Open Source VoIP Solution for the SMB

Enterprise-grade business phone systems have long been out of reach of small and medium-size businesses. Traditionally provided by giants in the space, prices for hardware and services are often well above the price that a small business owner can afford. Previously ignored by the larger companies, new entrants to the market realized that the small- and medium-size business market responds well to complete systems that are easy to set-up and use. Further, with the growth of open source players in the market, SMBs are finally gaining access to the technology they want and need. Price, rather than need and functionality, has been the biggest barrier for acceptance of sophisticated VoIP services in the SMB. Come learn about changes in the market that are making VoIP more accessible and practical for businesses allowing them to reach their communications goals.

Tuesday, September 11th • 2:30 - 3:15 pm

Mobile VoIP and Linux

With increasing cost and time to market demands on handset manufacturers, the promise of Linux for mobile VoIP is attractive. This talk will uncover the advantages and challenges of working with Linux compared to other alternatives. In addition, the session will look at the entire software stack relative to VoIP and offer case studies of companies who have successfully created pure VoIP or dual mode VoIP devices. The session will also discuss the paradigm shift VoIP introduces to the traditional wireless carrier. How can the industry adapt to capitalize on larger bandwidth and offer compelling applications that the end user will actually use? Or, is this a case of a 'Giffen Good' where a reduced cost to the end user for mobile services results in a lesser demand for those services?

Tuesday, September 11th • 3:30 - 4:15 pm

Securing Open Source Enterprise VoIP

It's well documented that Open source provides a level of flexibility in creating IP-based solutions and can play a key part in migrating the traditional phone network to IP, while saving communications developers and providers capital - enabling them to pass the cost savings onto their customers. But as with any enterprise VoIP deployment, security is an issue that can't be overlooked. Come to this session to get educated on what you need to do to secure your open source enterprise VoIP deployment.

OPEN SOURCE

Tuesday, September 11th • 4:30 - 5:15 pm

Open Source Development Challenges

VoIP and Open Source technology are part of a growing segment of SMB communications. To thrive, VoIP must at least match or better yet - outperform - the voice quality of traditional telephony. There are any number of challenges and solutions unique to developing applications using open source, including - but not limited to - voice quality, scalability and more. This session will be of great interest to developers who wish to learn more about some of the challenges facing them when choosing to work in the realm of open source and how overcoming these challenges will allow them to garner advantages like reduced development time, ease of deployment, and overall cost-effectiveness.

ESSENTIAL ISSUES

Wednesday, September 12th • 8:15 - 9:00 am

Future Trends

Beyond today's VoIP courtroom dramas, innovative companies are dreaming up new applications and new services that are designed to take advantage of a world that's moving to IP. This session will feature some forward thinking experts who will shed some light on what trends are driving this industry forward and what the future will look like. IMS, FMC, presence, next-gen communications and collaboration tools… Want a peek beyond tomorrow? Then this session is the one for you.

Wednesday, September 12th • 9:15 - 10:00 am

Business Continuity and Disaster Planning

With the threat of natural disasters, pandemics and terror attacks as well as a host of other non-planned business disruptions, being prepared means providing employees with the ability to communicate effectively around the clock no matter where they happen to be. Among other issues, this session will focus on:

- Leveraging broadband connectivity at branch offices for VoIP
- Application and VoIP performance requirements for remote workers and branch office users.
- How teleworking scenarios fit into a business continuity plan.

Wednesday, September 12th • 10:15 - 11:00 am

Enterprise Voice Mashups

Come learn about the impact of Web Service delivered communications capabilities. The speaker will discuss the roles of Service Oriented Architectures, and in particular, teach the audience why they are important (they make the business process run faster, with less expense and with higher customer satisfaction), show them real life examples and describe the basic architecture and elements required.

Wednesday, September 12th • 12:45 - 1:30 pm

Regulatory Update

There is constant talk of the how government regulation of the industry would affect consumers and providers alike. VoIP has long been a major topic of discussion at the FCC and most recently the Verizon v. Vonage lawsuit has held the attention of industry watchers. This session will serve as an update on the regulatory situation today, and will help shed some light on what today's actions mean for the future of the industry.

Wednesday, September 12th • 1:45 - 2:30 pm

Regulation: E-911 Update

More than a year has passed since the FCC ordered VoIP Service Providers to provide E-911 to their customers. The FCC has now formed an enforcement team to review VSP's status of compliance. This session will discuss where we have been and where we are going with VoIP 9-1-1 compliance and how to be compliant in 2007 and 2008. This session will focus on:

- Regulatory letters from the FCC enforcement team: what they mean and how to be compliant.
- Significant weaknesses in our 9-1-1 infrastructure that have caused roadblocks in compliance.
- The Next Generation of 9-1-1; what's coming next and how it will effect service providers.
- Ongoing initiatives concerning the accurate routing of 911 calls to Public Safety Answering Points (PSAPs) across the US and Canada.

Wednesday, September 12th • 2:45 - 3:30 pm

VoIP Competitive Intelligence Survey

Analysts estimate that residential adoption of VoIP service is bound to grow from 6.9 million homes in 2006 to over 23.7 million in 2010. The SMB and enterprise market forecasts are equally aggressive. Even so, VoIP reliability and audio clarity remain important factors that limit the widespread adoption of VoIP in consumer markets. Keynote Systems measured and evaluated the performance of more than a dozen consumer VoIP Service Providers as part of a competitive intelligence study. To hear the results of this important survey, attendees are invited to this session. Don't miss out!

SERVICE PROVIDER SOLUTIONS

Monday, September 10th • 9:00 - 9:45 am

Guide to Understanding Today's Service Provider Market

VoIP is flourishing. Recent research confirms that over 10.6 million U.S. households are currently using VoIP. Enterprises deploying VoIP are integrating phone systems across multiple locations, making scalability, operational cost savings, and converging voice and data networks key factors in their planning - and the SMB market is primed for new market entrants. Next to basic voice, money-saving long distance/toll bypass is the highest ranked application for VoIP. But what's next?

In this presentation, attendees will hear from service providers about successes and failures in developing VoIP applications, and will get a glimpse at trends they believe the industry will witness in 2007 and beyond. Conversation will range from the technical challenges to the business implications. This is truly a can't miss session.

Monday, September 10th • 10:00 - 10:45 am

Serve Your Customers Innovative Applications

Service providers invest heavily in network infrastructure to satisfy the ever-increasing demand for high-bandwidth access to services. But while consumers are spending more on these new services, the revenues do not necessarily flow to the providers of the network infrastructure, to ensure a return on their investment.

A natural business strategy is for network service providers to offer their own revenue generating services. How can operators create a new and broader set of services to generate increased revenue? Architectural approaches such as IMS promise greater flexibility in enabling new services. Examples will be given of innovative new applications that are made possible in IP-based carrier networks. The use of Web Services, an open Internet standards approach, will be discussed as a vehicle for enabling new applications that generate revenues for the carriers. The integration between voice telephony services and enterprise IT services will also be discussed as a revenue opportunity for carriers.

Monday, September 10th • 11:00 - 11:45 am

What About Hosted?

Frost & Sullivan forecasts the hosted IP telephony market in North America to grow from $493.1 million in 2006 to more than $5 billion in 2012. Hosted IPT has been available in the North American marketplace from circa 2000, but service providers have captured only a limited penetration until now. In this session, the speakers will discuss the economics of selling hosted IP telephony, and the impact of enterprise legacy infrastructure on the hosted IP seat sale. Participants will learn tactics and best practices for growing their market share and revenue more quickly by selling high-value hosted IP seats and leveraging the simplicity and shorter sales cycle of SIP trunking. Attendees will also learn how to successfully remove common customer objections such as cost and business disruption which enterprises often express when considering a VoIP migration.

Monday, September 10th • 12:30 - 1:15 pm

Successfully Managing Next-Gen Networks

VoIP is complex and at times seemingly impossible to troubleshoot. This complexity along with the recent growth of IP services has created a difficult business model for service providers to execute. The industry is finding that traditional tools simply don't meet the challenges. This session will explore new options available to insure the service provider's successful delivery of today's IP services including voice over IP.

Monday, September 10th • 1:30 - 3:15 pm

The State of VoIP Peering

This session will serve to define the State of VoIP Peering today. The panel of experts will review the state of VoIP Peering as well as offer some history, analogies, and examples of what is happening in the industry to support the claim that voice peering is having a significant impact on the economics of communications. Some topics to be covered will include ENUM, security, as well as the key questions: 'How far have we come in the last 4 years?' and 'Where are we headed?

SERVICE PROVIDER SOLUTIONS

Tuesday, September 11th • 8:00 - 8:45 am

Reaching the Consumer Market

Today we see new and established service providers making strategic investments in their networks to better position themselves to withstand the forthcoming market forces that will forever change the telecommunication industry. These crucial investments will allow these providers to be able to introduce the more robust and application-rich VoIP technology, and secondly, to be able to offer higher-margin and more differentiated services that go well beyond basic call termination services. By combining the power and flexibility of VoIP technology and the ease, ubiquity and richness of the web, providers can now provide consumers with a level of empowerment that was just not possible in the circuit-based network. Come learn how to take advantage of next-generation services to attract new subscribers and retain existing ones.

Tuesday, September 11th • 1:30 - 2:15 pm

Introduction to Security

Today's enterprise networks are expected to deliver an increasing amount mission-critical communication applications such as voice, video, data and mobility while at the same time avoiding a negative impact on network optimization. Enterprises demand increased productivity and cost savings, so as more applications run on the LAN and WAN, the stakes get higher. Security challenges from privacy to encryption, to denial of service attack protection become extremely complex. Businesses also demand that their IP communication services be of the same high quality and reliability as their non-IP counterparts. As a result, aspects such as call quality assurance, network and cost optimization, and delivering services through NATs/firewalls become increasingly important for the underlying network. While high-profile VoIP security breaches and attacks are currently rare (or, at least, rarely reported), there is a strong focus on VoIP security of late. This session will give an overview of current VoIP threats and focus on the business challenges to delivering a satisfying user experience over enterprise networks and explore the technical solutions available to meet those challenges.

Tuesday, September 11th • 2:30 - 3:15 pm

Securing Hosted VoIP

Often an afterthought, network security - especially as it is impacted by new and emerging VoIP technologies - will be critical to business viability now and in the future. Understanding how VoIP fits into the creation of network security policies and network security plans is imperative. As the world becomes more and more "wired," clever thieves and others bent on malice will exploit the opportunities that are afforded to them. This presentation will discuss the basics of network security policy and planning while focusing on identifying specific attack vectors presented by VoIP.

Tuesday, September 11th • 3:30 - 4:15 pm

Carrier Hotels

This session will take a look at the Carrier Hotel Landscape of North America (and the World) from a variety of perspectives: What's new in the world of the Carrier Hotel and Meet Me points; What are some of the prevailing applications, and service types; and how can you overcome the limits of physics?

Tuesday, September 11th • 4:30 - 5:15 pm

Understanding Quality of Experience

Voice calls are consumers' primary application and the top revenue-generating service for carriers. Service providers' performance is essentially measured based on the quality of the call experience. Users are placing a higher priority on the call experience and are growing more likely to switch carriers if quality is poor.

This presentation will examine causes of these quality of experience (QoE) failures, and how the implementation of testing software and silicon hardware in the VoIP customer premise equipment can enable easy diagnosis and resolution of these problems, resulting in lower customer support costs and reduced churn from unhappy customers.

The speakers will also cover the evolution of user perceived value from a traditional quality of services model to a more Internet-like "quality of experience" model. And, how in the "experience economy," service providers can achieve user loyalty through the delivery of a more compelling experience.

WIRELESS/MOBILITY

Monday, September 10th • 9:00 - 9:45 am

Deploying & Troubleshooting WLANs

Wireless LANs have become pervasive amongst enterprises. The increasing availability of wireless voice clients and the emergence of dual-mode (wireless and cellular) smart phones, coupled with the improved productivity realized by enabling a mobile workforce, are moving WAN usage from convenience to mission-critical. Enterprises are beginning to recognize the many benefits of adding important applications like voice to their existing WLANs. However, they must first ensure that their wireless LAN infrastructure is truly ready to handle a mix of data and voice applications and their IT managers must understand the deployment challenges and the capabilities necessary solve them. This presentation will discuss the key requirements for delivering voice over an enterprise's Wireless LAN and will help IT managers better understand and face the challenges involved in building and managing the next generation of converged wireless infrastructure.

Green Technology Featured Session

Monday, September 10th • 10:00 - 10:45 am

Overcoming Broadband Wireless VoIP Challenges

More than ever before broadband is getting unwired. From mesh networks, to hot spots and advances in 3G - more consumers are surfing, talking and staying connected over the air. WiFi networks in public, enterprise and home locations are growing at an unprecedented rate, opening a new and untapped delivery platform for VoIP. Broadband wireless presents a new opportunity for wireless VoIP that not only reduces telecommunications costs but also increases mobility. The speakers will address some of the challenges, such as QoS, scalability, and security as well as take a look at emerging strategies to create broadband wireless networks that are not only capable of supporting converged data services, but that can delivery secure, high-fidelity voice and multimedia data.

Monday, September 10th • 11:00 - 11:45 am

IMS Versus WiMax

In this presentation, the speaker will talk about existing market trials for IMS and WiMax and the experience in working with leading OEMs and carriers and their perspective on these technologies. In addition, the speaker will present critical architecture similarities and differences between IMS and WiMAX-based networks and discuss in depth about whether it is feasible to expect that only technology will survive, or whether, in reality, vendors will need to support both

Green Technology Featured Session

Monday, September 10th • 12:30 - 1:15 pm

Designing Software For Mobile VoIP and Video

Voice over WiFi is becoming a commodity, but for its wider adoption a new generation of VoIP-enabled handsets should emerge. The cell phone is fast becoming the ultimate platform for a range of entertainment and business services. And typical users would love to access these varied services from a single handheld device. This fancy gadget should combine cordless, cell phone, PMP, be interoperable with PC, be VoIP-enabled, and have the price of a regular cell phone. Both hardware and software platforms have to evolve fast to comply with this challenge.

The presentation will enlighten attendees how to get Voice over WiFi enabled on handheld devices and speak to the most challenging problem encountered in mobile VoIP: ensuring rich voice and video quality while having to cope with resource limitations of a mobile device and inherent problems generated by wireless networks. The issues of optimizing codecs, voice enhancement, and extension of voice functionality by video support will be covered.

Monday, September 10th • 1:30 - 2:15 pm

Trends in Dual Mode

With the fast pace of wireless technology, product announcements and mergers, it is critical to accurately predict what the next 24 months hold. Dual-mode mobile/WiFi handsets trends are thought to be a key driver to mass consumer adoption of VoIP by 2009. The dual-mode phone market will grow substantially over the next few years. This market will most likely start in the enterprise sector and then move to the consumer sector; however various opinions may differ regarding which market will adopt the technology first. Currently, major emphasis needs to be on reducing the costs of a dual-mode handset on the client side and deploying appropriate FMC (Fixed/Mobile Convergence) infrastructure on the operator side.

Many field trials of this technology are already underway and more will happen over the course of the year. Commercial deployment of the same has begun in the high-end market segment, however mass deployment for the consumer sector will start only when handset costs are reduced. This market will experience explosive growth over the next 4 years.

Monday, September 10th • 2:30 - 3:15 pm

Making Money With Mobile VoIP

This session will focus on mobile VoIP as the next way to enter the mobile market with new services. In recent months, several big names in the communications sector announced mobile phone-based VoIP products and services that will radically change how cellular customers use their handsets. Early adopters associate mobile Internet with writing e-mail, sending the occasional picture message or even making an exotic video phone call, but many easily get hooked on cheap VoIP calls or IM (instant messaging) chats. While the service of regular mobile phones are limited in many ways, the technology is there to open mobile VoIP to the existing customer pool of 2.5 billion average cell phone users who only have a regular cell phone instead of the latest chip implanted smart phone. The speakers will address the state of mobile phones today and how new solutions supplement the shortcomings of most mobiles in order to create viable solutions and services in this 2.5 billion user market. The presenters will enlighten the attending audience by discussing viable ways to lower the cost of acquisition and target the mobile market for mass adoption. Furthermore, they will discuss different options of frictionless adoption of the potential service and how to work these notions into existing behavior.

WIRELESS/MOBILITY

Tuesday, September 11th • 8:00 - 8:45 am

Introduction to Wireless

Many industry experts mention wireless as one of the key domains for the progress of VoIP in the next couple of years. For many developers new to Wireless VoIP (wVoIP), taking their IP voice design to wireless seems quite straight forward. Most VoIP engineers are not that well aware of the limitations and constraints imposed on their designs by the nature of radio communication.

Starting with the high level wVoIP systems overview and narrowing down to key block level discussions, the presentation will educate delegates on important issues like voice quality and bit error rate, appropriate codec selection, bandwidth utilization, coding schemes, working distance and radio waves propagation, power consumption and battery life, etc. The presentation will provide a high level overview of voice specific functionality inherent in WiFi, Bluetooth, WiMAX, ZigBee, wireless USB, etc.

The discussion will be illustrated by design examples that demonstrate the implementation of the enterprise and end-user level wireless VoIP solutions.

Tuesday, September 11th • 1:30 - 2:15 pm

Wireless VoIP Vision for the Enterprise

The long-promised explosion of enterprise wireless VoIP has finally arrived. What does the future hold for this technology and how is wireless changing? What is driving adoption, and what will continue to fuel this fire? In this visionary presentation, we'll discuss industry factors and trends that are changing the way we view and plan for wireless in the enterprise. Included will be discussion of fixed-mobile convergence, how we use intelligent devices, how companies are taking advantage of today's advanced wireless networks, new technologies and standards, mission critical applications that are driving wireless network development and adoption, and how wireless security is advancing to keep up with industry needs. In addition, there will be case studies of industry-leading companies using wireless VoIP today and what their plans are for tomorrow.

Green Technology Featured Session

Tuesday, September 11th • 2:30 - 3:15 pm

Mobile Enterprise Applications

Despite the emergence of new applications and technologies uniquely suited to an increasingly mobile workforce, this trend still faces a steep adoption curve because of remaining questions regarding the viability of current wireless solutions. Given the range of mobile devices, services, and applications available today, the mobile business landscape promises continuing changes in the way enterprises conduct business.

In this presentation, we will examine the applications that are most likely to have the greatest impact on how people work and communicate in today's business environment. The presenters will offer an update and a timeline going forward for much-anticipated innovations such as dual-mode devices and services and share best-practice guidelines for what companies can do to improve management of mobile business processes.

Other topics to be covered include:

- How to use technology interoperability to interconnect mobile voice and data systems for optimum communication.
- How to maintain mobile security across electronic devices to prevent information interception, blocking, and misuse.
- What key factors are most important to mobile enterprise success today.

Green Technology Featured Session

Tuesday, September 11th • 3:30 - 4:15 pm

Mobile Rich Media Applications

The advances in the development and deployment of mobile computing platforms with rich media capabilities, has led to an explosion in mobile application development. The impact and sophistication of this market, while nascent in the United States, can be seen in advanced markets such as Japan and Europe where powerful 3G handsets have exploded IP network traffic usage. As these sophisticated networks and features spread to the U.S., the suite of functionality that domestic carriers offer will become vital: essential to this will be a strategy on how to best integrate VoIP and IP Communications functionality into the mobile handset.

In this session, the presenter will set out to explain the realities of the market as it exists today, and the burgeoning need to integrate IP Communications applications into mobile computing platforms and onto handsets. As mobile handsets are now appearing with WiFi, SIP clients, and capabilities for Flash and AJAX, carriers will need new applications that will attract usage and keep subscribers on their network.

Tuesday, September 11th • 4:30 - 5:15 pm

Security in a Mobile World

As mobile devices increase in sophistication, the value of data they carry makes them more valuable than many computers. Applications and services previously limited to PCs are also now available on mobile systems, offering consumers experiences they've never had before. However, as the mobile environment evolves, the same problems that have plagued PC users for many years (fraud, theft, viruses and spam) have also begun to threaten the integrity of the mobile industry. In this session, we'll explain ways to improve fraud prevention and strengthen customer loyalty.

Attendees will learn:

- How to identify mobile messaging risks and what technologies exist to mitigate those risks;
- How anti-spam and anti-spoofing technologies allow operators to detect abnormal patterns in messaging traffic, confirm legitimate senders, filter content, and block suspicious messages;
- How EIR (equipment identity register) supports theft prevention; and
- How to turn these technologies into revenue-generating value-added services.

VOIP FOR SMB

Wednesday, September 12th • 8:15 - 9:00 am

VoIP Options for the SMB

Small to Medium sized businesses represent the largest potential market for VoIP solutions. These organizations, not only within the U.S. but globally, have the most to gain from enhanced features and functions while lowering costs. Traditionally, large PBX systems were relegated to organizations that could afford the lease or purchase as well as the personnel required to manage, monitor and maintain them. VoIP has created an entirely new paradigm whereby physical location of personnel becomes much less relevant, and sophisticated systems delivered by "virtual" service providers makes them truly affordable to businesses of all sizes. This presentation will discuss several models that are available to small and medium organizations. These include the value of hosted IP PBX systems, the use of IP trunking, disaster recovery implications, and the importance of network security.

Wednesday, September 12th • 9:15 - 10:00 am

IP Powered Applications for the SMB

Applications that are optimized in IP environments, like as presence management, Web conferencing and document sharing and other collaboration tools, have started to gain more traction among businesses that see these solutions as powerful tools that can help a company increase revenue, improve operations, and reduce costs.

Unfortunately, many small- and mid-size businesses are under the misconception that these tools are too complicated or costly for their use. In fact, smaller companies, who often have the same challenges as an enterprise, can cost-effectively leverage these tools to meet their needs. This session will define IP-powered applications for small businesses, and explain how the requirements needed to support these tools. In addition, the presentation would include various examples of how these solutions can be easily leveraged by workgroups, departments, or individuals to improve both productivity and efficiency.

Wednesday, September 12th • 10:15 - 11:00 am

Performance and TCO Advantages of Hosted IP PBX Phone Services for SMBs

Hosted IP PBX phone services offer small businesses unparalleled performance and TCO advantages. With no on-premises equipment needed, capital expenditure is avoided, maintenance contracts are unnecessary, and management is fully outsourced to a secure, central location. Furthermore, businesses are assured of instant access to the latest service and feature upgrades. Learn how your small business can benefit from this rapidly growing VoIP business phone service offering.

Wednesday, September 12th • 12:45 - 1:30 pm

Stay Connected to Your Customer

Small and medium sized businesses must maintain a high standard of customer service and reliability in order to compete with their large enterprise counterparts. And, in a business arena where every customer counts, the SMB must always be available to their customers and respond to customer requests immediately. But, how can small business staff support their customers with the limited resources available to them? Thankfully with the advancements in communications convergence technology, small businesses have the ability to stay connected to their customers no matter where they are. Voice and data and wireless and wireline convergence allow SMBs the ability to transfer all incoming calls to cell phones or other remote locations, ensuring maximum efficiency and reliability. Yet, small businesses have a different set of standards to evaluate when considering the adoption of these solutions.

This session will address the considerations SMBs need to be aware of when transitioning to IP as well as provide an update of the latest convergence technologies available, specifically areas relating to IP telephony. The speaker will also discuss best practices and other strategies for small businesses to consider when utilizing communications convergence technology.

Wednesday, September 12th • 1:45 - 2:30 pm

A Closer Look at Hosted VoIP

Small and medium businesses have unique needs that aren't currently being met through traditional communication solutions. Hosted VoIP is uniquely suited for the SMB market. It provides them with a distinct advantage by allowing them to have big business capabilities while eliminating the high costs and stressful maintenance that normally go along with them.

For small businesses, VoIP technology opens doors that have never been open before. Even on a tight budget, companies can enjoy a complete communications system with productivity and mobility features like never before. And with the increasing convergence of media and software applications, VoIP is rapidly becoming the essential foundation for a future-focused business. This session will give SMBs a better understanding of the basics, benefits, and efficiencies that can be gained through a Hosted VoIP solution.

Wednesday, September 12th • 2:45 - 3:30 pm

Selecting SMB VoIP: Cut Through The Confusion

VoIP marketers are failing to properly educate consumers. According to a recent report by AMI-Partners, the SMB is confused by the amount of choice in solutions presented to them when considering the switch to a VoIP solution.

One of the primary reasons for all of the confusion is - instead of delivering solutions that the small medium business needs, we are trying to deliver what we think the customer wants. We have, as an industry, focused on delivering next-generation features, bleeding edge applications, and other "advanced" technologies to a marketplace that really only wants one thing: something that works.

There really is no such thing as the "average" small medium business. They are all unique. But there is a simple, basic set of functional elements they need to phone system to perform. After this set, it is really a coin-flip, as to whether or not the "extra" features will help or hinder the productivity of the business. Come to this session and cut through the confusion!

FMC

Monday, September 10th • 9:00 - 9:45 am

Fixed/Mobile Convergence Primer

One phone, one number that works anywhere and everywhere - that's the main appeal of fixed mobile/convergence (FMC). As the industry moves toward this trend, dual-mode phones are becoming a popular commodity. But looking beyond the benefits of FMC, companies face the challenge of adjusting business and IT support models to fit changing needs.

In this session, we'll examine the technologies, implementations and impact of FMC and look at how the landscape will change in the coming years. Included will be a discussion of the factors now driving FMC, which technologies will continue to be important, which ones will fall by the wayside, and a look into the industry's feelings and perceptions towards FMC.

Monday, September 10th • 10:00 - 10:45 am

Seamless Services Across Fixed & Mobile Networks

As Voice and Data services over IP start to dominate business and consumer communications, there is an accelerating demand to extend mobile services to IP devices such as PDAs, and PCs. Exciting - and "addictive" - applications that are available for mobile phones and portable PDAs are being extended to the PC and the desktop. To make the "Converged" experience truly seamless for the end-user, there must be appropriate user software, devices, and a high-bandwidth IP infrastructure to support these services. This session will identify the barriers that are being overcome to achieve seamless converged services and the likely market timeline over the next two years.

Monday, September 10th • 11:00 - 11:45 am

The Need for Convergent Billing

WiFi/cellular convergence is set to deliver lucrative business opportunities to service providers in both developing and developed markets. New market entrants are arriving, competing against incumbent fixed-line and cable providers who in turn will challenge traditional mobile operators. Marketing innovation combined with the right business systems and tool-sets will enable service providers to quickly and efficiently deliver differentiated high-end service packages. To do this, service providers will need a convergent billing system. Incumbents and new entrants introducing fixed/mobile convergent services will require pricing and billing systems that offer inherent flexibility, reactivity, and the capabilities to rapidly tailor their new packages to keep ahead of the competition in this increasingly customer centric market. Attend this presentation to learn all about the benefits of selecting the right convergent billing system for fixed/mobile convergence.

Monday, September 10th • 12:30 - 1:15 pm

Service Provider Perspective On FMC

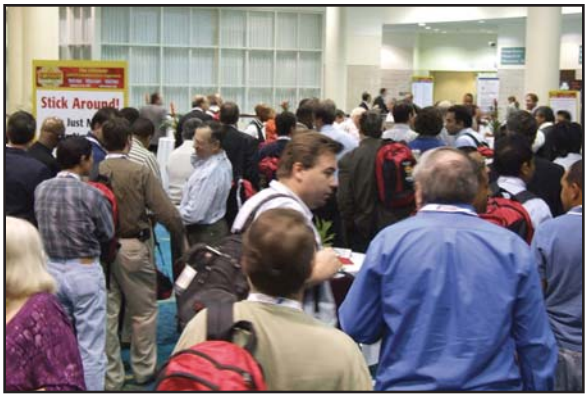
We hear a lot about the advent of fixed/mobile convergence services from the enterprise or consumer side, specifically the benefits to the enterprise and how FMC stands to make enterprise communications more efficient for all. But what about the service providers? Where do they stand on this issue? And what steps are they taking to enable FMC services? Come to this session to learn all about what service providers think about offering FMC and how they think this will ultimately affect the market.

Monday, September 10th • 1:30 - 3:15 pm

FMC: Driving the Transition to IMS

The coexistence of fixed and mobile communications for residential and business users has created a new landscape for the next generation of VoIP and IP services. These new real-time services - voice, video, instant messaging (IM), multimedia conferencing and other presence-enabled business applications - must be deployed using a standard architecture, and the telecom industry is turning to IMS to define this architecture.

Both enterprises and remote users will benefit from an industry-wide transition to IMS because it enables the fully secure deployment of real-time, converged services. However, this evolution to IMS cannot happen immediately. This session will explain how service providers are able to deliver advanced services such as FMC today while they intelligently evolve their infrastructures towards full IMS compliance and ready their networks for the future. Awareness of the phased approach to IMS will educate attendees on the key concepts that are driving the evolution of the industry.



Conference attendees networking at INTERNET TELEPHONY Conference & EXPO East 2007 in Ft. Lauderdale, Florida this past January.

IMS SUMMIT AT ITEXPO

Tuesday, September 11th • 8:00 - 8:45 am

Introduction to IMS

It would be difficult to point to something that has generated as much hype as IMS. To uncover what is fact and what is fiction, certain questions must be raised - What is IMS really, what are the goals, what can you do with it and most importantly - where are the deployments? Changing over to IMS is not a simple task, neither when transitioning legacy networks nor when trying to transition an existing product line to function as if it has always been IMS-ready.

The reality is achieving IMS is not simply done just by adding an interface, component or anything else. IMS is also not achieved through the appearance of compliance. Rather, IMS is fundamental; the architecture must be open and distributed to begin with. Come to this session for a refresher of what IMS is, where we stand with regard to IMS and where we're heading.

Tuesday, September 11th • 1:30 - 2:15 pm

The Business Case for IMS

The technologists have spoken, and they have decided that now is the time to begin the migration to IMS. But what about the folks who hold the purse strings? Are they convinced? Is there a business case for IMS? Should IMS be viewed as strategic? Or tactical? Our expert speakers will be able to spell out the business case for IMS and attendees will leave this session with a better understanding of the business issues surrounding this explosive segment of communications.

Tuesday, September 11th • 2:30 - 3:15 pm

Best Practices in Service Creation

IMS defines an IP-based service-centric creation and control framework that supports the rapid development of new multimedia services that are access agnostic. Web 2.0 has garnered significant interest and usage among users and developers. Leveraging some of the successful experiences of Web 2.0 can further enhance the adoption of IMS services.

This presentation will discuss how operators and developers can use Web 2.0 strategies and best practices to promote the development of rich converged IMS services that encompass messaging, media and mobility. Using examples from application domains such as unified communications, video portals and enhanced messaging, the discussion will reference IMS architectural functions such as SIP AS, SCIM, GUP Server and interfaces as well as supporting industry client frameworks.

Tuesday, September 11th • 3:30 - 4:15 pm

A Day In The Life of IMS

Representing a new network paradigm, the distributed and open IMS architecture enables carriers to efficiently deliver a broader range of multimedia and rich voice services to more subscribers over more access networks than ever before. With this new paradigm comes a brand new set of security, QoS management, and policy issues that will challenge service providers' experience and require new strategies to ensure safe, reliable service delivery. The enormous dimensions and performance requirements of IMS networks will make these challenges even greater.

As users move through their daily routines, the IMS network will undergo cycles of dramatically escalating and waning stress, including a flood of simultaneous IMS registrations and de-registrations, massive numbers of sessions per second and skyrocketing bandwidth usage. The network must be prepared for: scalability, quality and security vulnerability issues that result from these huge spikes in traffic; service-specific competition for bandwidth; users coming from untrusted access networks and IP-based signaling control and media flows that could carry malicious packets. The speaker will walk attendees through a day in the life of an IMS network and identify types of attacks, prime time for attacks, QoS stress points related to network dimensions and solution strategies.

Tuesday, September 11th • 4:30 - 5:15 pm

IMS in the Enterprise

IMS is an important emerging network architecture blueprint for service providers, but what value does IMS offer in the enterprise? What dynamics can lead an enterprise to embrace the IMS framework? This session will examine the benefits of IMS for an enterprise and explore the benefits that IMS can deliver to an enterprise, including the convergence of communications and IT business processes over a common infrastructure. It will explore how an IMS-architected platform for real-time conferencing and collaboration can dramatically simplify deployment and management, enabling customers to save IT resources and to achieve productivity and increased functionality, while also driving greater use through on-demand end-user services that easy to use. It will also cover how an IMS-architected conferencing and collaboration platform can lead to tighter integration and expanded flexibility for using these productivity-enhancing tools as part of a company's core unified communications platform.

Wednesday, September 12th • 8:15 - 9:00 am

Optimizing Components for IMS

The IP Multimedia Subsystem (IMS) is a next generation networking architecture for telecom operators, which includes (among other components) a media gateway, a media resource function processor (MRFP), and a session border controller (SBC). Now, instead of using three different boxes to fulfill each of these requirements, developers can use building blocks and components to handle all three functions, enabling TEMs (Telecom Equipment Manufacturers) to build a single box to fulfill all of these IMS functions. The goal here is to lower the total cost of ownership and increase operators' and service providers' revenue by providing more services and functions that they in turn can offer their customers. The session will focus on development strategies to optimize IMS components and address integration opportunities with emerging platforms.

IMS SUMMIT AT ITEXPO

Wednesday, September 12th • 9:15 - 10:00 am

Is There A Killer App in IMS?

The proliferation of voice, video, data and wireless products on the market today speaks to an equally wide range of consumer desires. What defines a "killer app" varies from individual to individual. Thus, it can be said that the entire premise of the killer app is rooted in the personal. In that case, it makes sense to accept that the term "killer app" should be used in an all-encompassing manner, describing a platform that spawns personalized, killer apps for each individual rather than single applications that may or may not enjoy wide appeal. Or does it? Is it possible that there is a killer app in IMS? Come hear what the experts have to say on this subject and decide for yourself.

Wednesday, September 12th • 10:15 - 11:00 am

IMS & Fixed/Mobile Convergence

The promise of IMS is that it offers a standard platform for the delivery of multiple services, which may require separate networks for fixed, mobile and data services. Some IMS-based applications, FMC for example, appear to be sure winners, with consumers signaling that the cost savings and productivity enhancements of FMC are significant enough to generate 100 million users within five years. This raises the question of whether providers should build out a fully compliant IMS architecture before launching any new services, or whether they should take an incremental approach by deploying FMC first, and evolving to a full IMS deployment as the market proves ready and the business case becomes more clear. So it's the perfect chicken and egg scenario. Come to this session to learn what the fuss is all about and find out what comes first: IMS or FMC?

Wednesday, September 12th • 12:45 - 1:30 pm

The Complementary Roles of IMS and UMA

Designed originally to enable the rapid development and introduction of multimedia services by mobile operators, the 3GPP IP Multimedia Subsystem (IMS) standard has sparked a large amount of operator, vendor, and media interest. Unlicensed Mobile Access (UMA) is an access layer technology that works within the 3GPP IMS framework to enable mobile handsets to leverage alternative IP-based access networks to reach core network services. In addition to service access, UMA manages the handover of active sessions between access networks, using the same proven mobility mechanisms used to manage handovers between cell towers in the macro network. That means UMA provides access not only to emerging IMS services, but also to all existing circuit- and packet-based services, which currently comprise the vast majority of mobile operator revenues. This session will explore how UMA complements IMS in more depth. Topics of interest include:

- How the service/control layer, access layer, and device layers of IMS interwork
- How UMA enables access to and mobility of all mobile services
- The I-WLAN standard for mobile handsets and its relationship to UMA
- The evolution of UMA in IMS frameworks

Wednesday, September 12th • 1:45 - 2:30 pm

Migration to IMS

IMS is a promising IP based architecture for the delivery of multimedia applications and the building block for fixed/mobile convergence services. But, operators and service providers are cautiously and slowly embracing IMS, due to the number of network elements needed to adhere perfectly to the IMS model, and the associated investment in new equipment. Most carriers are looking to leverage the value of their existing equipment and minimize CAPEX and OPEX. But, what can they do today? Fortunately, IMS is also designed to overlay existing TDM networks, with enough flexibility to accommodate equipment that doesn't perfectly match the model. Right now, service providers can implement a SIP-based, IMS-like architecture using some IMS-compliant equipment yet still offer new services at lower cost and lower risk. The key is SIP-based services. As competition heats up, service providers need to leverage as much efficiency as possible from their existing network as they continue the migration from voice-only TDM based services to multimedia VoIP services.

Wednesday, September 12th • 2:45 - 3:30 pm

Testing IMS Networks

As we move to a more standardized IMS environment, it is easy to fall into the trap of thinking that standardization will decrease the requirement to test. The thinking goes that once the standard is set, one would only need to conduct product testing to see if the equipment meets the standard. However, a standardized IMS environment will actually increase the testing imperative.

An IMS network is a distributed multi-vendor environment that will be delivering a converged, media-rich service offering. The need to conduct regular and continued interoperability testing will be paramount to ensuring both the successful deployment and support of the network, as well as the quality of experience (QoE) for the end users of the services that are being delivered. Come to this session to find out more.

Conference attendees testing the latest IP communications solutions at ITEXPO East 2007 in Ft. Lauderdale, Florida.

CALL CENTER 2.0

Monday, September 10th • 9:00 - 9:45 am

Benefits of an IP Enabled Contact Center

Today's call center is more than just how well you measure up on average time to answer, volume of calls an agent takes, etc… It's about the whole of the customer experience - including providing the customer access to the right agent with the right skill set and making sure that agent has access to the necessary supporting skilled resources in the rest of the organization. IP technology enables you to cost effectively bring to bear - in one unified customer interaction center - the necessary skilled agents that may be dispersed across satellite offices. It empowers you with resource management options such as being able to offer perhaps a healthier, yet secure and managed work-at-home environment. It offers the ability to extend the reach of your core contact center staff back into the skills base in the rest of your organization with integrated presence, availability and collaboration. All this helps leverage skilled resources that can quickly and proficiently answer to your customer's needs - bringing about a customer experience that is second to none.

Monday, September 10th • 10:00 - 10:45 am

Transition Your Contact Center to IP

The attractions for implementing VoIP-based call centers are many, not the least being tremendous cost savings to the organization running the call center. However, many believe VoIP quality is still not nearly as stable or dependable as traditional TDM-based offerings. Additionally, many incoming contact center calls begin on PSTN and jump to a VoIP network increasing the requirement to manage the end-to-end experience customers may by receiving at any time. Still the shift to IP-based contact center solutions is inexorable. This session will offer attendees a series of best practices and standards to leverage when delivering a superior quality of experience to your call center customers as you transition to VoIP.

Monday, September 10th • 11:00 - 11:45 am

Develop an Effective IP Strategy

Over the next two years, it's expected that 82 percent of contact centers will be running on IP telephony infrastructures. If you're in the process of implementing, considering implementation, or want to make sure you're getting the most out of your existing investment, how do you go about it?

This session will address the key features of IP technology, how it should be approached by businesses of all sizes, and the vast range of measurable benefits IP can generate in the contact center. The speakers will also address the added-value of the dynamic contact center and its capabilities that help companies manage fluctuating contact center variables and conditions, optimizes cost, quality and revenue goals.

Monday, September 10th • 12:30 - 1:15 pm

Uncover the Value of Speech Analytics

When companies calculate the acquisition costs and lifetime value of a customer, it quickly becomes clear that efforts to reduce churn and increase overall retention are key for maintaining consistent revenue from customers. Speech analytics has become an important tool in uncovering valuable business intelligence from customer service and support calls and identifying recurring customer issues before they become problems or potential revenue loss. The presentation will show how to calculate the quantifiable value of speech analytics, highlighting how some of the nation's largest call centers have used the technology to reduce their churn, increase customer satisfaction leading to increased value from customers. Because understanding ROI of speech analytics is key to the decision process, the presentation will show attendees how they can calculate the value of speech analytics and realize a return on investment and long term revenue savings and cost reductions.

Monday, September 10th • 1:30 - 2:15 pm

Help Yourself! A Look at Web Self-Service

Although an overwhelming majority of large companies have invested significant sums of money into the customer service areas of their Web sites, the fact remains that most Web self-service solutions do not have the functionality and ease-of-use consumers require. As a result, most consumers become frustrated using these tools, and end up relying on already overburdened call center agents to resolve their problems.

This session will assist companies in understanding what customers hope to achieve when utilizing real-time self-service tools, and how a combination of Web site design, functionality, and user-friendly interfaces can play a part in help promote real-time self-service and problem resolution, thus enhancing customer service while reducing contact center congestion

Monday, September 10th • 2:30 - 3:15 pm

Proactive Support: A New Paradigm In Managing Customer Relationships

Consumer brand loyalty is declining across vertical industries such as healthcare, financial services and telecommunications. Accordingly, ensuring maximum customer satisfaction and effective management of customer relationships haven clearly become top organizations imperatives. One of today's best-kept secrets is that service, support and maintenance revenues are the primary drivers of economic growth and customer relationship management. In fact, in enterprise software, it accounts for 70% of total corporate revenue growth and 60% of Earnings per Share (EPS). At the same time, however, they are looking to reduce the cost of support, which accounts for almost 50% of a company's IT budget (on average). In addition, to

CALL CENTER 2.0

meet the support needs of their clients without increasing the latter's expenses, support providers are turning to automation technologies that enable such capabilities as proactive identification and resolution of problems, remote access systems and delivery of fixes.

In this presentation, the speakers will address leveraging a proactive support solution, in order to increase customer service levels, reduce SLA penalty payments, significantly reduce the number of customer complaint and support calls received, and service customer needs with a much higher response time.

Green Technology Featured Session

Tuesday, September 11th • 8:00 - 8:45 am

Video in the Call Center

With the emergence of wireless conversational video phones, the long-awaited video call center is poised to take off in a big way. What video applications have early momentum in North America? How do you get your video enabled IVR, call center or portal tied into the North American cellular network? And what does the shift from traditional voice-based call centers to multimedia call centers mean in terms of an expanded customer experience and a new set of challenges to the enterprise and service provider? Come to this session and find out what the buzz is all about when it comes to Video in the call center.

Tuesday, September 11th • 8:45 - 9:45 am

Call Recording: Benefits & Challenges

Call recording systems have become an essential component for managing call center performance. VoIP offers many benefits to the call center, however, it is crucial that the same high standards we have grown accustomed to when recording calls in a traditional telephony environment be maintained in the VoIP environment. This session is designed to provide call center managers, operational personnel and decision makers with the level of understanding needed to ensure appropriate call recording capabilities are take into account during a VoIP migration or conversion. Among the critical issues to be discussed are:

- The differences between recording in traditional and VoIP telephony environments
- The pros and cons of 'passive' versus 'active' VoIP recording methods
- Aligning the choice of VoIP recording architecture with business needs
- Specifics of recording in leading VoIP vendor environments

Tuesday, September 11th • 1:30 - 2:15 pm

Call Center Urban Myths

There are many misunderstandings surrounding VoIP and its deployment and daily use within the contact center. Come here the real story on VoIP in the contact center - the successes you can achieve and the common pitfalls to avoid.

Green Technology Featured Session

Tuesday, September 11th • 2:30 - 3:15 pm

Beyond Boundaries: Exploring the Virtual Call Center

A virtual contact center can help your business break down boundaries to offer exceptional versatility in building an agile business infrastructure that allows your company to employ and retain highly skilled individuals wherever they are, quickly respond to dynamic market conditions and lower operating costs through a converged architecture. Understand how you can build a virtual contact center that meets your specific business requirements to eliminate walls and geographic limitations. Your customers will receive enhanced service because their requests are handled more promptly and directly by the most appropriate available person. And, your representatives and managers gain more variety and flexibility in their work environments leading to higher morale and lower turnover. Come to this session and learn all about the virtual call center.

Tuesday, September 11th • 3:30 - 4:15 pm

Leveraging Hosted PBX Services in Contact Centers

As small to medium sized businesses continue to adopted hosted IP PBX services, challenges still remain in the area of feature equivalency with traditional premise based solutions. This feature equivalency challenge introduces a barrier to market adoption and potentially increases customer churn and creates satisfaction issues. One area of specific concern is the ability for the hosted PBX to support the needs of small call centers. Businesses require call center functions (ACD queues and overflow facilities) that are well integrated with traditional IP PBX functions (find-me/follow-me, remote office). The call center functions of IP PBXs are limited. Applications such as recording, auto-dialing, web-based monitoring, and call center statistics are lacking. In this session, we will explore not only methodologies to resolve this equivalency challenge but also investigate mechanisms to truly enhance the hosted experience with integration with complimentary third party hosted services, such as hosted CRM, automatic dialers, and follow the sun customer service facilities.

CALL CENTER 2.0

Tuesday, September 11th • 4:30 - 5:15 pm

SaaS Panel: Opportunities & Challenges

The call center today is a very different entity than it was in years past. Traditionally, needs were adjusted to fit with the physical call center's rigid structure - size and physical location restrictions meant business was conducted in one way and one way only. Today, call centers are being built to easily alter to not only meet, but anticipate, organizations' needs. Via call center solutions capabilities being delivered via software-as-a-service, companies with flexible contact center needs can scale up and down as needed, can locate resources anywhere in the world but conduct contact center business as a unified whole, can add capabilities and capacity in minutes, and can even design and customize their own solutions according to their very unique methods and needs. Not only can companies with flexible contact center requirements build their perfect call centers via SaaS, they can do it with little or no upfront capital expenditures. Come learn how SaaS for the call center benefits customer service organizations of all sizes: from large enterprises down to just a few agents.

Wednesday, September 12th • 8:15 - 10:00 am

IP Contact Center Shootout

Come hear several industry leaders explain and debate the relative merits of their IP Contact Center solutions. Fashioned after ITEXPO's successful long-running IP PBX Shootout, this double session promises to be a lively, engaging session where industry leaders candidly discuss their products and their competition. This unique opportunity enables you to get live information directly from the "horses' mouths" as you will be given a the chance to ask the panel your own insightful questions. Truly a can't-miss session.

Wednesday, September 12th • 10:15 - 11:00 am

Do Advancements in Mobile CRM Make the Laptop Obsolete?

Imagine a world where field-based employees are given a wireless device instead of a laptop computer. That day may be closer than you think. These employees will still need the same easy access to their CRM system from their mobile device, as they enjoyed from their laptop computers. How then will field-based staff adjust to a new way of accessing their customer information? For these employees, the rate at which they adopt CRM software technologies will depend on the experience they have using it with their device. In other words, the mobile device will impact their adoption rate of the CRM solution. In this session, we will explore the business impact that advancements in mobile technologies have had on how end users adopt CRM solutions. In addition, learn how the employee adoption rate of a CRM solution can affect an SMB's top business objectives - namely to increase revenue, sales effectiveness, market share and ultimately create a better customer experience.

Wednesday, September 12th • 12:45 - 1:30 pm

Customer Analytics: Strategies for Success

Companies gather customer data from a range of touchpoints, including purchase history, Web browsing, customer support records, and of course the call center. Yet effectively analyzing this data in ways that can improve future customer interactions is the key. What is best call center strategy for a given customer, in light of his or her preferences, behaviors, purchases, and online activity? What product package should be offered, and how should it be presented? Most importantly, how does this customer data fit into - and inform on a continuing, dynamic basis - the company's overall marketing program?

This presentation will discuss the very latest strategies, techniques, and technologies for analyzing customer data and how companies use it to drive new levels of call center success. We will look at how customer analytics and enterprise marketing management can complement existing customer relationship management practices to deliver more personal and compelling offers throughout the customer lifecycle and across all customer touchpoints.

Wednesday, September 12th • 1:45 - 2:30 am

Open Source: Too Good to be True?

This presentation will go over the effects of using open source VoIP technologies in the contact center, including the reduction in overall costs and dependence on outside firms as well as the increase in control and customization with existing internal systems.

Topics covered will include a comparison of open source and proprietary options at several levels from agent telephones and computers to servers and telephony systems. Also, several real-world examples of how enterprise-level contact centers are using open source to varying degrees to improve their business.

Wednesday, September 12th • 2:45 - 3:30 pm

Welcome to the Era of Care 2.0

Care 2.0 is about optimizing interactions in an emerging and even staggeringly different "care" environment. Yesterday's standards in serving a company's "customers" are quickly being eclipsed by the demands of a population of consumers, partners and employees who are increasingly influenced by communities, who are increasingly mobile, and who are seeking goods and services in an environment where the time between innovation and commoditization is ever shorter. Retaining, satisfying and efficiently servicing "customers" in the era of Care 2.0 requires new capabilities to support, communicate with and understand "customers." This presentation will address what is needed to realize Care 2.0 success.

FIERCEMARKETS' IPTV EVOLUTION 2007

Monday, September 10th

SEPARATE FEE REQUIRED

Making a Business from IPTV

You have an opportunity to compete in this emerging and growing market. The IPTV challenge for the telecom industry is to deliver compelling services at competitive prices, yet with a return on investment that improves your bottom line.

Serious Answers to Mounting Questions

IPTV Evolution 2007 is the place to conduct your research and find practical answers in a unique panel discussion format that puts you face-to-face with peers and industry leaders. Gain insight from all players in the value chain – set-top box makers, content providers, equipment vendors, standards bodies, and service providers.

9:05 a.m.-9:45 a.m.

Keynote Address

Hear first hand how the leading service provider in the IPTV space has designed its business model. Discover how it's overcoming the technical challenges and barriers to entry into the pay TV space.

9:45 a.m.-10:30 a.m.

IPTV or Online Video: What's the Next Generation of TV?

As telecoms slowly roll out their television services to markets scattered throughout the U.S., online video services are effectively stealing eyeballs from the once impervious TV screen. IPTV providers need to demonstrate to consumers why they should pay for an alternative pay TV service when they can on demand the video they want online.

11:00 a.m. – 11:45 a.m.

IPTV Bill of Rights

Last year franchise rights were top of mind for the IPTV industry, and as legislation changes that process IPTV providers need to understand how the new process will affect their service rollout. Other legal issues like content access and acquisition need to be mastered by budding IPTV providers. What other regulatory or legal issues will the telcos face in the year ahead?

11:45 a.m.-12:30 p.m.

Monetizing Applications Beyond TV

IPTV service providers understand that their networks provide for more interactivity between TV viewer and service provider than ever before, that's why many are looking to offer services like gaming, embedded caller ID, interactive shopping services as well as mobile extensions to their core offerings. While it sounds like a throwback to 1999, these interactive applications could prove lucrative for the leading IPTV service providers. Discover which interactive applications will make the cut.

1:30 p.m.-2:15 p.m.

Security and QoS

Glitches in network rollouts and heated licensing negotiations with content providers have slowed down the growth of IPTV across the U.S. during the past year. The hot button issues of content security and network scalability will be tackled in this session. Join us for these presentations and learn best practices from security and QoS experts in the IPTV sector.

2:15 p.m.-3:00 p.m.

Lessons Learned from Tier 2 and Tier 3 IPTV Deployments

Hear from tier 2 IPTV service providers who launched IPTV services early on in the game. What types of services have proven the most effective? Do they compete with cable on price or content offerings? How has bundling helped win over potential subscribers? Attend this session to tap their pioneering experience and hear the real world case studies.

3:00 p.m.-3:30 p.m.

Content Provider Roundtable: The IPTV Opportunity

While the driving force behind the rollout of IPTV services across the U.S. are the telcos, who are looking to stay competitive with the ever increasing services from cable companies, content providers also see IPTV as a unique opportunity for their viewers. Attend this session to understand how IPTV will change the way content is developed, delivered and viewed from a content provider's perspective.

3:30 p.m.-4:15 p.m

ISO the perfect Electronic Programming Guide

Users are increasingly willing to pay a premium for a better user experience, which makes the electronic programming guide (EPG) all the more essential to a successful IPTV rollout. Join this panel to drill down into the subject of the EPG, including best practices for its design, functionality as well as the research that supports its all-importance. In age of "long tail" content aggregation, users need a way to easily navigate through the sea of video now available to them. Learn how to enable your subscribers to do just that.

4:15 p.m.-5:00 p.m.

Closing Keynote

Hear one of the top directors of content acquisition in the IPTV business outline best practices for content providers looking to forge content licensing deals with service providers, as well as the big service providers' views towards user-generated content, interactive programming, VOD, place-shifting, time-shifting, etc.

RESELLER SOLUTIONS DAY

How To Make Money Selling VoIP

Monday, September 10th • 10:00 - 11:45 am

Presented by: Interactive Intelligence

How To Make Money Selling VoIP

TMC president Rich Tehrani, ABP president Robert Messer, and other industry experts will draw on over 25 years of experience in the telecom market to help you take advantage of the VoIP market explosion. Learn how to "talk-the-talk," how to bundle services to create more attractive offerings, and how to sell VoIP as an add-on to existing infrastructure.

Additional session to be announced.

Check www.itexpo.com for details.

Reseller Live!

Monday, Sept. 10th • 12:30 - 3:15 pm

The Enterprise Communications Association (ECA, www.encomm.org) will be presenting its very successful panel format, Reseller Live.

This session was first introduced at ITEXPO West 2005. Topics cover all aspects of converged IP sales including security, FoIP, hosted services, Software as a Service (SaaS), IP contact center operations and other key subject matter. The session is designed to maximize reseller participation so come prepared with questions for the panelists.

Also covered will be the panelist's consensus of the Top 5 Reasons to Implement VoIP and the Top 5 Reasons customers may hesitate to implement immediately.

Your participation begins now - submit your suggestions addressing:

A. The #1 reason for customer hesitation or resistance to converged IP.
B. The #1 closer to clinch the sale (price, features, time is now).
C. The most important resource a vendor can provide to help you increase VoIP and Converged IP sales.

The panel will review your submissions and select the most frequent and/or innovative suggestions for full discussion.

Please submit your content suggestions to:
maxschroeder@tmcnet.com

Supported By: Enterprise Communications Association, TMC

DISASTER PREPAREDNESS WORKSHOP

Monday, September 10th • 9:00 - 11:00 am

National disasters - hurricanes, tornados, winter storms, - have demonstrated repeatedly that too many companies do not have an effective plan in place to ensure business continuity. However, although major disasters command a lot of attention from the media, they are rare and generally affect a small percentage of the total population. It's the smaller calamities, such as power outages, fire, or local floods that are far more common and affect ill-prepared businesses every single day.

Today's technologies allow organizations to plan and implement solutions that are safe, solid, and affordable to ensure continuity of business in the case of a disaster of any size. This workshop will focus on the use of converged IP solutions to seamlessly transfer vital functions and back up critical data, preventing loss and minimizing downtime during a business interruption whether caused by nature or man.

This 2-hour workshop will host a selection of experienced panelists to address the most important issue for any enterprise - how to avoid a serious interruption of business operations. Panelists will include application vendors, resellers, and managed services providers from the DPCF participating companies. Audience participation is strongly encouraged, so come prepared with questions for the panelists.

A Disaster Planning Forum Initiative Sponsored By:

Enterprise Communications Association, DPCF Disaster Preparedness Communications Forum, TMC

HOW TO PROFIT FROM SELLING HOSTED VOIP IN THE SMB MARKET

Tuesday, September 11th • 9:00 - 11:00 am

More businesses than ever are outsourcing their technology purchasing decisions to trusted resellers and solutions providers who can help them take advantage of the global migration to Voice over IP. Offering small businesses an enterprise grade voice solution allows you to enter new market segments, differentiate your product offerings, and stay ahead of the competition in the rapidly moving world of broadband communications. IT consultants, telecom vendors, equipment manufacturers, VARs, ISPs, and system integrators can now partner with hosted PBX solution providers to achieve new levels of revenue growth and client success. Whether your business focuses on one-time sales or total customer ownership and support, selling a hosted PBX allows your business to profitably offer an innovative, reliable and cost-effective business communications solution.

It is unmistakable that Voice over IP and the hosted model are the future of business telephony. Maximize cash flow with upfront payments and residual commissions paid out for the life of an account. Your company cannot afford to miss out on this revenue generating opportunity. Learn how to choose a total solution partner who provides local, long distance, and toll free networks, a competitive feature set, web-based administration, and marketing and billing support. The session will be led by NetZip and Vocalocity co-founder, Phil Hill, who will speak about the skills and techniques needed to effectively close deals in this competitive marketplace.

Speakers: Phil Hill, Co-Founder & President, Vocalocity
Brian Koles, Channel Manager, Vocalocity
Cathy Sutej, Marketing Manager, Vocalocity

SERVICE PROVIDER SHOOTOUT

Tuesday, September 11, 2007 - 8:45 to 9:45 am

Hear the industry's leading experts in a moderated panel discussion aimed at exploring the market and finding out exactly where we stand today. Get perspectives from the leading service providers exploring next generation solutions, including the latest developments, a glimpse into the future, and some real-life implementation tales that you won't want to miss. Topics will range to include net neutrality, the latest government regulations, competitive pressures, the advent of fixed/mobile convergence and IMS (IP Multimedia Subsystem), wireless considerations such as WiFi and WiMAX, IPTV, and Triple Play strategies, and so much more. It's an exciting time — and a challenging time — to be a service provider in today's climate. Come to this keynote-level session to hear more about this market from the service providers who are living it every day. Attendees are encouraged to bring their questions and we'll bring the industry leaders who are best positioned to provide the answers.

Panelists include:

8x8 INC. EarthLink WORLDGATE COVAD GLOBAL TOUCH TELECOM Calling the world home

SIP TRUNKING WORKSHOP

Realizing Rapid ROI Today

Learn how SIP trunking can maximize the ROI from your IP PBX investment in these informative seminars with Ingate® Systems. SIP trunking rapidly reduces costs by leveraging SIP, eliminating redundant network connections and by allowing the Internet telephony service provider (ITSP) to handle PSTN termination.

Join Ingate, leading IP PBX vendors, and SIP trunking service providers at INTERNET TELEPHONY Conference & EXPO.

You'll learn:

- SIP trunking: benefits, issues, and opportunities
- How SIP trunking can maximize the Return on Investment for your IP PBX
- Installation roadmap, solutions for interoperability, etc.
- An introduction to SIP Trunking service providers, their plans, and requirements
- A complete tool kit to ease the installation of SIP trunks

NEW SESSIONS -- Tracks will be expanded to include topics on SIP architecture and security, issues critical to successful deployments of realtime communications, including VoIP.

SIP trunks reduce costs, as they eliminate the need to purchase local PSTN gateways, costly ISDN BRIs (Basic Rate Interfaces) or PRIs (Primary Rate Interfaces).

Join us for these informative seminars. FREE for all attendees.

- **Monday, September 10 - SIP Trunking Seminar Series**
- **Tuesday, September 11 - SIP Architecture and Security**

For details visit::
www.ingate.com/SIP_Trunking_seminar.php

VOICE PEERING WORKSHOP - FREE FOR ENTERPRISES AND SERVICE PROVIDERS

The Voice Peering Fabric (VPF), the preferred marketplace for carriers and enterprises to exchange voice, video and telephony services, is pleased to organize another distinctive Voice Peering Workshop at ITEXPO West 2007!

This workshop brings to ITEXPO attendees a team of experts from the telecom, hardware and software industries. Their business strategies and technical insight will be the answer to your questions and concerns relating to voice/video routing and interconnections. The workshop panel discussions present the state of direct peering, putting you on track to harness the full potential of IP communications.

8:15am - 9:00am

Voice Peering 101

Speaker: Hunter Newby, Chief Strategy Officer, The telx Group

vpf™ The Voice Peering Fabric

9:15am - 10:00am

Inside the Voice Peering Fabric (VPF)

Speaker: Shrihari Pandit, President & CEO, Stealth Communications

More then 130 billion minutes of VoIP traffic are flowing through peering arrangements on the VPF annually, bypassing legacy switched networks and correspondent relationships. Discover the elements within that have attracted leading organizations worldwide to participate in this new marketplace:

- What lies within the core of the peering fabric;
- Where the peering fabric reaches;
- Why the shift of VoIP to a private voice Internet;
- How bi-lateral and multi-lateral (ENUM/SRV) peering relationships function;

10:15am - 11:00am

Peering and Transcoding with Asterisk on the VPF

Speaker: Kevin Fleming, Director of Software Technologies, Digium

Asterisk is being deployed more often as critical infrastructure in enterprise and carrier networks. This session will focus on how Asterisk can be used to facilitate VoIP peering using industry-standards (and Asterisk-specific) protocols including ENUM, SRV, ITAD and DUNDi.

In addition, we will also discuss how Asterisk can be deployed as a high-performance 'transcoding appliance'. Transcoding is often required when connecting calls between peering networks that use common (and not-so-common) voice codec's.

Confirmed speaker roster as of May 30, 2007.
Please check www.itexpo.com frequently for updates and for speakers in specific sessions.

8x8 Inc.	Sr. Director of Sales
8x8, Inc.	Chairman & CEO
8x8, Inc.	VP Marketing and Sales
a la Mobile, Inc.	CTO
AccessLine Communications	CTO
Acme Packet	Director
Aculab	Product Manager
Aculab	Head of Professional Services
Agilent	IP Market Segment Manager
Airwide Solutions	CTO
Alcatel-Lucent	Director, Convergence
Allworx	Executive Vice President
Angel.com	President and CEO
Aperio CI	Chairman & CEO
Applied Voice & Speech Technologies	Director
Arlinx, Inc.	CEO
Aruba Networks	VoWLAN Product Director
Aspect Software	Director
Astute Solutions	Managing Consultant
AT&T	Senior Vice President
AudioCodes	Director of Business Dev.
Bandwidth	Director of Channel Programs
Bingham McCutchen, LLP	Counsel
BlueNote Networks	Director, Market Development
Bluenote Networks	Director
Bluesocket, Inc.	CEO
Broadvox	Vice President
CallMiner	SVP & Co-Founder
Cantata Technology	Senior Product Manager
Cisco	Manager, Mobility Solutions
Cisco	Distinguished Engineer
Cisco	Sr. Systems Marketing Manager
Cisco	Sr. Product Manager, Mobile UC
Citel	Vice President
Codian Videoconferencing	General Manager
Cognio	CTO
CommuniGate Systems	Vice President
Comverse	Vice President
Connexon Telecom Inc.	Director
Contactual, Inc.	President and CEO
CosmoCom	Manager
CosmoCom	VP & CIO
Covad	Vice President
Covergence	Founder, VP Engineering and CTO
CRG West	Managing Director
Cybeyond	Marketing Director
Cypress Communications	Executive Vice President
Dash911	CEO
deltathree, Inc.	Director
Dialexia	CTO/President
Dialogic Corp.	President and CEO
Dialogic Corp.	Enterprise Marketing Manager
Dialogic Corp.	Applications Manager
Dialogic Corp.	Product Line Manager
Digium	President
Digium	Director of Software Technologies
Ditech	Vice President
DiVitas Networks	President/CEO/Founder
EarthLink	Vice President
EarthLink Wi-Fi Phone	Director
eflo.net Consulting	President
Endeavor Telecom	Executive Vice President
Ensim Corporation	Vice President
Envox Worldwide	Vice President
Ericsson North America	Vice President
FaxBack	President
FirstHand Technologies	President & CEO
Fonality	Vice President
Frost & Sullivan	Principal Analyst
Genesys Telecommunications Labs	Director
Getronics	Practice Director
Global IP Solutions	CEO & President
GlobalTouch Telecom	CEO
GlobalTouch Telecom	Vice President
HBF Group Inc./911 Services	Executive Vice President
HelloSoft Inc.	Vice President
Highdeal Inc.	President
Hughes Systique Corporation (HSC)	Director, IMS
IBM Global Technology Services	Director
IBM Software Solutions	Voice Evangelist
InfoVista	Senior Product Marketing Manager
Ingate Systems	President
Inter-Tel	Director
Inter-Tel	Director of Engineering
Inter-Tel	Chief Executive Officer
Inter-Tel	Strategic Solutions Engineer
Interactive Intelligence	CEO
Intervoice Inc.	Vice President
iotum	CEO
IP Unity Glenayre	Principal Engineer 2, Office of CTO
IP Unity Glenayre	Senior Vice President
IVR Technologies, Inc.	Vice President
IXIA	Director of Wireless Strategy
Juniper Networks	Director of Product Management
Juniper Networks	Product Manager
Keynote Systems, Inc.	Sr Product Manager
Kineto Wireless	Associate Vice President
Kiyon, Inc.	Chairman & CEO
KoolSpan, Inc.	Vice President
Lampert & O'Connor, P.C.	Counsel
Legerity, Inc.	Senior Segment Marketing Manager
Level 3 Communications	Director
LiveOps, Inc.	CTO
Lucent Technologies	Sr. Financial Architect
M5 Networks	President & CEO
MASERGY	CTO
Maximizer Software Inc.	Executive Vice President
Meru Networks	Vice President
Microsoft	Compliance Manager
MOBIVOX	CEO
Natural Convergence	CEO
NeoPhonetics	Co-Founder & CEO
NextNine Inc.	CEO
NexTone Communications	CTO & Founder
NICE Systems	Senior Solutions Consultant
Nortel	Vice President & GM
Nortel	Leader - Multimedia Applications Marketing
Nortel	Multimedia Applications - Product Marketing
Nortel	Director
Nortel Networks, Enterprise Networks	CTO & VP
Nuance Communications	Vice President & GM
Octasic	Director
Ojo (Worldgate)	CEO
ooVoo	CEO
Pactolus Communications Software	Vice President
Pandora Networks	President & CEO, Founder
Parlano	CTO
Perimeter eSecurity	Vice President
Pingtel	Senior Vice President
Polycom	Director
Polycom	Vice President
Polycom Inc.	Senior Technology Advisor
Primal Solutions	Vice President
Quintum Technologies	Vice President
RadiSys	Vice President
RADVISION	Vice President
RNK Communications	CEO
Samsung Business Comm Systems	Director
Sangoma Technologies	Vice President
ShoreTel	Vice President
Siemens Communications, Inc.	Director
Siemens Communications, Inc.	Senior Strategist
SightSpeed	CEO
snom Technologies	Founder & CEO
SolaCom Technologies Inc.	Vice President
Solegy	CEO & Founder
SoundBite Communications	Director
Speakeasy	Chief Marketing Officer
SpectraLink Corporation	Vice President
Sphere Communications	Senior Vice President
Spirent Communications	Director
SPIRIT DSP	Vice President
StarTek	TBA
SugarCRM	Chairman, CEO & Co-founder
SuiteCommute, LLC.	President
Surf Communication Solutions	Vice President
Sylantro Sytems	Director
SyncVoice Communications, Inc.	Founder
TeamQuest	Best Practices Manager
TECHtionary	CEO
Tekelec	Vice President
Telephony2	President & CEO
Telrex	Director of Marketing
telx	Chief Strategy Officer
Toshiba Digital Solutions Division	Product Manager
Transera Communications	President/CEO/Co-Founder
TransNexus, Inc.	CEO
Trolltech	CTO
Ubiquity Software	CTO
UCN	Vice President
Ulticom	Chief Technology and Product Strategist
Unica Corporation	Director
UTStarcom Inc.	Senior Manager
VoEX	Director of Product Management
VoiceObjects	CTO
VoIP Logic	CEO
Xconnect	CEO

** For reasons beyond control of show management, speaker list subject to change. Check www.ITEXPO.com frequently for updates.*

On-Site Registration Hours

Monday - September 10 .....7:30 am - 8:00 pm
Tuesday - September 11.....7:00 am - 6:00 pm
Wednesday - September 12 .....7:30 am - 2:30 pm

Exhibit Hall Hours

Monday - September 10 .....4:15 pm - 8:00 pm
Tuesday - September 11.....11:00 am - 6:00 pm

Conference Session Times*

Monday - September 10 .....9:00 am - 4:15 pm
Tuesday - September 11.....8:00 am - 5:15 pm
Wednesday - September 12 .....8:15 am - 3:30 pm
**Conference fees required for admission*

Hotel Information

Wilshire Grand Hotel Expected to Sell Out Weeks Before Event Begins

With over 200 exhibitors and as many as 7,000 attendees expected, rooms at the official show hotel
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*Your Guarantee:

If you do not feel the sessions you attend made you better prepared to tackle your VoIP project than you were when you arrived, stop by the registration counter at the show, complete a short form, and we'll issue you a free pass for any future INTERNET TELEPHONY conference. (No requests honored after the conference ends.)

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- All Keynotes and special panel discussions.
- All networking receptions

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1. **Online:** www.itexpo.com
2. **Phone:** Call Frank Coppola (203) 852-6800 ext. 131
3. **Fax:** (203) 866-3326
4. **Mail:** Send your registration form to:
   INTERNET TELEPHONY® Conference & EXPO West 2007
   TMC
   One Technology Plaza
   Norwalk, CT 06854 USA

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1 PICK THE PLAN THAT BEST MEETS YOUR NEEDS

	Thru 8/3/07	After 8/3/07	Select Days
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Access to all conference events, all 3 days, for up to 5 people			
❑ **Conference SUPERPass**	**$2,195**	**$2,395***	☒ Mon ☒ Tues ☒ Weds
Access to all conference events, all 3 days, including IPTV Evolution Workshop			
❑ **Platinum Conference Pass**	**$1,595**	**$1,895***	☒ Mon ☒ Tues ☒ Weds
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❑ **Gold Conference Pass**	**$1,295**	**$1,595***	❑ Mon ❑ Tues ❑ Weds
Access to all INTERNET TELEPHONY, IMS Summit, Call Center 2.0 conference events, any 2 days			
❑ **Silver Conference Pass**	**$1,095**	**$1,395***	❑ Mon ❑ Tues ❑ Weds
Access to all INTERNET TELEPHONY, IMS Summit, Call Center 2.0 conference events, any 1 day			
❑ **IPTV Evolution Workshop Pass**	**$795**	**$995***	☒ Mon
Access to FierceMarkets' IPTV Evolution Workshop, plus keynotes, exhibits			
❑ **FREE Reseller Solutions Day VIP Pass**	**FREE**	**FREE Online**	☒ Mon ☒ Tues
Reseller Day, Keynotes, free workshops and panel sessions, receptions, Exhibit Hall		$50 onsite fee applies	
❑ **FREE VIP Exhibit Hall PLUS Pass**	**FREE**	**FREE Online**	☒ Mon ☒ Tues
Keynotes, free workshops, free panel sessions, receptions, Exhibit Hall		$50 onsite fee applies	

2 ATTENDEE INFORMATION

NAME _____ TITLE _____ COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____ COUNTRY _____

PHONE _____ FAX _____ E-MAIL _____ (REQUIRED)

3 PAYMENT INFORMATION

Faxed Registrations Must Include A Valid Credit Card. Total Amount Due: $_____ (Payable in U.S. dollars drawn on a U.S. bank.)

❑ Check Enclosed (CT residents add 6% sales tax. Make checks payable to: TMC.) Charge My: ❑ AmEx ❑ MasterCard ❑ VISA

Card #: _____ Exp. Date:_____ Signature:_____
(required)

CANCELLATION POLICY:

Full payment is required prior to admittance to the conference. Registrations are transferable and non-refundable. Registrants may have a dollar-for-dollar credit towards another TMC conference. Credit must be used within two years from original registration date. Program and speakers are subject to change without notice. TMC® reserves the right to use attendee company names, titles, images, and photos for future promotions.

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Date (Required)

INTERNET TELEPHONY

4 PLEASE ANSWER ALL QUESTIONS. INCOMPLETE FORMS CANNOT BE PROCESSED.

1. BUSINESS TYPE (CHECK ONE)

NETWORK SERVICE PROVIDER/CARRIER INDUSTRY

- ☐ 1. Network/System Integrator
- ☐ 14. Next-Gen Telco/ITSP
- ☐ 15. CLEC
- ☐ 16. Integrated Comms. Provider (ICP)
- ☐ 17. Telco/RBOC/IXC/Long Distance
- ☐ 18. ISP
- ☐ 19. Wireless/PCS
- ☐ 20. Cable
- ☐ 21. Application Service Provider
- ☐ 22. PTT
- ☐ 45. BLEC/MDU LEC
- ☐ 46. ILEC
- ☐ 23. Other (specify)_____

VoIP/TELEPHONY INDUSTRY

- ☐ 8. Telecom Developer
- ☐ 9. Manufacturer
- ☐ 47. Reseller/Retailer/Wholesaler/VAR/VAD
- ☐ 10. Distributor
- ☐ 11. Interconnect
- ☐ 12. Consulting
- ☐ 13. Other (specify)_____

GENERAL INDUSTRIES

- ☐ 24. Manufacturing/Software Developer
- ☐ 25. Business Service/Consulting/ Consumer Service/Non-Profit/Trade Assn.
- ☐ 26. Government
- ☐ 27. Wholesale/Distribution/Retail/ E-commerce/E-business
- ☐ 28. Transportation/Travel/Recreation/ Entertainment
- ☐ 29. Utilities
- ☐ 30. Finance/Banking
- ☐ 31. Insurance
- ☐ 32. Hospitality
- ☐ 33. Healthcare/Medical
- ☐ 34. Real Estate
- ☐ 35. Catalog Marketing/Publishing
- ☐ 36. Marketing/Market Research
- ☐ 38. Advertising/Public Relations
- ☐ 39. Teleservices Agency
- ☐ 40. College/University/Education
- ☐ 42. Other Professional/Business Services (specify) _____
- ☐ 41. OTHER (specify)_____

2. JOB FUNCTION (CHECK ONE)

CORPORATE MANAGEMENT

- ☐ 7. Corporate Management (CFO/CEO/Pres., etc.)
- ☐ 18. Other Corporate Management (Specify)_____

TECHNICAL MANAGEMENT

- ☐ 1. Executive IT Management (CIO/CTO/VP)
- ☐ 2.IT/IS/MIS/DP Management
- ☐ 3. Telecom/Datacom Management
- ☐ 4. Software/Engineering Management
- ☐ 5. LAN/Network Applications/ Systems Management
- ☐ 6. Internet/Intranet/Extranet/Web Management
- ☐ 10. Speech Developer
- ☐ 19. Other Technical Management (Specify)_____

BUSINESS MANAGEMENT

- ☐ 16. Research/Development/ Business Development Management
- ☐ 8. Sales/Marketing/Advertising/ Product Management
- ☐ 9. Contact Center/CRM/Telemarketing/ Credit Collection/Fundraising /Help Desk/ Technical Support Management
- ☐ 11. Consulting/Integrator Management
- ☐ 17. Project Management
- ☐ 20. Other Business Management (Specify)_____
- ☐ 12. OTHER (Specify) _____

3. TOTAL EMPLOYEES IN YOUR COMPANY ALL LOCATIONS:

☐ A. 10,000+ ☐ D. 11-999
☐ B. 5,000-9,999 ☐ E. 1-10
☐ C. 1,000-4,999

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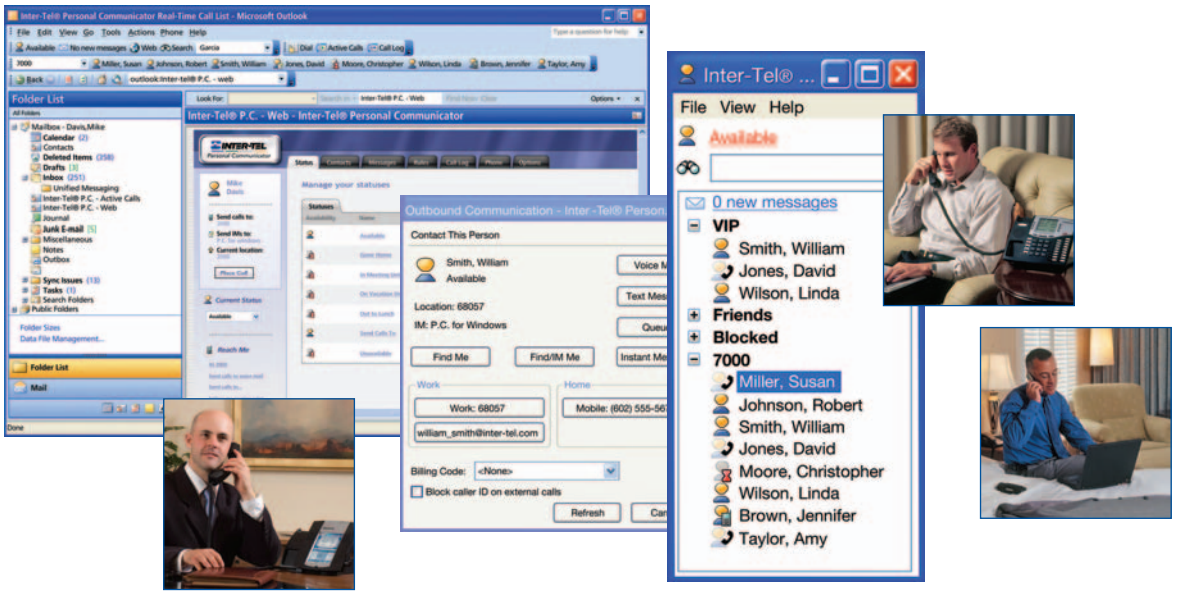

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Always ON

Top 10 Reasons for Enterprises to Love Dual-Mode Phones

By Michael Stanford

Service providers rolling out dual mode (WiFi plus cellular) voice offerings are mainly pursuing the consumer market where lower price is the selling proposition. But the consumer market may not be as profitable as the enterprise market. Here are the top ten reasons why. . .

1. Wideband codecs. The wonderful thing about Voice-over-IP is that it can use wideband codecs and offer vastly superior sound quality. With each year that passes the baby boomer generation has greater cause to regret its ear-shattering youthful excesses with the volume control. This is an opportunity that British Telecom has already seized on, with its "Hi-definition Sound" product, and one of Skype's success factors is its use of the GIPS iSAC wideband codec. Businesses may be willing to pay a premium for "business quality audio."

2. Coverage. Most phone calls are made from home or from work, yet cellular coverage is often weak in residential areas. Businesses and homes are increasingly provisioned with WiFi, so why not take advantage of this great coverage with a dual-mode phone?

3. Better battery life. The current generation of dual-mode phones has better talk time on cellular than on WLAN. In 2008 this will turn around. The next generation of WLAN chips for handsets has improved battery life to the point that talk times on WiFi will be better than cellular.

4. PBX features anywhere in the world. Once you have hooked up your dual-mode phone to the corporate PBX, you are able to use PBX features when you are away from the office. Not just in WiFi coverage at home and in hot-spots, but using the cellular data network when you are out of WiFi range. Several vendors offer this capability already, the best known perhaps being DiVitas.

With 802.11i, voice communications over WiFi are more secure than over the cellular voice network.

5. Get control of cellular expenses. Many corporations have loose policies on cell phones. Employees simply expense some or all of their personal cell phone bill each month. Even among companies that have negotiated bulk discounts with mobile network operators this constitutes an unmanaged expense. Dual mode phones help you roll cellular service into your corporate voice network, and harmonize the voice service billing.

6. Custom and vertical voice applications. The dual-mode smartphone is an attractive platform for ISVs to deliver a raft of niche and vertical applications that will be invaluable to enterprises. For example cellular providers offer push-to-talk already, but dual-mode phones will enable corporate IT departments to roll out private push-to-talk services that blend in features that are too narrow in appeal for service providers to bother with.

7. Only carry one phone. One example of a custom voice application would be a billing module that kept track of which of your calls were personal and which business. Both your personal and business phone numbers could ring on the same phone and you could get rid of your personal cell phone.

8. Only have one phone. The usual business phone is a desk phone. Why not save here, too, by using your dual-mode phone as the only phone at work? The notion of making all your calls from a cell phone is not so radical. Ford has already gone to cellular-only at one 8,000-person campus, and an increasing number of consumers are ditching their wireline phones to use cellphones exclusively. The difference with dual-mode phones is that calls on the business premises go over the WiFi network, with its superior sound quality.

9. Enterprise managed devices. Smartphones are a security nightmare for IT departments. They are programmable clients on the corporate LAN that are beyond the reach of the corporate manageability systems. The WiFi connection on dual-mode phones gives the corporate IT department direct control of the platform. Nokia has recognized the importance of this in their Eseries line of phones, which has OMA-DM modulation for enterprise manageability.

10. Improve cellular security. The WEP fiasco gave WiFi a bad reputation for security. Now that reputation is no longer deserved. With 802.11i, voice communications over WiFi are more secure than over the cellular voice network.

Moore's law is doubling the processing power of your phone every 18 months. Feature inflation is driving WiFi into cell phones regardless of whether or not customers are demanding it, and in spite of network operator reluctance. This combination is a fertile foundation for compelling new capabilities, particularly for enterprises. IT

Michael Stanford has been an entrepreneur and strategist in VoIP for over a decade. His strengths are technical depth, business analytic skills and the ability to communicate clearly. In his current consulting practice, Michael specializes in VoIP wireless networks, both WiFi and WiMAX. (define - news - alert)

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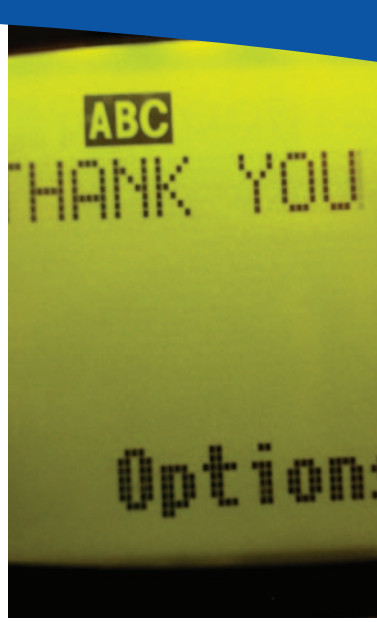

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Continuity Planning 101: A Continuing Educational Series

By Rich Tehrani & Max Schroeder

"This is like deja vu all over again." - Yogi Berra.

June 1 of each year marks the beginning of the hurricane season and this year is starting out with ominous warnings. On May 9, 2007, the first named storm and first subtropical cyclone, Andrea, came on the scene three weeks prior to the official start of the season. On May 22, the National Oceanic and Atmospheric Administration (NOAA, http://www.noaa.gov) announced its 2007 forecast indicating a very high (75%) chance of an above-normal hurricane season, a 20% chance of a near-normal season, and only a 5% chance of a below-normal season. The number of named storms and hurricanes predicted are as follows:

Named Storms	13-17
Hurricanes	7-10
Major Hurricanes	3-5

As the season officially began on June 1, the second named Atlantic storm, Barry, arrived. That same day the financial channels emphasized how an active hurricane season would adversely affect the oil markets. On June 4 and 5, the "NOAA Image of the Day," was of tropical cyclone Gonu, a 150 mph+ storm with the classic well-formed eye at its center. It was traveling towards the Gulf of Oman, the major shipping route for Persian Gulf oil producers. This is an excellent example of how an event on the opposite side of the globe can affect U.S. businesses either domestically or in other locations. Does your company have a global backup plan?

This column has always emphasized that most business interruptions are not due to "classic" disasters such as hurricanes, earthquakes, tornadoes, tsunamis and major fires. Generally people think of the physical threats like these and ignore less obvious but more common business interruptions. Events such as data security breaches, hardware or application failures, power outages, or even ordinary business proceedings like a buy-out or merger can be just as troublesome. However, the start of the hurricane season is a good "call to action" reminder for an enterprise of any size.

In 2006 very few businesses experienced downtime due to hurricanes. Many of these enterprises have become complacent and may not be prepared. The same complacency is evident for other business interruptions. Fires hit very few businesses each year and most are restricted to single buildings and are not considered a disaster for a community. But, if it is your building that burns it is definitely a major disaster. Even if you have multiple locations, what happens if your data center is destroyed or your primary telecommunications infrastructure? Does your company have alternate sites that can come online within a reasonable amount of time to protect your business operations? Without a solid contingency plan in place, your business may not survive. All anyone has to do each month is scan the articles in Internet Telephony and other TMC publications to understand that the world of telecom and data security have taken a quantum leap in the past few years. Not having a data and telecom contingency plan in place is clearly negligent.

If you want to put a plan in place and now is the time, the best way to hit the ground running is to bring in a competent business continuity/disaster planning firm. TMC and the ECA are both very strong proponents of using resellers and consultants for your converged IP needs and continuity planning is simply an extension of this strategy. Business continuity is not like other business functions that you do every day and get better and better at each time. It is like making a good first impression - you only have one chance to get it right.

Our February 2007 column featured an interview with Michael Croy, Director, Business Continuity Solutions, Forsythe Solutions Group, Inc. There are some excellent ideas on why you should use a business continuity specialist (http://www.tmcnet.com/757.1).

The July 2006 column reviewed some ideas for last minute preparations including using hosted and managed services (http://www.tmcnet.com/758.1).

A concluding note: While wrapping up this column's final version, a NOAA-generated severe thunderstorm watch for Norwalk Connecticut (TMC's offices) flashed on the screen. A local tornado warning was also broadcast. Tornados are rare in Connecticut but certainly possible and definitely capable of disrupting power and communications. IT

Max Schroeder is a board member of the ECA, media relations committee chairman, and liaison to TMC. He is also the Sr. Vice President of FaxCore, Inc.

Rich Tehrani is the President and Group Editor-in-Chief at TMC.

If your organization has an interest in participating in the TMC/ECA Disaster Preparedness Communications Forum, please contact maxschroeder@tmcnet.com or rtehrani@tmcnet.com.

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Green IT in the Telecom Space

By Jeff Hudgins

With the seemingly ever-increasing energy costs and the emphasis on improving the environment, the focus on "green-computing" is becoming much more intense. In the past, power usage wasn't a major IT concern. Today power and cooling costs are a major component of IT budgets and will continue to be for the foreseeable future. Data centers in California are estimated to require 250-375 MW of energy-the equivalent of 3,495-5,242 barrels of oil each day! The Green Grid (http://www.thegreengrid.org), founded in February 2007, is a growing organization seeking to define and propagate the best energy-efficiency practices in datacenter operation, design, and construction.

"While Green Computing is often viewed as an environmental initiative, the significant cost savings associated with energy efficient IT infrastructure is the true economic incentive for leading enterprises and service providers to embrace 'Green IT'." - Jeff Kays, VP of Sales, Alliance Systems ISG Division.

Let's explore what changes are happening in the datacenter energy-efficient designs and see how they might apply to applications within the enterprise and service provider arenas.

Power Trends

In a study conducted by The Green Grid, the rate of increase for heat density ranges from 7% annually for storage to as high as 28% for communications equipment. Trends shown in Figure 1 indicate an expected increase in all product categories through 2014.

Data Center Application success

A successful approach to improving the power and cooling efficiency in the data center requires best practices in all areas of design, deployment, and organization. The key design elements are floor layout and IT load. Floor layouts should be designed in such a way to reduce the impact of hot and cold aisles to reduce the load on air conditioning systems. Right sizing the IT load to the overall physical infrastructure will reduce the overall electricity consumed (reported as high as 50% in some data centers). The deployment of virtualization software consolidates the number of physical servers required for both current and future work loads. Lastly, organizing and consolidating the servers with a well defined upgrade and replacement strategy can dramatically improve space efficiency.

Can Green Computing Concepts Apply to Service Provider and Enterprise IP Telephony?

As today's telecommunications networks grow in both size and complexity, enterprises and service providers alike are faced with an increasing burden on operating expenses that rival any large data center. The amount of power consumed and heat dissipated within even a single rack of communications servers is now a very real budget consideration. Clearly, lowering the heat produced and power consumed by high-density solutions is a goal of all communication platform designers. One primary difference between many of the data center applications and the IP telephony applications in the enterprise and Central Office is the challenge of supporting a large number PCI-X I/O cards. Solutions such as Call Logging, Video Processing, SS7 Gateways, and other custom board solutions requiring this level of I/O compound the design complexity in these environments. IP Telephony server platforms today are delivering higher performance in terms of multi-core processing power, storage capacity, and I/O bus speeds. Tier 1 OEMs (such as DELL, HP, and IBM) now support PCI Express slots but have reduced the number of available PCI-X slots in the process. The challenges that both enterprise and service providers now face are three-fold:

1. What solutions are available if my solution requires multiple I/O ports with add-on cards?
2. What are my thermal and power budgets when a large number of PCI-X I/O boards are required for the solution?
3. Can I still take advantage of the newer computing technologies cost effectively?

Expansion platforms are now available that can effectively address all three areas. Coupling a host machine with the latest processing power along with an expansion system that can house multiple PCI-X cards provides a best of breed solution. By combining the payload into one or two expansion systems, the amount of power and cooling required is reduced by nearly 50% in most cases. If the systems are designed with DC power, then the power and cooling budgets are typically reduced by 75% as compared to a rack full of 1U or 2U AC systems.

Improvement	Total Cost of Ownership (TCO) Savings
Cooling power required	• Typically 75% less
Equipment power consumption	• Typically 75% less
Rack Space Required	• Typically 50% less
Lower Equipment Capital Cost	• Less cabling • Less KVM and NICS requiring fewer network switches.
Simplified management	• Fewer spares • Two managed elements versus five.

Table 1. Sample comparison of expansion systems compared to 1U/2U rack mounts.

Final Score

In the end, enterprises and telcos are facing similar challenges as the data centers in terms of power, cooling, and space considerations. Each have their own unique set of challenges, but the common approach to DC power and improved system density will continue to lower the overall energy demands – ultimately helping our corporate wallets and the environment. IT

Jeff Hudgins is VP of Engineering at Alliance Systems. (news - alert) For more information, visit the company online at http://www.alliancesystems.com.

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By Richard "Zippy" Grigonis

Trenton Technology's Flood of New Boards and Backplanes

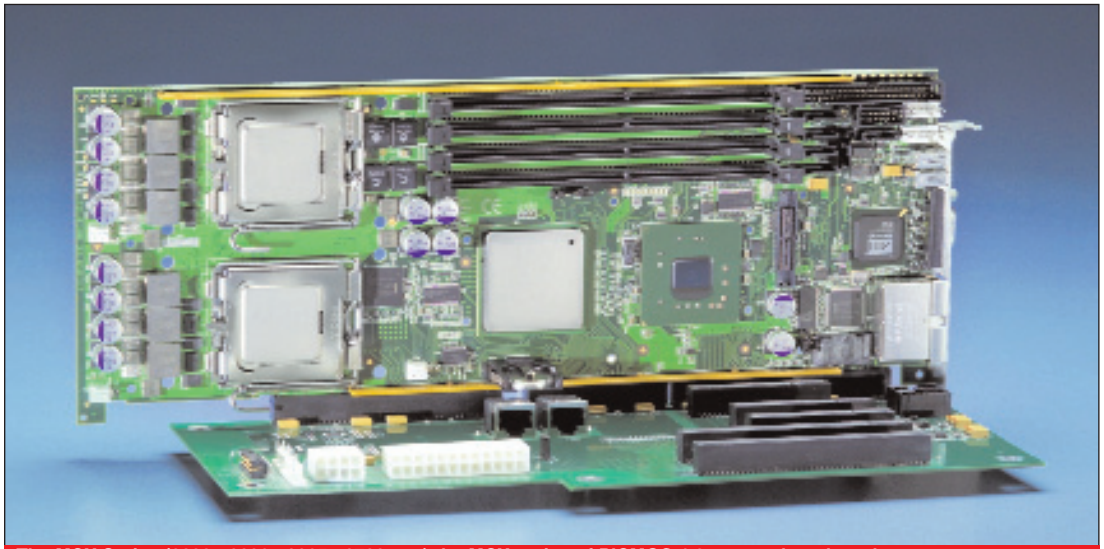
Ten years ago the Gainesville, Georgia-based company Trenton Technology (http://www.trentontech.com) became my favorite single board computer (SBC) manufacturer. I was initially attracted to their innovative "flush-mounted CPU solution" - designed to save backplane slots and allow use of all available standard PICMG compliant slots - which first made its appearance in 1997 when they released their first Pentium II board using the old 440LX chipset, and which they followed up the next year by bringing the same technology to a 440BX chipset-based Pentium II board, the TR-DP2.

Today, Trenton remains a major force in the development of single board computers and now system host boards (SHBs). Recently they announced two new PICMG 1.3 SHB product families, the MCX and MCG family of multi-core SHBs. The MCX-series SHBs are targeted at servers, and they provide multiple PCI Express (PCIe) links to option card slots and devices on a PICMG 1.3 backplane. The MCG-series, on the other hand, offers graphics-class board configurations with native electrical support for x16 PCI Express video and imaging cards.

But Trenton also offers backplanes. Indeed, they recently announced availability of five new PICMG 1.3 backplanes that support SHB Express system host boards and various PCIe, PCI-X and PCI option cards. Among the five new backplanes is the 20-slot BP6FS6605 which has six flexible system host board segments capable of supporting graphics-class or server-class PCI Express slot configurations. Each segment is capable of supporting a x16 PCIe link and each segment can operate independently or over an Ethernet fabric built into the backplane. The fabric option enables the backplane and its SHBs to operate in cluster computing applications. Each segment contains a x16 PCI Express mechanical slot and three of the segments also include a x8 PCIe mechanical slot. Standard ATX/EPS power connections are supported along with the terminal block connection method (the optional terminal blocks and the backplane's on-board voltage regulation optimizes shared power configurations). The segments can be powered individually or grouped together to share a common power source.

The 14-slot BPX6610 backplane is designed for applications with PCI Express and PCI-X or universal PCI option cards. The BPX6610 backplane supports a server-class PICMG 1.3 system host board and has one x16 and five x8 PCIe card slots plus six PCI-X card slots that also support universal PCI option cards. The x16 slot and one of the x8 PCIe slots are driven directly from the SHB with x8 PCIe links. The SHB also provides a x4 PCIe link to a PCI Express fan out switch to connect x4 links to the remaining four x8 PCIe mechanical slots. Another x4 link from the fan out switch drives a PCI Express-to-Dual Channel PCI-X bridge chip that supports two 64-bit/100MHz and four 64-bit/66MHz PCI-X card slots. IT

Richard Grigonis is the Executive Editor of TMC's IP Communications Group. He has written about embedded computing, fault tolerant and "fault resilient" computing (a term he coined) for telecom since 1994.



The MCX Series (6633-, 6638-, 6685-, 6700-xxx) the MCX series of PICMG® 1.3 system host boards are server-class system host boards available in various configurations, including single- or dual-processors.

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2007 marks our 8th annual TMC Labs Innovation Awards, recognizing the truly unique and innovative products and services in IP communications. This year marked several strong contenders in these specific areas: mobile, testing tools, and converged devices. In fact, we were surprised at the number of testing tools applicants and the number of winners we selected, namely Mu Security, QuikCycle, and Shunra. There was also an increase this year in "converged devices" that combine several usually disparate pieces of equipment all into a single device. Winning applicants in this genre include Critical Links, Fonality, and Vertical Communications. Innovative mobile players that we liked included DiVitas, Tango Networks, and Truphone and this doesn't include several "good" mobile applicants that just missed the cut.

There was also strong competition in the unified communications space with Nortel and Siemens, each offering unique UC offerings. Finally, we had some interesting video-related applications, including offerings from Ineoquest and Redback Networks. TMC Labs is proud to announce our 22 picks for this year's TMC Labs Innovation Awards, which will be published in two parts in order to accommodate our in-depth write-ups for the winners. The complete winners list will be published in both issues; however, we will write the detailed write-ups in alphabetical order beginning with 3CX this month and ending with RadiSys. Next month, we start with RedBack Networks and end with Truphone.

3CX
3CX Phone System
http://www.3cx.com

In April, 3CX (news - alert) announced 3CX Phone System - Free Edition, one of the first Windows-based IP-PBXs on the market. Now they offer the 3CX Phone System - Small Business / Professional Edition, targeting the SMB market. The 3CX Phone System is software-based; since it relies on the SIP standard, it is not tied to any particular VoIP hardware. This allows customers to choose their favorite popular SIP provider, gateway or phone.

3CX told TMC Labs, "We are also the first to offer a 'free' edition of a Windows-based IP PBX. We also believe we have set new standards in terms of ease of use. I think our product breaks new ground in user friendliness and compatibility. It's very easy to install, works on Windows and works with a wide range of SIP providers, gateways and phones."

The free edition doesn't skimp on features - it supports unlimited extensions and all major features including voicemail, auto-attendant, ring groups, and more. Support isn't included in the free edition; however, there are online forums for community-based support. The free edition supports up to eight PSTN or VoIP provider connections. For more advanced features such as call queuing you can purchase the paid version. Both the free and the paid versions include a user-friendly web-based administration running on the Apache web server. 3CX told us they also support integration with Exchange 2007 (unified messaging).

Critical Links
edgeBOX
http://www.edgebox.net

EdgeBOX (news - alert) is a multi-function server appliance that provides converged services that include network (IP), collaboration (IT) and voice (VoIP) out of a single box, effectively replacing several separate pieces of equipment required at the edge of the network, while delivering the same set of features. When we say this is a multi-function device, we mean it. The edgeBOX features a firewall/router, VPN, VoIP Gateway, IP-PBX, QoS, WiFi, File Sharing/Storage and more. The integrated services approach brings significant advantages such as: simplicity, security, flexibility, maintainability, and reliability, and very low TCO (Total Cost of Ownership).

For the Service Provider, the edgeBOX is a flexible, modular, and standards-based platform for delivering Managed Services for SMBs. According to Critical Links, "For the Service Provider, edgeBOX is an exceptionally 'intelligent' CPE (Customer Premises Equipment) used to place new sophisticated and value-added services on the network edge, and complement services on the network center. The edgeBOX has been designed from scratch with Service Providers' needs in mind - as opposite to most competitor gateways - and specifically includes unique features that enable Service Providers to deliver Managed Services in an efficient and cost-effective manner."

edgeBOX software runs on commercial off-the-shelf (COTS) hardware from well-known brands (Dell, IBM) and runs a full IP-PBX solution based on Asterisk. Some of the main features include web-based management, RADIUS, LDAP, SNMP, email server, web server and even a built-in Windows Primary Domain Controller (PDC). It also features all the usual VoIP suspects, including SIP and IAX (Asterisk) support, QoS (Diffserv), traffic prioritization through CBQ, RED, WFQ, by user/group/port/protocol, as well as ENUM.

The PBX functionality is pretty powerful and includes voicemail, call routing, hunt groups, follow-me, parking, conferencing, IVR/auto-attendant, and music-on-hold. Amazingly, this "all-in-one" solution also acts as a File Server (Windows SMB, FTP) with disk quotas, automatic backup (local USB, disk, remote), and it will even perform an anti-virus check on file shares. It also features a built-in Print Server. With all

of this functionality, small businesses can not only consolidate their hardware and save on initial costs, but they will also save on electrical and management costs, thereby reducing the TCO.

DiVitas Networks
DiVitas Mobile Convergence Appliance (MCA)
http://www.divitas.com

Every once in awhile a product comes along that surprises TMC Labs, often making us say to ourselves, "Huh... Well, why didn't we think of that?" DiVitas Networks (news - alert) has done that with their Mobile Convergence Appliance (MCA), which enables enterprise-based dual-mode phone functionality - negating the need to wait for your cellular carrier to offer dual-mode functionality. DiVitas mobilizes enterprise applications (on mobile handsets) such as voice, IM and email seamlessly over any network (WiFi, Public WiFi, cellular), all under the control of the enterprise. DiVitas claims to be the first to offer true seamless handoff experience from WiFi to cellular (and back) and a convergence solution that is under the complete control of the enterprise without any dependence on the carrier.

DiVitas is WLAN, handset, PBX, network and carrier-agnostic enabling mobile-to-mobile convergence (MMC) for the enterprise. The solution consists of a Mobile Convergence Appliance (MCA) deployed inside the enterprise and a Mobile Convergence Client (MCC) embedded in popular handsets. The DiVitas solution enables road warriors to use a single device for multiple applications, secure instant messaging, and single voicemail/mailbox over the mobile handset. It also supports presence information. Importantly, call-handoff occurs without dropping and it can integrate with your PBX and provide advanced PBX functionality from the mobile handset.

Eutectics
IPP2000
http://www.eutecticsinc.com

Skype is the most popular VoIP application ever which has spawned a whole Skype ecosystem of third-party Skype accessories - both hardware and software. One of the features lacking in Skype is fax support, which would make it a stronger enterprise play. One problem with faxing over Skype is that the fax modem negotiation and signaling are compressed which causes the fax to fail. Eutectics' (news - alert) has solved these problems with a new version of the Eutectics IPP2000 RJ11-to-USB converter, called the IPP2000-FAX. Eutectics told us, "We have the only known unit that can accomplish FAX over Skype." They added, "No other FAX over Skype product is available today. We have an exclusive relationship between Eutectics hardware and Commetrex software to accomplish this feature."

The IPP2000 provides a standard PSTN interface for connecting any off the shelf fax machine. It features DTMF tone recognition, CallerID, and 90V ring. It also provides T.38 Fax over Skype in real time to any other Skype user in the world for free. An IPP2000-FAX unit is required on both sides of the connection for free faxing. However, for Skype to any traditional PSTN fax machine all you need is one IPP2000. With this solution, SMBs looking to switch to Skype for their business needs, including inexpensive voice and fax calls, now have a viable solution. TMC Labs tips our caps to Eutectics for this innovative solution.

Fonality
trixbox Appliance v1.0
http://www.fonality.com

The trixbox Appliance, a turnkey, open-source Asterisk-based IP-PBX, is perfectly suited for small-to-medium sized businesses. The trixbox appliance is targeted for businesses with 5 to 500 employees and can be purchased for use with VoIP, E1/T1 or up to 48 analog lines. Comparatively, Digium's Asterisk appliance only scales to 50 employees

and only 8 analog lines. When asked to describe the product, Fonality (news - alert) stated, "The trixbox Appliance is a pre-loaded, tested, and configured trixbox-based IP PBX that gives you the highest quality phone calls with VoIP, digital and analog connectivity options. The Appliance requires minimal set-up and provides IT Resellers with a quick and easy hardware solution to begin rapidly building a phone system. It's not necessary to waste time building a 'box' anymore. The trixbox Appliance saves time, and as we all know, time equals money!"

The trixbox Appliance includes trixbox 2.2, a new release of the popular distribution that integrates Linux, Asterisk, Apache, MySQL, PHP/Perl and SugarCRM, which Fonality likes to call the LAAMP stack. This LAAMP stack tightly integrates these open applications to work together on one physical server, providing companies with a PBX phone system and the peripheral applications needed to support their business.

Trixbox has excellent plug-and-play hardware support. When recently interviewed by TMC Labs' Tom Keating, Chris Lyman, the CEO of Fonality, told him that as of trixbox 2.0, it had Sangoma drivers baked-in via RPM, so you can use Sangoma hardware "plug and play" out of the box. Chris told Tom, "We saw a lot of requests from the community for Sangoma drivers because they make really good cards and so we asked Sangoma if they wanted to bake their drivers in and they said 'yes'. I think to the extent that the community asks for other hardware support from Rhino or PIKA we'll probably do that as well and just be hardware-agnostic in the trixbox community."

The latest Trixbox (v2.2) also includes the open source Asterisk GUI (Graphical User Interface), a component of the AsteriskNow distribution, which gives customers an additional trixbox GUI option. Fonality told TMC Labs, "The trixbox appliance does not lock the IT reseller into one type of user interface. It was intentionally designed with flexibility and choice top of mind." Fonality pointed out that unlike the Asterisk appliance by Digium, the trixbox Appliance supports several user interfaces, giving IT resellers the choice to use FreePBX, Asterisk record interface or Web MeetMe, plus it comes with the trixbox dashboard, making it even easier to configure extension and phones.

The funky/cool fluorescent green appliance itself features a 4-line backlit LCD display on the front of the trixbox Appliance so you can instantly check the system's status, including call and queue metrics/details. Although the trixbox appliance supports Asterisk-compatible cards from virtually any telephony card manufacturer, the trixbox Appliance Enterprise Edition comes with pre-configured Sangoma line cards with industry-leading Octasic echo-cancellation hardware inside to give you the highest quality phone calls. For redundancy, the unit has dual power supplies and mirrored hard drives. Fonality also espouses the increased air flow to reduce heat while maintaining very limited fan noise. The trixbox Appliance is one of the most feature-rich PBXs on the market and at just $999, it is also makes it one of the best bang-for-the-buck phone systems you will find.

IneoQuest
http://www.IneoQuest .com
iVMS (IP Video Management System) Desktop

IneoQuest 's (news - alert) next-generation IP Video Quality Assurance systems enable video service providers, MSOs and telcos worldwide to improve video quality and control operational expenses (OPEX). Its software platform, iVMS, provides real-time analysis of the entire IP Video network from the video head-end to the customer set-top box to help pinpoint problems allowing the service provider to proactively fix problems without a customer complaint. iVMS can detects customer-impacting events, sends alerts, and rapidly isolates faults while providing integrated remote troubleshooting - reducing the number of customer calls and associated truck rolls. iVMS gives video service providers the ability to continuously inspect tens-of-thousands of simultaneous video program streams - at any point in the network. This is an important point, since other systems can only look at video program flows at the MPEG encoder or perhaps at the head-end. Unlike the iVMS, they cannot proactively monitor hundreds of thousands of simultaneous video program flows at any point throughout the network.

iVMS Desktop leverages video probe technology (up to 10 Gbps) and Multi-Dimensional Video Quality Management Technology to enable Video Service Providers to view all video, at any point in the transport, all the time. Additionally, iVMS Desktop can send alarm information to a provider's NMS or OSS. iVMS integrates seamlessly via SNMP and e-mail notification alerts reinforce the real-time display of faults on the network. Some of the capabilities include IP Video quality assurance across IP video network, create performance and trending reports, remote real-time monitoring and debug, detailed performance report generation, centralized control of all IneoQuest devices, thumbnail views of actual video flows, and it is MDI compliant.

When asked if their solution breaks new ground, IneoQuest told TMC Labs, "Yes! iVMS Desktop is intended to help Video Service Providers reduce operational expenses [OPEX] by proactively isolating video quality problems at any point in the network transport. No other video management system can provide real-time monitoring, performance reports and trending, and troubleshooting capabilities for hundreds of thousands of simultaneous video program flows."

Mitel
Mitel Application Suite (MAS) 1.0
http://www.mitel.com

The Mitel (news - alert) Application Suite (MAS) 1.0 delivers a suite of productivity applications to the SMB. The Mitel Application Suite initially provides integration of three productivity enhancing applications - teleworking, mobility and unified messaging on a single server. The entire suite of applications are all managed through an integrated administration and management web-based interface. Similarly, end users can also manage their services by logging on to an end-user focused web page that lets them access their voicemail, email and faxes.

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One application is Mitel Mobile Extension which provides a single phone number and single mailbox to its users. Calls are routed simultaneously to both the IP PBX extension and any other device (mobile, home phone, etc.). If the call is not answered the system is smart enough to terminate the call on the business voicemail system.

Mobile Extension enhances mobile workforce accessibility and productivity by bringing PBX features and functionality to any mobile, home or wireless device. This includes Calling Line ID to the mobile or remote device, call transfer, hold and conference codes, and the ability to establish a quick conference from any mobile device over the corporate network.

To reduce roaming and long distance charges, Mobile Extension can also be used in conjunction with enterprise hot-desking to seamlessly move phone calls from cell to desk phone in any enterprise location. The user simply logs in to the nearest Mitel IP phone and takes control of the phone making it their extension number complete with their user profile. Then with the press of a button the call can be moved from cell phone to desk phone and vice-versa.

Mitel NuPoint Messenger IP is Mitel's unified messaging application which provides a way to relay, store, and retrieve messages - using a phone, fax machine, pager or PC. NuPoint Messenger IP also provides users access to a host of flexible and customizable applications. These applications allow users increased flexibility, such as having their calls routed to them while they are on the road, or access to their voice or fax messages from their PC.

Finally, the Mitel Teleworker Solution enables businesses to enjoy the benefits of teleworking through a, secure, "plug and work" solution that extends the corporate network to virtually any location. Businesses can now benefit from reduced overheads and increased employee retention, while users can be more flexible and productive in how they work.

Mitel Application Suite (MAS) 1.0 takes Mobile Extension, Teleworker, and Nupoint Messenger IP products and packages them in a single server, single sign-on package that delivers three critical enterprise capabilities to the SMB market. Importantly, MAS 1.0 is delivered in a cost-effective package that simplifies installation and administration of these critical business applications.

Mu Security, Inc.
Mu-4000 Security Analyzer
http://www.musecurity.com

(news - alert) As IP applications increasingly become a critical part of any business, attacks by hackers become increasingly sophisticated. Email, CRM and database systems, file servers, and the growing voice-over-IP applications all rely on the IP protocol, which means that securing your IP network is needed not only to protect your data assets but your critical voice network as well. Mu Security, a start-up company lead by a team of former Juniper Networks executives, have developed a way to make networks and network applications more secure though their vulnerability assessment product. The Mu-4000 Security analyzer enables service providers and enterprise developers to test their products with known hacker techniques.

The Mu-4000 Security Analyzer platform methodically defines the "attackability" or security exposure of IP-based products. The Mu-4000 helps proactively reduce VoIP, file storage or any other IP-based product protocol vulnerabilities and thus greatly improve product security and robustness. The Mu-4000 offers 3 major capabilities: One is to reduce or eliminate targets, enablers, channels, protocols, and rights - the traditional security principle of permitting only what is required; the second is to restrict the types or instances of attacks - the principle of using firewalls and layered defenses and access rights to limit access; and the third is to eliminate or reduce the types or instances of vulnerabilities.

Among the innovative firsts in the Mu-4000 platform is automated fault isolation via the "mutate-monitor-manage" process that leverages the integrated test harness. Mu Security claims that the Mu-4000 is the first product in its class of security analyzers to isolate, document and help expedite the remediation of any IP-based product (hardware or software) robustness, vulnerabilities or resiliency problems.

The Mu-4000 platform includes internally generated protocol mutations using an object-oriented database of protocol vulnerability patterns, published vulnerability (PVA) known-attack replays and the important ability to automate existing third-party analysis scripts. The Mu-4000 automates any CLI-drivable test script and offers all the detailed reporting and documentation applied to Mu Security's internally developed mutations and PVA scripts.

Mu Security brags that the Mu-4000's approach is technically more methodical and complete than a hacker. It employs a methodology Mu calls Protocol Spidering, which is an automated means to generate precise test cases for complex, highly interconnected code to expose security vulnerabilities. The experience of previous hacker attacks is applied methodically to new protocols. This helps those protocols mutations and services to be hardened before they are deployed, and raising the bar on hackers in terms of the cost of finding new vulnerabilities.

Nortel
Converged Office Solution
http://www.nortel.com

Unified communications is much more than a buzz word. Today, there are actual solutions that integrate all your disparate communications into a centralized and organized fashion that vastly improves employee productivity while simultaneously lowering administration costs and the TCO. Nortel has their Converged Office Solution, and along with Microsoft they are part of the Innovative Communications Alliance.

One product under Nortel's (quote - news - alert) Converged Office Solution is the Nortel CS 1000 Rel 5.0 IP PBX. Targeting the SMB, the CS 1000 is integrated with Microsoft LCS 2005 and soon OCS 2007 when it becomes available. The Converged Office also includes the

Let's leave the hardware where it is.

Introducing the software-based VoIP solution from Microsoft. It's a whole new way to look at telephony.

As it turns out, that important move to VoIP isn't about ripping and replacing or big, upfront costs. That's because it's no longer about hardware.

It's actually about software.

That's right. Keep your hardware—your PBX, your gateways, even your phones. Add software. Software that integrates with Active Directory,® Microsoft® Office, Microsoft Exchange Server, and your PBX. Simply maximize your current PBX investment and make it part of your new software-based VoIP solution.

Because what you have is good. What you have with the right software is even better. Learn more at microsoft.com/voip

Your potential. Our passion.™

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CS 2100 for very large centralized deployments and the CS 2000 for hosted services.

According to Nortel, "The strongest investment protection story is for enterprises that have an installed base of Nortel telephony, Microsoft Exchange and Active Directory. However, the overall target market is customers who want to achieve the business benefits [personal, group and business productivity enhancements] of unified communications through unification of the user experience with a path towards unification of the UC infrastructure on a common software-centric architecture." Nortel also pointed out that only Nortel has established a joint roadmap with Microsoft towards this objective.

With Nortel's tight partnership with Microsoft and the tight integration there are some key advantages. First, most IP PBX vendors are announcing interoperability with LCS 2005 based on external gateways or additional middleware, with limited functionality. Converged Office features tight integration with Office and Outlook applications. In addition, solutions from Avaya and Cisco require two clients (their own plus Office Communicator) to make phone calls from laptops when being used away from the office. Competing solutions which require an additional vendor-specific client for mobile telephony only complicates the user experience and increases IT deployment costs.

Some of the key features in the Nortel solution include one user experience for IM, presence and business-grade telephony, click to call, follow-me, presence, call redirect to mobile or other phone, Microsoft Office & Exchange integration, and a single directory (AD) for both your data and phone networks. Nortel told TMC Labs, "We are the first to market to tightly integrate an IP PBX - our CS 1000 - with Microsoft LCS 2005 running Nortel's Multimedia Convergence Manager, based on a software-centric architecture, and to establish a roadmap for integration of multimedia conferencing, contact center, and UC integrated branch solutions."

Nortel's Converged Office solution is based on a native SIP-based interface with optional and unique redundancy between Nortel CS 1000/CS 2100/CS 2000 and LCS 2005 and/or OCS 2007. MCM enables address conversion using a customer's existing Active Directory configurations and enables the Microsoft LCS solution to tie into the Nortel Redundancy/Reliability capabilities.

QuikCycle
QuikCycle Automation Suite
http://www.lumenare.com

QuikCycle, (news - alert) formerly Lumenare Networks, has a powerful testing suite called the QuickCycle Automation Suite, which allows you to comprehensively test converged IP-based networks in realistic scenarios that closely replicate live-network scenarios, while maximizing resource utilization and reducing cycle time. The Suite provides for both automated lab and test management. QuikCycle can provide multi-vendor interoperability testing, end-to-end system integration testing, fully automated regression testing, functional testing under load/stress conditions, simulation of network impairment and outage conditions, and replication, saving, and re-creation of fault scenarios for analysis and resolution. QuikCycle told TMC Labs, "It is the first and only fully integrated solution for managing the complete test lifecycle for communications networks of all kinds, including VoIP, IPTV, broadband and wireless services. Additionally, it can provide for the testing of hardware equipment/devices attached to those networks."

QuikCycle software allows a tester to quickly define the VoIP test configuration they need. For example, the test configuration may be a topology consisting of a core router and several edge routers, along with a VoIP call generator/analyzer In addition to the devices, the physical connectivity is defined by the tester, as well as the software images and configuration files needed to fully specify the logical configuration using QuikCycle AutoLab software.

Once the required topology is defined, the tester uses the AutoLab scheduler feature to find the best fit and earliest test availability based on available lab resources. The system acquires the resources and automatically sets up the physical and logical configuration, by controlling the infrastructure of the QuikCycle-automated test bed. Devices are powered-up, software images are applied, connections are made through Layer 1 or Layer 2 switches, configuration files are loaded, and the entire hardware and software setup is validated as "ready for testing".

As soon as the topology is ready, QuikCycle AutoTest software takes over. Through integration with AutoLab's open API, an automated test case in AutoTest detects the running topology and begins test execution. First, it initiates a predefined sequence of SIP-based VoIP calls from the call generator through the routed call path. Then, it begins quality analysis of the voice calls using the call analyzer, thus establishing the baseline. Then another automated test case begins to wreak havoc with the network by physically dropping links by controlling the switched infrastructure, and restores the links after a short, preset interval. While this is occurring, the voice quality measurements continue and all data is recorded. In addition to physical link impairments, you can also create impairment and degradation in the network by creating overload traffic conditions using an IP traffic generator/analyzer. All test case results from all the test equipment are captured and stored in the centralized test results repository for later analysis or reporting

RadiSys
Convedia Software Media Server
http://www.radisys.com

The Convedia Software Media Server (CSMS) is a Linux-based IP media server for enterprise and IMS audio/video media processing applications. The CSMS will initially be supported on the RadiSys (news - alert) Promentum ATCA-4300 Compute Processor Blade, as well as the IBM System x3550 1RU Linux Server. Target channel distribution partners include Telecom Equipment Manufacturers (TEMs) and Independent Software Vendors (ISVs), many of which have already integrated Convedia hardware-based media server products into

their carrier-class integrated IMS solutions. RadiSys's goal is to also target the growing ATCA-based IMS solution opportunities, as well as entry-level enterprise solutions (e.g. IP PBX or IP Contact Centers) requiring smaller feature sets and lower port counts.

The Convedia Software Media Server consolidates the functions of traditional announcement and recording servers, audio and video conference bridges, interactive voice response units (IVR/VRU), messaging equipment and speech platforms onto a single media processing platform. This consolidation reduces the quantity of disparate media processing elements, along with the total cost of ownership for the media processing infrastructure, while improving utilization of the media processing ports in the network.

Telecommunication applications are hosted in the softswitch or application servers in a VoIP or IMS architecture. This is where the signaling and application logic resides. When these applications require media processing on the audio or video media streams associated with their services and endpoints, they instruct and control the Convedia Software Media Server using SIP, along with XML-based scripting languages like VoiceXML or Media Server Markup Language (MSML). With a Convedia Software Media Server deployed and available as a shared resource in the network, the introduction of a new service is simplified because the service addition is isolated to the application layer only. The benefit of this approach includes the faster introduction of new revenue-generation services or capabilities.

RadiSys explained to TMC Labs, "The application servers are the 'brains', while the Convedia Software Media Server is the 'muscle', which together can be designed and configured to support a broad range of Enterprise VoIP applications including IP PBX, IP Contact Centers, VoiceXML-based IVR, Unified Messaging, or voice/video enterprise-wide conferencing."

Convedia (which was acquired by RadiSys in September 2006) was the first media server company to support both SIP and MGCP natively in their Media Server family, along with the first to demonstrate VoiceXML 2.0 support running natively on a media server platform. Convedia claims to be the first to deliver card-level redundancy capabilities (April 2003) ensuring no single point of failure in call processing and in-service software upgrades. They also claim to be the first innovator to offer both audio and video media processing capabilities on the same platform.

Presence Goes Mainstream

It has been long known that the convergence of voice and data networks can improve business processes through a number of emerging applications, such as powerful presence management capabilities. However, the value that presence management offers businesses historically took a backseat to what was optimistically perceived as more "concrete" efficiencies in the eyes of the customer, such as the reduced costs associated with hardware. infrastructure and toll charges.

But this is now changing. Recent trends clearly indicate that both large and small organizations are recognizing the strong value that presence management brings to their sales organizations, customer service departments, and business processes as a whole. Improving efficiencies between remote sites, increasing productivity among mobile professionals and maintaining a competitive advantage against larger companies with more resources are notable benefits. For these reasons, businesses are showing renewed interest in integrating these tools into their communications systems.

Today's acceptance of presence management is being driven by two factors. First, the urgent need for businesses to improve operational efficiencies in environments where they maintain remote sites, teleworkers, and mobile employees. Secondly, there is the influx of new employees entering the job market that expect the workplace to provide similar tools to what they have become accustomed to using. This group was the first to take full advantage of instant messaging, a basic presence management application. With instant messaging, users can tell at a glance when their peers are logged onto the web and are ready to chat. Now that these users have entered the job market they've come to expect, at a minimum, this same level of presence awareness for coworkers and associates.

Today's presence management solutions go well beyond a simple "who's on line" determination. Companies that deploy the full suite of presence and Voice over IP technology are realizing higher sales, faster time to market and reduced operating costs than their competitors without it.

Presence management is a powerful business tool that helps organizations shorten sales cycles, improve operations, enhance customer service and control costs.

Businesses are quickly realizing that presence technology is an essential part of their day-to-day routine. One company uses presence tools specifically in its accounting department. A staff member was on one call with a customer, when a second call from a vendor came in. Via a pop-up menu, the accountant's computer informed her that she was receiving an incoming call, along with the identity of the caller. Through the individual call routing rules she had set up, the presence management tool determined that this was not an urgent call. As a result, the application routed that call directly to voicemail. The presence application then sent her an email with a recording of the message that was left. All of this within an instant, without the accountant having to interrupt an important call with a valued customer.

Another real world example of presence management comes from a large realtor in the Northern Virginia suburbs of Washington, D.C. This firm specializes in the residential real estate market and employs some 70 licensed agents working out of three locations. The lifeline for these agents is their ability to acquire listings and bring the right seller together with the right buyer at precisely the right time. Every incoming call is a chance to make a sale or get a listing. Every missed call is an opportunity for their competitors to do the same.

Agents are frequently out of the office showing properties to prospective buyers, meeting with homeowners to secure listings, or attending closings. Their ability to maintain and manage communications while on the go is paramount to their success. Good agents make a customer feel like they are the only client that matters-in spite of juggling priorities, resources and time.

It was this need for a need for a close client relationship that drove the real estate firm to integrate presence management and call routing tools within their exiting calendar software. High priority callers, like current clients, can

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By Aron Aicard

now be directed to the appropriate device(s); including current location, other offices, personal cell phone or PDA. They can also choose to route calls to an associate for immediate handling or to voice mail.

Personal greetings can be created to greet clients by name and let them know and keep them apprised of activities. This is especially useful in situations where the realtor is unavailable and must have a call handled by a colleague. The greetings can also help extend presence information out to the caller. For example, "Hi Pat, this is Barb, I'm in a closing at the moment and can't take your call right now. I'm going to forward you to my co-worker Robert. You met him last week. He'll be able to help you." This extension of presence out to the calling party is a relatively new concept and has a powerful impact on customer service. Less essential incoming calls can also be routed to any number of specific destinations, like a receptionist or voice mail.

Additionally, the agents use an application that has both browser interface and speech recognition. They can change the settings of their presence management application from the Internet or from their cell phones at any time, further enhancing their ability to deliver the kind of customer service their clients expect.

Call routing is just one component of presence management. A key element of the technology is a user's ability to share their status with other individuals, whether they're in the cubicle next door or the branch office across the country. The capability to immediately gauge the status of individuals and initiate an immediate multimedia conversation when they are available is a powerful tool - particularly for those companies that rely on a geographically dispersed workforce. Combining presence management with other powerful applications, such as collaboration tools, increases workplace productivity and efficiency.

Consider as another example the daily operations of a computer game developer. This company, which lists brands like Sony, Microsoft and Nintendo as its customers, is the perfect example of a modern, geographically dispersed company. Its corporate headquarters are in Paris, it has a development team in Montreal, its sales and marketing organization resides in San Francisco, and its production facilities are located in China. It is a company spread all over the globe and has key employees in time zones that are 12 hours apart. As com-

plex and cumbersome as communications in this environment appear, the company has found tools that streamline its processes.

They've integrated a presence management engine into their communications system. The company's employees can easily check on the status of coworkers around the globe. As a result, they can immediately assess who is available for conversations or conference calls, saving innumerable steps and wasted time trying to track down associates in other locations. Identifying the status of individuals is only one part of the equation for this company. The organization has also linked presence and collaboration tools to significantly boost productivity.

For example, once the Montreal-based developers ascertain that the Chinese-based production team is available, they use collaboration technology to send over schematics and other technical literature. They can then immediately initiate a telephone conversation to discuss the project. No false steps trying to track people down. They know exactly who is available and how to reach them, regardless of location. The IT staff even downloads and configures software to any PC on the network without leaving their office. This saves huge sums of money in lost production time and reduced travel costs.

Going beyond the company's enterprise network, the remote sales teams use the technology to review forecasts and deliver sales presentations from any location that has an Internet connection. They routinely create *ad hoc* audio- and Web conferences from mobile devices to remain in touch with prospects and colleagues from around the globe.

Although it was at first misunderstood by the business world, presence management is now filling a critical need for those looking to better manage business communications. Presence management is a powerful business tool that helps organizations shorten sales cycles, improve operations, enhance customer service and control costs. It is a flexibile technology that can be applied in ways that make the most sense for your business, whether it is a company-wide deployment or a tactical deployment to maximize the productivity of a given department. Strategic use of presence management greatly enhances the value of Voice over IP technology, and most importantly, provides a sound business rationale to invest in converged communications. IT

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How AdvancedTCA will Revolutionize Carrier Infrastructures

Everyone has experienced the benefits of standardization. From railroad gauges, to power outlets, to systems of weights and measurements, standardization has always led to improved efficiencies, cost savings and the benefits that come from interchangeability. There are some arenas where standardization is still not the norm. Do you remember Martha Stewart's impassioned plea to the CEO of Sony to do something about the plethora of power adaptors needed for the wired traveler? English and metric units are still competing to be the global standard.

ATCA, the Advanced Telecom Computing Architecture, is bringing all of the benefits of hardware standardization to the carrier and enterprise. Carriers in particular make long-term investments in infrastructure and would like to reduce their reliance on particular vendor's hardware platforms. By adopting the ATCA standard they are able to invest in large scale deployments of chassis-based solutions while preserving the ability to add new components and service offerings over time even if the original vendor may have gone out of business. The ATCA standard provides for a common hardware platform with serial bus that can accommodate the hot-plug, hot swappable, redundant deployments that are required for easy servicing, maintenance and manageability.

ATCA is an open architectural specification from the PCI Industrial Computer Manufacturing Group (PICMG). PICMG is a consortium of more than 450 companies who collaboratively develop open specifications for high-performance telecommunications and industrial computing equipment. A previous specification they developed was CompactPCI.

ATCA is the PICMG's most ambitious initiative ever, and the effort is now starting to produce the intended results in networking systems ranging from server platforms in the enterprise data center to security provisions at the perimeter. The standard specifies a form factor for individual boards in a chassis that are 8U by 280 mm with a distance between boards (pitch) of 1.2 inches. These boards (nodes) can communicate using a range of interconnecting protocols and topologies provided by switch (hub) boards.

An ATCA chassis can contain up to 12 nodes and 2 fabric boards. The nodes can provide a plethora of functionality including:

- Storage for logging or caching purposes: RAID arrays in hot swappable packages can provide expandability and reliability. They can even be purchased from multiple vendors allowing the carrier to take advantage of pricing and capacity differences as the industry evolves. Gone are the days of replacing complete servers and hardware architectures just to keep up with a rapidly evolving technology.
- Computing: It is now possible to purchase ATCA blades from different vendors that are standalone high-performance high-throughput computers running Solaris or Linux on Intel, SUN, or PowerPC platforms. They can be used for WAN access, SS7/SIGTRAN signaling, media gateways, traffic processing, wireless base stations and softswitches. As ATCA begins to enter the enterprise application hosting could become a major use for ATCA solutions.
- Network processing: As carriers move more and more to value-added services there is a greater need for packet processing; first for QoS purposes but then also for rate limiting and traffic shaping. Voice over IP (VoIP) and video are driving demand for consistent low latency throughput, which means data and file transfers have to receive less priority. So-called deep packet inspection products look at packet headers and the first payload of a new flow to determine what kind of traffic is being transported and allow these priority decisions to be applied.
- WAN optimization: Today most compression and caching services are provided by proprietary standalone devices. As these devices move to the ATCA standard, carriers will be able to offer enhanced network throughput services to their customers.
- Virtualization: Network virtualization is a relatively new arena for carriers. By providing their end users with advanced network architectures that appear unique and segregated from all other networks with security, encryption and separate QoS car-

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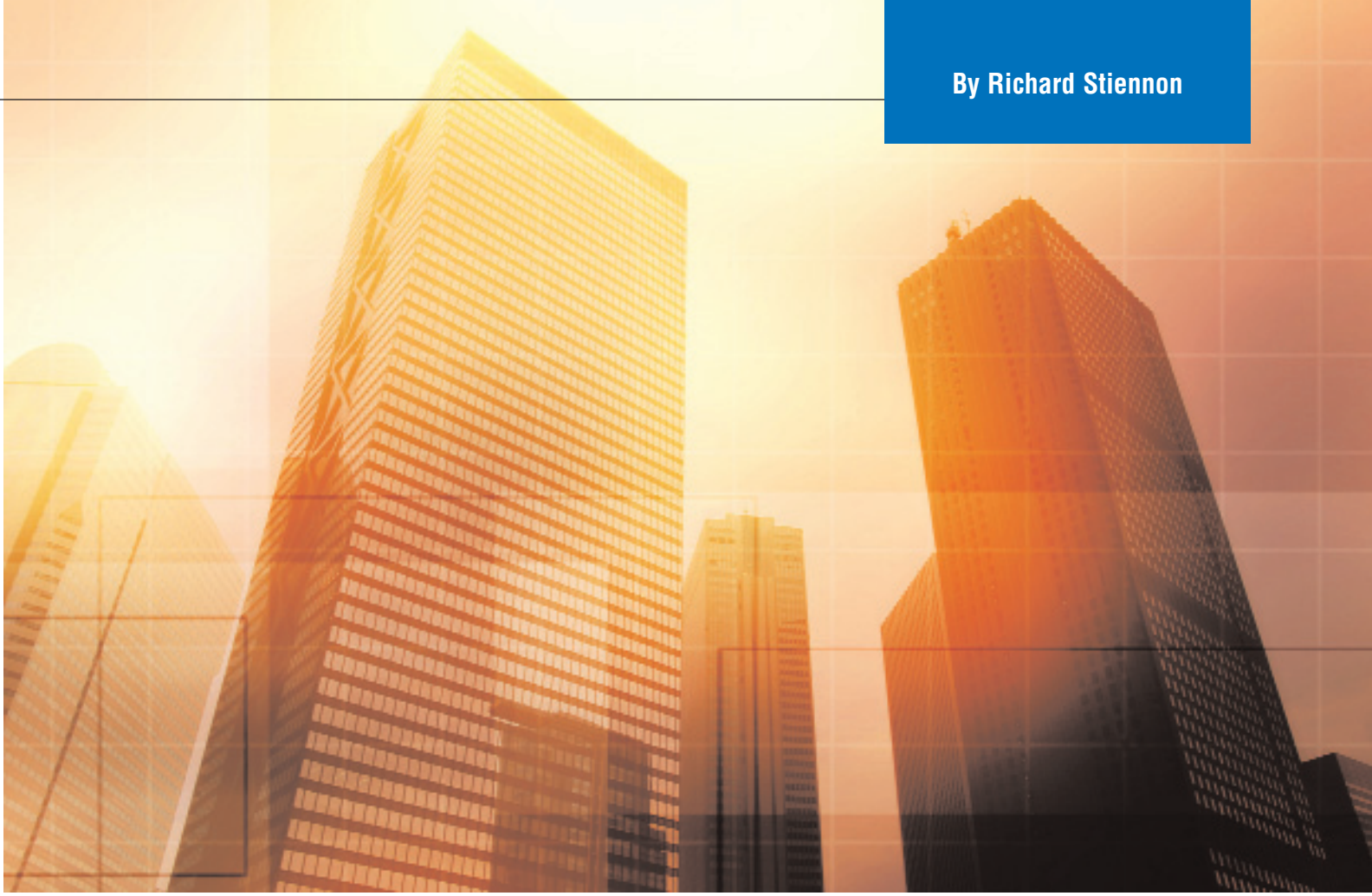

By Richard Stiennon

riers will be able to enhance their service offerings, all delivered on ATCA platforms.

All of these services benefit from being on an ATCA platform. The primary values that a standard chassis brings to the carrier are reliability, availability, serviceability and manageability. Multiple redundant blades ensure that a particular service is always available. Replacement blades or new capacity can be added without powering down the platform, ensuring uninterrupted service.

One of the fastest changing requirements for the carrier is security. The rapid rise of cyber crime and the proliferation of bot-infested networks and the spam, spyware and viruses they spread are forcing carriers to invest heavily in new technology to filter traffic that traditionally would have been let through. Carriers, tired of the management and serviceability headaches of multiple platforms from multiple vendors, are turning to ATCA platforms for network security functionality. Security services that are becoming common for carriers to provide and required for enterprises to be safe include:

- In-line anti-virus scanning: While most enterprises deploy AV on desktops and mail servers, the volume of viruses passing over most networks are posing a threat to network operations as well as overwhelming mail servers. Inline AV reduces the risk from exposure to viruses.

- Intrusion prevention: Worms and targeted attacks attack vulnerabilities within a destination network to spread infections, install Trojans, or steal critical information. IPS deployed in the network filters out all known attacks, significantly reducing the risk from network born attacks.

- Spam filtering: Huge amounts of network bandwidth are devoted to transporting spam. Carriers can reduce the load on their backbones by filtering and ultimately blocking sources of spam at their edge. They can also provide enhanced services by offering spam filtering services to their customers.

- Web content filtering: Once considered just an employee productivity issue, web content filtering is becoming a critical defensive measure as well. Today's evil hacker is more likely to install malware on a web server than spread it via worm or virus. End users have to be protected from these malicious sites. The most effective and efficient way to deploy web content filtering is within the network.

Before ATCA it was necessary for a service provider to gang multiple boxes in series to provide all of these security services. This added to overall latency, and had a very high cost in terms of CAPEX and OPEX. ATCA provides the operator with the capability of using compatible blades that can perform some or all of these functions, clustering the processing power while using the switch fabric to drive higher throughput and availability with load balancing and aggregation algorithms.

We are just beginning to see vendors coming together to integrate their various product offerings through the ATCA standard. First level integration is already possible with many products in that blades from one vendor can be installed in and powered by another vendor's ATCA chassis. Many value added vendors OEM chassis from a

common manufacturer thus realizing cost benefits from the high volume manufacturing process. Other hardware elements that go into manufacturing the individual blades are standard off-the-shelf components as well. Look for more manufacturers to announce OEM arrangements of this nature.

What does the future hold for ATCA? There are many exciting opportunities for bundled functionality that will make deploying new products and services easier for the carrier. Imagine, for instance, a "secure application hosting" environment that could include multiple servers, RAID storage, and complete content filtering security in a single chassis. Customers with need to host an HR, health care or financial application could deploy it quickly and efficiently on a single (or clustered) chassis. In the cloud security services such as VPN, firewall, IPS, and AV could be hosted on a single platform with a "portalized" management interface to give each end user control over their own security policy. Voice services that included QoS traffic shaping and virtual PBXs with routing and connectivity could all be hosted within the same platform. A next generation content delivery network (CDN) could be quickly deployed using ATCA platforms that contained the network management, server, and caching that are required.

Although we consumers may still express frustration over paying a costly amount for a proprietary battery charger for a new cell phone/PDA or wonder why we have to carry so many power adaptors when traveling overseas, we can take comfort and knowing that at least one facet of the daily challenges we face is being standardized. The Advanced Telecom Computing Architecture is fully mature and beginning to encourage innovation and interoperation that was never possible before. As it often happens with new standards, there is an introductory period that lasts one to two years as manufacturers invest in revamping their product lines. Then, as that conversion takes place and their customers start to insist on compliance with the standard, they start to find opportunities to leverage the standard by working with partners to deliver greater value by combining functionality. ATCA is just now entering that period where vendors and customers alike are reaping the benefits of standardization. Over the next two years advancements in carrier based services and product offerings will have the advent of the ATCA standard to thank for their effectiveness and profitability. IT

Richard Stiennon is the Chief Marketing Officer for Fortinet, (news - alert) a leading provider of Unified Threat Management (UTM) solutions. He can be reached at rstiennon@fortinet.com.

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"IPTV Myths" - Part One: Technical Aspects

In the next three issues of Internet Telephony, we will be running a series of articles authored by Hemang Mehta, product management director for Microsoft TV. As IPTV deployments around the world ramp up, the series will dispel some of the most common myths about Internet Protocol TV (IPTV). This first "IPTV Myths" article focuses on some of the faulty technical assumptions about IPTV. The second installment will focus on the IPTV experience and what consumers can expect, now and in the near future. Finally, in September, Mr. Mehta will examine some of the deployment myths related to IPTV.

Myth: IPTV is just sending video files over the Internet, the same as Internet TV, file downloads and podcasting.

The reality: IPTV appears to consumers on the television screen at the flick of a switch, just like broadcast TV or cable. Internet TV, file downloads and podcasting all involve delay and uncertainty, and in some cases, poor quality. This is the most basic misunderstanding of the term IPTV.

The explanation: IPTV has a number of far-reaching implications because the underlying delivery mechanisms are the same as the Internet; instead of a unidirectional TV broadcast, IPTV is a point-to-(multi)point, bidirectional service that provides, for the first time, a direct, dedicated return channel from the TV viewer.

IPTV channels are NOT sent over the Web. Instead, they are sent over specially built private IP networks that belong to telecommunications carriers. While streaming video and audio over the Web is done on a best-effort basis (often leading to a degradation of the viewing experience, i.e., macro-blocking, picture freeze, audio interruptions, etc.), dedicated IPTV networks are designed and operated to guarantee a quality-of-service level that allows the optimum enjoyment of the delivered content.

IPTV uses the same basic protocols that the Internet uses. This means that once a TV program has arrived somewhere, it can be stored, replayed, copied and retransmitted, as long as this is permitted by the content owner, using standard Internet techniques. It also means that IPTV-enabled devices can accommodate other services that are also carried via Internet protocol.

IPTV is a new way of implementing television, although it appears to consumers very similar to existing cable and satellite TV. But IPTV can offer some key improvements, such as fast channel changing, a much greater choice of content, and extensive content search functions. It can also facilitate richer interactive content-related services than other pay-TV delivery systems. Interconnecting devices that speak the same "IP" language means that phone calls can emerge from TV speakers, or that the calendar on your PC can interrupt your TV viewing to remind you of an appointment, and that you will be able to surf the Internet via your TV.

IPTV has gone from concept to reality in a very short period of time. Over the last several years, service providers have consolidated disparate voice and data networks into a single, IP-based service delivery network. Delivering a ground breaking service such as IPTV requires a complex and sophisticated ecosystem of technology companies developing entirely new software, chipsets, set-top boxes, encoders, network access hardware and components. As this system of moving parts evolves, integration and coordination occurs at every level, including ongoing product development, lab trials, consumer trials and rigorous testing.

Myth: IPTV is less secure than normal TV because it travels over the Internet.

The reality: IPTV content is actually far harder for hackers to attack than either cable, satellite or terrestrial encrypted pay-TV. The use of Internet Protocol technology and a two-way set-top box means that security messages-including authentication messages, confirmations, and decryption codes-can travel easily in both directions, to and from an IPTV set-top box, to multiple destinations in the operator's network.

The explanation: Existing security systems that prevent unauthorized viewers from watching pay-TV services are called Conditional Access (CA) systems. Originally these systems simply looked for whether or not a viewer had rights to view a particular piece of content. There are proprietary versions of CA that must be adapted to work with cable, terrestrial and satellite TV networks. But most CA systems, until recently, were based on the specifications from the DVB (Digital Video Broadcasting) Project, using its Common Scrambling Algorithm CSA encryption procedures.

There are numerous ways of storing decryption keys in both satellite and cable set-top boxes, but most of them rely on securely storing keys in a tamper-proof smart card or embedded security processor. This card is used to read keys that are sent alongside the content, which are in turn used to decrypt the content.

The usual commercial hacker attack on this type of system entails making a "clone" of the card, chip or set-top and then distributing copies of that "authorized" recipient. In satellite, and in many cases with cable TV, there are no return paths by which set-tops can talk back to a central system. This means that the set-top cannot send authentication data back to a central authentication server.

This is really a matter of setting a layer of conditions that the set-top must meet, and then granting access to the content when it meets them. This means that if a successful clone can be made, it can be freely distributed.

Once we introduce a return path to the system, as in IPTV, the authentication process can be two-way and frequent. If a particular set-top with a particular key has registered on the network, then it cannot register again and can be forced to re-declare itself every 10 minutes or twice a day, or once a week, at the operator's command. If a second copy of the same keys

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appears and tries to register, it is a relatively simple matter to request the original to re-authenticate and if it does, that means there is an illegal clone on the network, which can now be declined service.

The way most people imagine content being stolen involves decrypting the digital signal, which means a pirate has to get his hands on the individual content decryption keys and work out how the issuing algorithm works. This has virtually never been done in modern cryptography and such a brute force attack is largely no longer tried.

A much simpler way is to take the output to a screen that is addressed as an analog, and then re-digitize it. So pirates focus on intercepting the instructions to the screen of a TV, storing them and then re-digitizing them. In this way individual TV programs can be copied and distributed over the Internet. The best way of dealing with this is to operate with devices that have some form of analog copy protection or to insert a watermark into the content that will persist beyond re-compression and distribution.

Recently there have been numerous efforts to personalize this method, so that each watermark contains the identity of the set-top that created it, revealing which individuals are pirates. This is a good direction, although still in its infancy.

There has been some use of traditional CA systems among IPTV operators, but in the meantime these have given way to more advanced systems based on the Advanced Encryption System (AES) and PKI (Public Key Infrastructure).

This advanced system is devised to take advantage of the return path, which uses frequent re-authentications. These have usually been married to more sophisticated ways of expressing viewing and copying rights, and they tend to be called Digital Rights Management (DRM) systems.

One weakness of such systems is that when they are implemented purely as a software download there is a tendency to extract a device key from things that the software can see. These are also sometimes things that a hacker can see. The software can read component numbers and device serial numbers and with a little bit of hit-and-miss trial and error, one or two of these have had their keys broken very rapidly.

Although this is easily fixed by downloading a new algorithm to extract a different key from the equipment, it is possible to combine the tried-and-true formula of the CA community and the new DRM specialists. This can be done by placing part of the key in a secure location on a chip, which only the DRM software can extract, and which won't be available to visual or operating system inspection.

New methods have been developed by pirates to attempt to attack the AES-based IPTV content protection systems. These take the form of intercepting authentication signals and intercepting decryption keys, and forwarding these across the network to potential clones. Therefore, it is important to have a system that will not allow more than one copy of a device key on it at any time.

The war between piracy and content owners will continue, and future improvements in AES-style systems may focus on combining deeper usage knowledge into the authentication process. For instance, the line number for a specific DSL connection could be checked before allowing authentication, or usage data, such as the combination of channels that a viewer watched yesterday, could be used as part of the key. These are virtually impossible to copy or keep track of.

But at this moment in time the PKI systems using AES encryption provide a more secure environment than any other we know, especially when hardened further by using secret, secure device keys.

Myth: Net neutrality laws will mean that IPTV services could become illegal.

By Hemang Mehta

The reality: Net Neutrality laws, if they are passed, will make no difference to IPTV whatsoever, although they may make a difference to how popular video file download services and Web-based Internet TV becomes.

The explanation: Net Neutrality legislation, which has so far been defeated in Congress, is designed to safeguard existing services, not deny access to new services. It is fundamentally about the existing levels of quality in delivering high-speed Internet service.

If an Internet service provider (ISP) provides a good service to its customers in terms of download speed, or a poor service when measured by the same criteria, Net Neutrality is about every Internet destination getting the same treatment. As such, this legislation would be enacted by not allowing ISPs to apply varying priorities to traffic that comes through its Broadband Remote Access Servers.

Since IPTV is not about traffic that goes through the Broadband Remote Access Server, it can't be affected.

The most affected traffic is large files (such as video) being served through the Broadband Remote Access Server. This traffic is already congested and consumers rely on their ISP providing enough bandwidth to ensure this is reasonably loaded at each of its servers. But the legislation is not about ensuring there is sufficient bandwidth there-only that every service has equal access to the bandwidth that exists.

The fear behind this attempt at new legislation is that ISPs will begin to slow traffic if it is coming from a service, such as MSN or Google, in an attempt to prevent such services getting a "free ride" on consumer ISP services. The exception would be if the ISP is allowed to somehow share in that profit by making an extra charge.

This fear is ungrounded, and all dialogue along these lines has actually been about providing "improved" bandwidth to these larger players, not deliberately limiting bandwidth provided to them, and re-assurances have been made repeatedly by all the major ISPs that this is the case.

None of this affects IPTV in the slightest and we believe that in a competitive broadband economy, market forces would conspire against any individual ISP attempting such a strategy, with or without new laws. **IT**

Hemang Mehta is Product Management Director for Microsoft TV.

Delivering

Whether it's watching high-definition IPTV or receiving the latest call over your Packet8 Tango Video Terminal Adapter (VTA) or Worldgate's Ojo Vodeo Phone, you may have noticed that high quality video has forged new paths over IP networks.

The only inexpensive video technology that seemed dependable until recently had nothing to do with videoconferencing or videophones - it was the broadcast TV sitting in our respective living rooms.

Today, the situation has completely changed. A new generation of users are dabbling in video and like what they see. On the pay-TV home front, IPTV is bringing the ultimate video experience to us old, jaded, former NTSC-format viewers. And the long-awaited videophone is finally appearing in business and at home.

Take for example the revolutionary new Packet8 Tango VTA464 from 8x8 (news - alert) (http://www.8x8.com). This Video Terminal Adapter (VTA) takes the concept of traditional VoIP analog terminal adapters (ATAs) one step further by incorporating a high resolution 5-inch LCD color display and 180° rotating camera.

With the Tango VTA and its built-in router, you can enjoy Packet8's low cost unlimited local and long distance Internet phone service to any U.S./Canada phone number, and you can conduct face-to-face video conversations with your friends and associates.

Bryan Martin, Chairman and CEO of 8x8, says, "We introduced our Packet 8 Tango video appliance at CES. It targets consumers who want to easily add video to their VoIP calls in one or multiple locations throughout the house. We're now ready to launch a business version of this service enabling the desktop phone in your office to be used with our virtual office services. This will obviously bring videoconferencing into play. We also have some video bridging capabilities in the sense that we can do three-way video calls between multiple locations. We'll also roll out some features that focus on business productivity tools. For example, we have Outlook integration included in the device, so you'll be able to interface directly with your Outlook calendar and contacts. We also have a digital still picture application built in there and some other functionality which we're working on."

Martin continues: "We're attacking the business space by saying, 'You've already got this very useful business phone service. It's a replacement for your existing PBX or it takes the place of the PBX that you didn't have to buy. We're looking for applications that will enhance the business use of IP involving video'. You now have a really high-definition screen sitting there that can display a great deal of information for you and, if nothing else, can display your family pictures on your desktop when you're not using it."

"People will like the fact that with us they can make a video call on-the-fly without having to buy a $5,000 piece of equipment," says Martin. "Right now we've got the street price on these devices down to about $99. So you can get our IP phone for $100 or $199 with the appliance. This other device on your desktop, the VTA, will enable not only videoconferencing but also these various other applications and we think this will be a way to unlock a little more volume in the traditional videoconferencing space."

Worldgate Communications (news - alert) (http://www.wgate.com) has also tackled making videophones both simple and commonplace with their Ojo Personal Video Phone (http://www.ojophone.com). The sleek, futuristic, Ojo relies on broadband to deliver a decent 30 fps and well-synchronized audio. It's $299 or $399, depending on the model, plus a $10 monthly fee that grants you unlimited Ojo-to-Ojo communications, worldwide.

Jim McLoughlin, Senior Vice President at Worldgate, says, "We began developing the Ojo in 2003 and in 2004. Our objective was to do a broadband videophone at relatively affordable consumer and wholesale prices. We think we've achieved that. We had a couple of engineers here who were quite brilliant when it came to video codecs. With the advent of H.264, SIP and some of the other voice codecs, we found that making an affordable video phone using the emerging concept of broadband was quite doable. And so we did it. We're now talking to just about every service provider in the digital voice business around the world and at this point there's considerable interest."

Video for the Masses: IPTV

The imminent decline of standard definition analog broadcast television is spurring major development and deployment of another kind of video-over-IP, high definition IPTV. Such a transition is not a minor matter. For example, IPTV has security concerns.

Steve Bannerman, Vice President, Marketing and Product Management at Narus (news - alert) (http://www.narus.com), says, "If you think about the security implications of a real-time IP-based service such as video, they're very similar to VoIP. Security can be broken down into three different buckets: The first is the notion of authentication. Are you who you say you are when you're requesting one of these things? Sometimes it matters and sometimes it doesn't. It doesn't matter whether you're requesting a video from YouTube, but if you're trying to join a confidential video call, then authentication matters. We at Narus don't generally play in the authentication space."

"The second security area involves maintaining the integrity of the content itself," says Bannerman, "making sure the content as it leaves the encoder or streaming server is the same content that is received. In this case, I'd say that it's probably more difficult to hi-jack a video stream and do something nefarious with it than it is to grab a voice stream, since with voice you can use man-in-the-middle attacks. Still, protecting the integrity of

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By Richard "Zippy" Grigonis

the content matters in video."

"The third security area is the notion of maintaining not exactly the quality of service [QoS] of the content, but the experience that the user gets when they actually watch and interact with the content," says Bannerman. "You need to maintain the integrity of the path that the stream takes from its origin to its destination. That's where Narus has the most impact and that's what we really care about."

Pierre Ehsani, Narus' Senior Project Manager, says, "The products we have are the NarusInsight Secure Suite and our NaurusInsight Discover Suite. These products are about ensuring the integrity of the content's pipes and path, such as ferreting out anomalies that suck up bandwidth or cause a poor user experience. We give carriers the tools they need to tier their services to be able to understand which customers have signed up for their Platinum packages and make sure that they're routed to the networks that have the most available bandwidth, and matching the resources to the users. That's really our focus. We leave the authentication and integrity of the content to other vendors."

Security concerns may loom large in the world of video-over-IP, but there are still many technical considerations that pop up too, especially as the public network becomes larger and more diverse.

At Inlet Technologies (news - alert) (http://www.inlethd.com), a provider of advanced encoding and quality control solutions for new media including content over IP, John Bishop, Senior Vice President of Business Development and Product Strategy, says, "Not all IP distribution problems have been solved. We at Inlet Technologies are focused on getting these new media formats out over the new networks - and by that I mean largely IP-based networks. About 10 or 15 years ago, the content creation world was really simple. We all dealt with MPEG-2 compression, and that was it. The content was formatted for one type of viewing device, the television. Things have definitely changed."

"The quality of experience that can be delivered over the Internet, mobile phone, media center PC, Xbox, or an IPTV service is very compelling," says Bishop. "At the same time it presents a huge challenge for those creating content, because it's no longer a one-format, one-viewing device world. With the new networks being the Internet and anything IP, we know that all broadband is not created equal. At my house I've got an 8 Mbps broadband connection; my neighbor about a half-mile up the road gets about 768 Kbps. Delivering content over IP means different things to different people, because the connectivity issue is still something that's being fleshed out. We're getting better at it here in the U.S., but many in the international community are ahead of us, particularly when you look at mobile phones."

Good old fashioned testing (or rather newfangled next-gen IP Communications testing) is always called for when there are concerns over a user's Quality of Experience [QoE].

At Spirent Communications (news - alert) (http://www.spirent.com) companies use Spirent's lab test solutions to evaluate the latest technologies, from wireline to wireless to satellite. As new services and applications appear, Spirent's tools for service management and field testing are used to improve troubleshooting and quality. Spirent also helps enterprises and governments to secure and manage their networks.

Spirent's Director of Business Development, Mike Soos, says, "The industry often gets caught up with bits and bytes. But the subscribers are more concerned over whether or not they have a good picture and sound on their TV. So we help get the quality of experience for service provider customers to be at the level desired by the typical individual subscriber."

"With us, things start in the lab, in our 'pre-deployment phase'," says Soos. "We determine whether a given device and technology will scale. Is the basic configuration correct? What happens on Super Bowl Sunday during the half-time show, when everybody switches to the Victoria Secrets Bowl? Can the system handle that?"

"This leads us into the provisioning aspects with which we're involved," says Soos. "In the early days of IPTV it took between one and four visits to get a subscriber up and running. So we focused on how to get the Day One scenario right. You've got to get it right the first time. You can get things right in the lab, but a misconfigured DSLAM can cause things not to work."

"Members of our mAX-IP product line hook right off of the DSLAM and you can test all the way through the copper segments to the subscriber and make everything work right the first day," says Soos. "Our solutions also help providers fix things quickly. It's a matter of watching the network, seeing when services are starting to fade out or are not quite right, and if they do break, how does it get fixed and fixed quickly."

Details from the Edge

At Openet (news - alert) (http://www.openet.com), CEO Niall Norton says, "Openet develops products and delivers solutions to telco operators in the network edge space, which involves providing software solutions between the network equipment and the large, downstream IT applications – for example, the classic billing or CRM systems. In that area, we take responsibility for the collection of network activity and traffic and the formatting of that traffic from multiple input platforms, whether that's a CDMA wireless platform or a WiFi or broadband platform. We can aggregate all of those transactions into billable records, thus enriching the traffic information with subscriber details or linking very disparate transactions on different platforms together so that if there are various policy of pricing decisions to be made, we can enrich the activity records and then pass the traffic to downstream applications, such as the billing system, or even outside to a third-party system, particularly if there are third-party content purchases."

"So, we provide operators with the 'network intelligence' or 'transactional intelli-

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gence' where we furnish the operator with a way to extract value at the network edge from activities performed by their customers," says Norton. "Sometimes that will include cost savings because we're able to provide a standard for very simple usage collection functionality across many different types of network technologies, whether that involves different radio frequencies or indeed conveyance types altogether such as broadband and wireless. There's a lot of convergence going on, and I don't mean that in the prepaid/postpaid sense, but in terms of the convergence of a lot of service types being delivered to customers. We're able to facilitate that too."

"The flip side of the coin is the enablement of new services on those platforms," says Norton, "and video-over-IP is actually a good and relevant example. Again, using the transactional intelligence concept, we enable operators to roll out a very relevant service very quickly."

Digital Content to Your Heart's Content

VeriSign's (news - alert) (http://www.verisign.com) Jeff Richards, Vice President, Digital Content Services, says, "We really made our foray into broadband in Q1 of 2006 with our acquisition of Kontiki, whose Kontiki Delivery Management System [DMS] is a software platform for peer-to-peer content delivery. At the time, Kontiki had about 25 million clients in the market and arguably was the lead 'legitimate' player, unlike BitTorrent and others that were out there helping people to share files illegally."

Richards adds, "Customers of Kontiki include the BBC, Channel Four and Sky in the U.K., and AOL here in the U.S.; AOL's video site in the U.S. also runs on the VeriSign/Kontiki technology platform."

"Today, in terms of video-over-IP, we play in three areas: First, we have customers such as the BBC that use our technology platform to distribute content in their own network. Second, we have an enterprise team that helps companies such as Coca-Cola, GM, Ernst & Young and Charles Schwab, share video technology over IP. Third, we have the content delivery network which was launched in January 2007, which also is picking up many large customers. Four years ago this content business didn't exist at VeriSign; now we've got about 800 people working on it," beams Richards.

Enea (news - alert) (http://www.enea.com) provides the standards-based software components that enable companies to deliver a flexible, high performance software architecture for high availability applications. The Enea Platform can be found in various next-gen network products including media gateways, session border controllers, radio network controllers, and softswitches.

John Smolucha, Enea's Vice President of Global Product Marketing, says, "In terms of delivering video-over-IP, I see most of the market investment being made in IPTV. I'm interested in how people will get the proper quality of experience that matches the expectations of we consumers. It's different than a lot of emerging technologies. Mobile phones are a relatively new technology with no built-in 'experience'. But we've got more than 50 years of being accustomed to a certain level of video quality."

"We've had some interesting rollouts at the industry's leading edge," says Smolucha. "Take Hong Kong. They're a couple years ahead of the U.S. in terms of delivering and they have some interesting characteristics that make it easier for them. The housing developments in Hong Kong's urban center have very short local loops, so the 'last mile' is easier to control and it helps them get to a higher quality of service. But in North America and Europe, the last mile is still a challenge for many because of the distribution networks. PCCW in Hong Kong started experimenting with video-over-IP on ATM networks in 1997. In 2003 they finally got to their first IPTV platform. From 2003 to 2007 they progressed to a million subscribers. That's a pretty long evolution. In this country, telcos such as AT&T have underestimated the challenge."

Beefing Up the Infrastructure for Video

Although the "fiber glut" is still with us (at least for the time being) allowing for large gobs of video to be sent around the world, the increasing complexity of the network and the emergence of new applications and services such as HDTV, multiplayer online gaming, and video conferencing, are driving several new requirements known as "manageable scalability" which means that the network infrastructure must get a facelift with some new, more flexible devices.

Fujitsu Network Communications (www.fujitsu.com), for example, recently introduced their new Fujitsu Flashwave® 9500 Packet Optical Networking Platform (Packet ONP), a whole new class of optical networking system that can deal with next-gen, media-rich networks. The Flashwave 9500 Packet ONP can deal with connection-oriented Ethernet, ROADM and SONET transport technologies in a single, addressable optical network class element.

Rod Naphan, Vice President of Planning, Fujitsu Communications, says, "Our focus is on the infrastructure for transporting video over IP networks. That includes optical platforms such as our Flashwave 9500. It speaks to the direction of the network. Today, Fujitsu provides the optical transport for the largest video networks from carriers in North America. The Flashwave 9500 platform will take these carriers in a direction that allows them to converge even more of their services onto that network. If they make a very large investment in a video infrastructure, that same investment then would be leveraged to include additional services on top of that network. That's really to focus on where we're going with the Flashwave 9500 Packet Optical Networking platform."

In other areas of the network, companies are retooling their wares, such as ECI Telecom (http://www.ecitele.com) that offers its IP DSLAM/MSAN for the delivery of video like IPTV and VoD services along with voice and data to offer triple-play capabilities. Recently, ECI announced for its Hi-FOCuS platform IMS (IP Multimedia Subsytem) capabilities at the access layer.

Thanks to the efforts of these and other vendors, the networks will be ready for video and video will undoubtedly become the most popular service to run over IP networks. IT

Richard Grigonis is Executive Editor of TMC's IP Communications Group.

Best Practices for Selecting IP Endpoints for Your Converged Network

Convergence - Who knew the application of this single word could bring such change to networking? Where will convergence stop? No one is sure. However, one thing is certain - IP will lead the way. This paradigm shift has caused us to not only rethink the way we design and implement our networks themselves, but the endpoints we choose as well.

First the basics. . . what is an IP endpoint? Well, one of the best definitions we uncovered was that of Roger Kay from Endpoint Technologies. He defines an endpoint as "devices that live at the network (TCP/IP) edge, are usually operated by a single user, and often have a human interface."

That definition seems somewhat broad, and it is for good reason. Before the acceptance of converged networking, the number of IP endpoints was limited. In fact, if you had asked someone to define an IP endpoint at that time, they would have likely said a PC, Server, or Network Printer. Today, that just scratches the surface.

Today the list of IP endpoints is growing daily. But even with some of the more popular endpoints like IP phones, Wireless Access Points, etc., how do you know which one to choose? Below are a few guidelines for selecting some of the most popular IP endpoints.

Depending on the size of your business, you could spend more money on phones than the actual phone system.

First, regardless of the IP endpoint you are evaluating there are some basic considerations:

- Cost - Cost is not just measured in the initial purchase price, you must also consider warranty, support, and licensing fees associated with these products. Also evaluate mandatory maintenance contracts, etc. that add to the Total Cost of Ownership of the product.

- Features - Make sure the device offers the features you NEED for your network implementation and business size. Many devices will offer what you need plus a host of features that you may never use in your network. These usually come with a lofty price tag as well. The bottom line is this - if you don't have a reasonable expectation for using the feature then don't pay for it unless you don't have another option.

- Powering options - You need to find out how the device is powered. For instance, if you are selecting an IP telephone or Access Point, does it accommodate Power over Ethernet (PoE) or does it require local powering? This fact alone will drive many decisions regarding location of devices, network power consumption, etc. Based on your endpoint selection, you may also need to purchase or replace other elements in you network to accommodate the requirements of the endpoint.

- Standards-compliance/interoperability - Is the device standards-based? Will it work with the other devices on the network and function correctly?

- Warranty - What type of manufacturer's warranty comes with the product? Especially in cases where there is a sizable investment, you want to make sure that your product is backed by the manufacturer in the event of defects.

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- Service and Support - If your network is critical to your business operation, you may want to purchase extended service and support. Look for plans offered by the manufacturer that provide various levels of service and response times. These will typically allow you to get the service you need at a cost you can afford.

With these basic parameters in mind, there are some additional things you might want to consider with two of the most popular IP endpoints: IP phones and Wireless Access Points (WAPs).

IP Phones

The number one item to examine in this category is cost. Depending on the size of your business, you could spend more money on phones than the actual phone system. Therefore the cost of the end point is a key consideration. With many IP PBXs today, businesses can spend between $600 and $1,000 per employee just for the initial installation. Those dollars add up quickly, especially for small and mid-size businesses.

Features of the IP phone are another consideration. While this may seem elementary, it is not. There are a wealth of features and button/line options available and today, of course the more features and buttons, the higher the cost. Some features warrant close evaluation and should have a greater impact on the buying decision.

First, determine if the phone is manufactured or supported by the IP PBX vendor. If so, chances are the phones are fully interoperable with the system, meaning that phones are fully configurable from the IP PBX system, and the features available with the phone are supported by the PBX. If not, interoperability and feature support may be a factor. Next, you will need to insure the phone supports the VoIP signaling protocol of the IP PBX , i.e. SIP, MGCP, H.323, or vendor proprietary.

License Fees are also a consideration when adding phones to the system. Does the IP PBX support additional phones without the need of purchasing additional licenses? If so, many licenses fees can only be purchased in "Packs", meaning you could be forced to purchase a 10-seat license Pack to simply add one phone. This should also be a consideration in the overall TCO when making a purchasing decision.

Powering is also at the top of the list. Is the phone 802.3af compliant or does it require wall power? This will affect the physical location of the phone and could impact the power budget for the entire network.

Everyone wants a phone with good voice quality. This makes CODECs are a major issue. IP phones should support both a low bandwidth and high-bandwidth CODEC for optimum clarity and voice quality. Look for products that at least support G.711 (toll quality) and G.729 (low bandwidth for remote phones).

Management and configuration are two areas to consider. Make sure the IP phone you select is easy to manage and configure. Many models on the market today require a trained professional for installation and configuration, requiring phone configurations to be manually changed via text or XML editor, while others offer a user-friendly Web-based Graphical User Interfaces making them simple enough for almost any user to configure.

After you have examined each of these items, don't forget to take a close look at some of the basic features. While these are sometimes easy to take for granted, they can make a huge difference in the users experience and therefore should be considered prior to purchase. Display - How large is it? Is it in color or black and white? Does it offer a backlit display? Line Keys - evaluate the number of keys offered and make sure it is adequate for your needs, both now and in the future. Color - While this may seem trivial it

can make a huge difference in certain settings. For instance, most medical offices request white phones because of their "clean" appearance. On the other hand, a retail counter location may request a black phone so that dirt won't be as evident. Also look at expandability. Can this phone accommodate an attendant console or button expansion module? Shared line appearance is especially helpful in smaller offices where there is no receptionist and everyone needs the ability to answer incoming calls, or view the status of the "lines" from any phone. Busy lamp field w/Direct Station Select (DSS is another useful feature for determining if internal extensions are in use or idle.

Wireless Access Points

You can't go to a restaurant, book store or coffee house these days without seeing a sign on the door for Internet access or WiFi. The increased demand for wireless connectivity has made WAPs commonplace in today's network architectures. However, as with most networking equipment, not all WAPs are created equal. Here are a few guidelines for selecting business-class WAPs.

Management is a key feature. Be sure to determine if the device is managed locally or through a centralized controller. Those managed through a centralized controller can be beneficial, particularly in situations where multiple WAPs are in use.

Powering options also need to be considered in selecting the best WAP. Know if the WAP you are considering is PoE powered or requires wall power. Many WAPs are placed in locations where wall power is not readily available or where it would be cost prohibitive. Also look at power consumption to make sure your power budget can handle the devices you have selected.

Security is a must. Make sure the device you choose offers WPA2 to secure your transmissions.

The number of WAPs you need and the amount of overlapping coverage required will be determined in most cases based on the physical environment. For instance, metal buildings may require access points or more overlapping coverage than buildings constructed out of brick or wood due to metal's reflective characteristics. Also note that all coverage areas are not created equal. Make sure the device(s) you choose will adequately cover the area you wish to serve. Depending on the type of WAP selected, you may need more devices to cover a specified area. Also be mindful of the issue of directional coverage. Many WAPs require an antenna to broaden their overage range. Support for standards like 802.11a/b/g is also important in determining bandwidth usage.

To properly prioritize voice and video data on your wireless network your WAP should include WMM support.

Wireless QoS capability is also an important factor to consider. To properly prioritize voice and video data on your wireless network your WAP should include WMM support.

Do you need an integrated or standalone WAP? This all depends on the application. If you are looking to cover a smaller, confined area or have limited hardware space an integrated WAP may be the perfect solution. There are also situations where there are going to be many WAPs and a portion of the service area can be handled by an integrated WAP. Standalone WAPs are commonly used to easily extend the reach of your wireless network.

Cost is always a factor, but should not always be the driving factor. The WAP you purchase from your local electronics store is fine for home-based applications, but in most cases, they are not designed to offer business-class service or features. So, less is not always better. Management is another key issue that separates WAPs. Business-class WAPs will typically offer management capabilities, some even with Web interfaces for ease of use. The ability to centrally manage multiple WAPs is especially important in situations where you have multiple WAPs deployed. Keep in mind that business-class features will carry a slightly higher price tag, but will offer better results for you and your customers.

As convergence continues to take hold in business networks, the list of IP end points will continue to grow. Regardless of the type of IP end point you are selecting, evaluation of the basic criteria outlined above will allow you to make a fair comparison of the available choices and hopefully choose the product that is perfect for your application. IT

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SIP Trunking: What Challenges Lie Ahead?

The allure of leveraging SIP trunking and eliminating the separate PSTN lines in enterprise deployments is very compelling. Initial deployments with SIP trunks to legacy PBX applications have shown early promise, delivering cost savings to enterprises while delivering equivalent features and quality to their legacy PSTN predecessors. However, a number of challenges await those that attempt to integrate end-to-end SIP solutions utilizing SIP Trunking carriers to connect enterprise SIP applications. This article will explore the issues that have slowed widespread adoption of SIP trunking with SIP applications.

The Promise of End to End SIP

A wide range of enterprises have jumped in and adopted Voice over IP (VoIP) and SIP within their enterprise as a way to consolidate facilities to an all-IP infrastructure, leveraging enhanced services and supporting a geographically dispersed workforce. Others have retained their existing Time Division Multiplexed (TDM) equipment, but leveraged SIP as a replacement for their legacy Public Switched Telephone Network (PSTN) trunking.

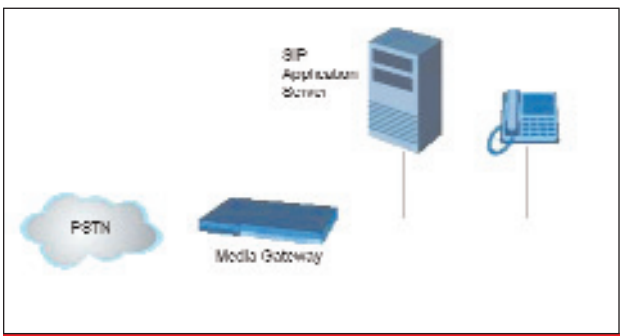

Figure 1. Enterprise SIP Application (IP-PBX) using the PSTN.

The feedback from those that have adopted VoIP ranges from very positive "we're glad we did it" to the tenuous "it sure was a lot of work and I hope this pays off". None-the-less, VoIP is here to stay as an increasingly larger percentage of IP-PBX, contact center, IVR, unified messaging and other new communications deployments are based purely on VoIP within the enterprise.

The vast majority of today's enterprise deployments are "SIP Islands", depend on traditional PSTN circuits to connect trunk circuits from their enterprise to the local carrier. This arrangement has allowed the enterprise to leverage SIP and migrate to new applications, while maintaining the well-established relationship with their "tried and true" local telephone carrier. (See Figure 1.)

Over the last few years a new collection of carriers has entered the market offering to replace those TDM circuits with SIP trunks - eliminating the separate TDM circuits and combine both the data and voice traffic for the enterprise into one consolidated broadband facility and significantly reduce costs. (See Figure 2.)

These end-to-end SIP applications are the focus of this discussion.

The Challenges

After a number of conversations with a wide range of end customers, Value Added Resellers (VARs) and integrators, a number of interesting and common issues seem to affect their ability to sell, install and service end-to-end SIP applications.

Interoperability

The first and most obvious issue is whether the enterprise SIP application is interoperable with the candidate SIP trunking carriers. One of the serious down-sides to SIP is there are many options that affect compatibility between systems.

One immediate example is the method for transporting DTMF: In-band (G.711), RFC-3261 or SIP INFO? Without both sides agreeing on a common transport method, the application and carrier will not be able to correctly relay DTMF key presses from the user to other applications like voicemail or IVR systems.

Beyond the DTMF compatibility issue, other more subtle but equally complex configuration settings include the following:

- Supported voice coders
- Fax Transport (G.711 or T.38?)
- Call Transfers
- Registration, frequency of re-registration and timeouts
- ISDN features including User to User Information transport
- Message waiting
- Etc.

Assuming all of the above configuration settings are figured out and the solution finally works correctly - the

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By Alan Percy

result only means this one application will work with this one carrier. The testing needs to be repeated for each and every application and carrier!

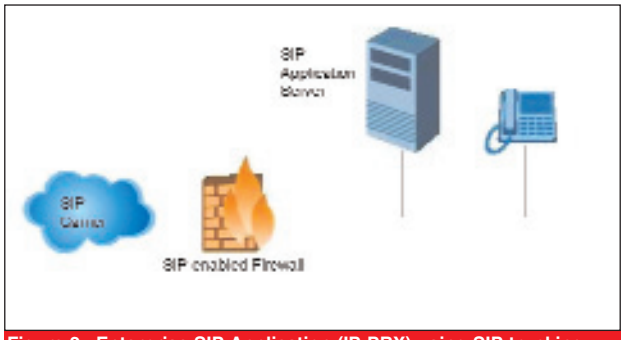

Figure 2. Enterprise SIP Application (IP-PBX) using SIP trunking.

"Carrier Lock"

Since no application vendor can possibly test with all possible SIP Trunking carriers, we are starting to see technical limitations or marketing agreements that would limit the choice of SIP carriers that could be used with each application.

Remember back to the Ma Bell thinking of the 70's that limited you to their company-provided black phones? History may be repeating itself.

Retesting

Okay, let's pretend for a minute that in some future date, every application somehow gets tested with every SIP carrier. Now imagine that one of the SIP carriers adds a feature or capability that would affect the interoperability to applications - now all those applications would have to be retested and re-certified with the carrier.

Now multiply this times the number of SIP carriers - does your head hurt yet?

Security

After interoperability, security is the second most discussed issue relating to SIP trunking. One of the side effects of using TDM circuits for trunking is that they are relatively secure and only carry voice traffic. It's virtually impossible to attack a data network through a TDM voice circuit.

Once you bring a data circuit into the picture, everything changes. Now you need to worry about a whole host of possible attacks, including:

- Denial of Service
- Trojan horses
- Spoofing and Man-in-the-middle
- Unauthorized recording and eavesdropping
- Call Detail Capturing (tracking who you call and for how long)
- Theft of services (unauthorized use of your network)
- Unsolicited incoming calling (SPIT)
- And more.

No sane IT manager would open their enterprise data network up to an IP Service Provider without some form of network protection. Many IT managers hope to use their existing firewalls to protect their SIP-based voice traffic, but standard firewalls don't understand the relationship between SIP and the RTP streams needed to pass voice conversations. Even "SIP Aware" firewalls have a limited ability to verify the origin of the incoming requests and open the appropriate pin-holes in the firewall for the RTP streams that carry the voice. Very few of these devices fully validate the SIP

call control and inspect every RTP packet to ensure the payload is valid and that the data rate demands of each call match the validated active calls.

Trust

While a few of the major carriers have jumped into the SIP trunking market, most of the carriers offering services to enterprises are smaller pure-IP carriers that are using the offering to compete with the majors. These pure-IP carriers are typically much younger organizations that in many cases don't own the broadband facilities or the staff used to install the services to the end customer. These smaller carriers contract with local broadband service providers who contract with installation technicians to activate the service. In some extreme cases, the services may be passed over the customer's existing broadband IP facilities with little or no coordination with the broadband service provider - creating a "parasitic" relationship.

These varied and complex business relationships many times result in serious support issues between the enterprise and the SIP carrier. If there is poor voice quality or dropped calls, who do I call?

The result of these issues has yielded a newly coined Telecom cliché:

"Nobody ever got fired for using TDM trunking"

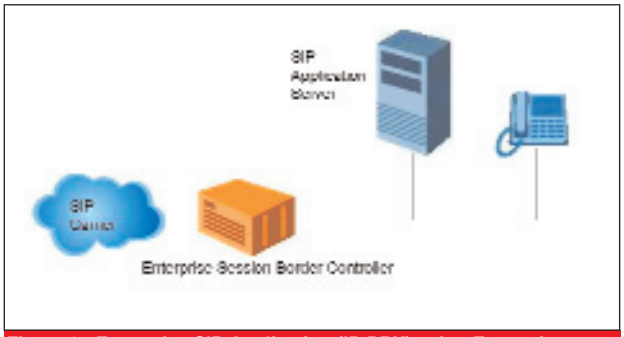

Figure 3. Enterprise SIP Application (IP-PBX) using Enterprise Session Border Controller.

However, the writing is on the wall and it is clear that the customer demand will eventually push the SIP carriers and equipment manufactures to solve these issues in the near future.

Enterprise Security/Interoperability Solution

It's clear that the key to solving many of the above issues is an intermediary that can play both the role of security agent and interoperability expert.

This is the role of the enterprise Session Border Controller (eSBC). Unlike the larger carrier-to-carrier Session Border Controllers (SBC) on the market, the eSBC sits at the enterprise premise and fits between the enterprise and the SIP carrier, mitigating many of the protocol and media incompatibilities while providing carefully managed security. (See Figure 3.)

Required security capabilities of the enterprise Session Border Controller (eSBC):

- Authentication
- Public/Private Network Address Normalization
- NAT Traversal
- Topology Hiding
- Session Admission Control
- Session-based Firewalling
- Encryption/Decryption
- Service Level Agreement (SLA) assurance
- Rouge RTP Detection and Deep Packet Inspection

In addition to the security issues, the eSBC will also provide a number of important features in solving or isolating the interoperability incompatibilities:

- Protocol conversion (H.323 to SIP, or SIP to SIP)
- Protocol variant interoperability
- Media transcoding (voice, video, fax and DTMF conversion)

Ownership

Today many of the SIP Trunking carriers are providing security devices for the enterprise premise along with their service. However, these devices are provided at their convenience, not based on the level of security required by the enterprise. Ask yourself: Would you let your Internet Service Provider (ISP) install and manage your firewall? Doubtful. In the end, it seems that the eSBC will be owned and managed by the enterprise - just as today the firewall for data traffic is typically owned by the enterprise.

Role of the Supplier

Enterprises and application developers have to focus on their applications - not becoming security experts and trying to keep up with the latest intrusion techniques. That's why virtually all enterprises have already partnered with a vendor to support their data security software or devices. It makes sense to leverage the expertise of the data security experts and stay focused on your business.

Expect the same will occur with SIP trunking and delivery of services over IP.

It makes sense to leverage the expertise of the data security experts and stay focused on your business.

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Enterprises will eventually choose a technology partner to secure their voice and video interface to the outside world and depend on leading-edge technology and expertise to protect their enterprise from the "bad guys".

Getting in the Game

In the end, it seems that only a handfull of vendors will be able to step up and play a role in solving the security and interoperability challenges created by greater penetration of SIP Trunking. The keys to holding one of these positions will be:

1. An demonstrated history of the related VoIP transport and media technologies
2. A range of established interoperability relationships
3. A deep understanding of the security challenges and solutions
4. Established OEM or channel relationships needed to deliver product to the market

Final Words

The promise of SIP Trunking is within sight and based on some early adoption rates, there is strong interest for secure, interoperable and reliable connectivity. The issue is whether the SIP trunking carriers and their technology partners are up to the challenge. If you do take the jump to SIP Trunking, choose your partners well - as the cliché goes, your career may depend on it. IT

Alan Percy is Director of Business Development at AudioCodes, (news - alert) a leading provider of Voice over IP and Session Border Controller-enabling technology. In this role, Mr. Percy is responsible for identifying market trends and building relationships to foster new business opportunities. Mr. Percy joined AudioCodes in 2001 and brings over 20 years of experience in the telecommunications, networking and wireless equipment industries. Mr. Percy holds a BA in Computer Science from the University of Buffalo, has had a number of papers published in various telecom technical journals. Percy is a frequent speaker at industry conferences and was recently named to the 100 Top Voices of IP Communications by Internet Telephony magazine. He can be reached at alan.percy@audiocodes.com

UMA vs VCC: Approaches for Dual-Mode Handset Services

Fixed/mobile convergence (FMC) is an exciting opportunity for operators. The ability to bring together fixed and mobile products into service bundles to reduce churn, or to leverage fixed-line IP networks to deliver mobile services, offers strategic and tactical advantages. However, different types of operators have varied motivations for bringing FMC services to market. Depending on the operator type and the service requirements, some technologies are more appropriate than others to meet operators' service needs and goals.

For operators contemplating an FMC service, two technologies - UMA and VCC - are at the center of a debate for dual-mode handset (DMH) service based on the new generation of Wi-Fi enabled mobile phones. While often viewed as alternatives to one another, in reality, their capabilities are not entirely comparable.

Defining UMA and VCC

UMA, also known as 'universal' mobile access, is a 3GPP standard defined by the mobile community to extend voice, data, and IMS services over IP access networks. The most popular application of UMA is for dual-mode cellular/Wi-Fi handsets. With UMA-enabled dual mode phones, subscribers receive seamless mobility and handover between the GSM network and WiFi in the home, office or public hotspot.

UMA is focused on delivering the mobile experience (services, user interface, and other capabilities) seamlessly to subscribers over the IP network. It is a solution for mobile and integrated (fixed and mobile) operators.

Voice call continuity (VCC), on the other hand, is an ongoing standards effort in the 3GPP and is not yet finalized. Estimates are that it should be completed (Stage 3) by the end of 2007. Some view VCC as an alternative to UMA for dual-mode handset service.

VCC uses SIP for call control. Because of this, its proponents say that a primary advantage of VCC is that it is "IMS-centric."

Because VCC relies on SIP, the ideal candidate for a VCC solution is an operator which has already installed/invested in SIP/VoIP infrastructure for voice and is looking to leverage mobile services. Today, this is typically a fixed operator, or the fixed division within an integrated operator.

Fixed operators have invested in SIP/VoIP as a response to alternative fixed line voice providers like Vonage and Skype because they are anxious to find a way to stem the loss of voice revenue to the mobile network. Because fixed operators have an immediate and pressing need to compete, work continues to develop the specification.

Evaluating the Approaches

For operators looking at a mobile/Wi-Fi convergence service, it's important to determine evaluation criteria for framing the decision. Chief among these decisions is to determine the service expectation for the subscriber. Does the subscriber have the same user experience on the fixed network as well as the mobile network? If not, why?

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By Steven Shaw

This is an extremely important point. Sales people must be able to sell around these issues and support/customer care teams need to be knowledgeable about service differences. Any service differences must be explained to the subscriber, and he or she must be re-trained to understand the new functionality. In the end, changing subscriber behavior is difficult, and any differences in service functionality should be considered carefully.

With UMA, the user experience is exactly the same. All services (voice, packet, and IMS) work the same on the GSM network and the WiFi network. The subscriber uses the same address book and the same interface/menus on the device. The primary difference is that packet services run faster over the broadband/Wi-Fi access network than over the existing EDGE/GPRS/UMTS network.

Additionally, with UMA the handset moves seamlessly between networks with mobility for voice as well as packet data services (streaming audio, video). Once configured, the handset automatically detects and attaches to the appropriate WiFi access points, thus providing a truly seamless experience.

For VCC, however, there are some glaring holes in the user experience. VCC provides for 'voice' call continuity. There are no provisions for delivering supplemental services (SMS, MMS, or ringtones) to subscribers when on the fixed network. It is clearly a different experience for the user.

Additionally, there is no support of packet services continuity with VCC. A key 'advantage' of VCC is its native SIP/IMS

support, which should be ideal for new value-added applications like streaming audio or video; yet seamless mobility for packet services is not supported.

Another criteria to evaluate with both UMA and VCC is the state of the standard and support for the standard. Every year, hundreds of standards are ratified yet never commercialized. Success in the standards arena is no guarantee of commercial success.

UMA was ratified by the 3GPP in April 2005. It is a mature specification that has been vetted through multi-vendor interoperability testing and commercial deployments. Within the GERAN group that manages the specification, updates and modification continue. UMA is a vibrant specification with an ongoing life driven primarily by operators choosing to deploy it.

VCC however, is still working through the standards process. While there are claims from some vendors of products that are "VCC-compliant," it is difficult to meet that requirement until the final specification is agreed upon. More importantly, vendor interoperability can not begin until the specifications are finalized.

Next to consider is, what is the state of the ecosystem for the technology? Are there handsets? Are major operators deploying? How much pioneer work will be required to bring the first products to market?

With UMA, handsets are available today from brands that consumers know and trust, including Nokia, Motorola, Samsung, LG, BenQ, and HP. Due to UMA's position as a ratified 3GPP standard, most handset vendors have developed UMA into their base code platform and can build the protocol into handsets as required.

For VCC, handsets are available from UTStarcom, (news - alert) Paragon Wireless, and others — not exactly mainstream consumer brands.

With UMA, Orange/France Telecom has deployments in its four largest markets - France, UK, Spain, and Poland) T-Mobile, Telecom Italia, TeliaSonera, and British Telecom have deployments of UMA-based dual-mode handset service. There is clear and certain operator momentum behind UMA.

Today, there are no announced VCC deployments.

The final evaluation to consider is how the technology supports the future

how does the technology support IMS services and applications in the short-term, and how does it fit with most operators' longer term evolution to IMS telephony?

Today, UMA transports packet services, including IMS/SIP based services, with seamless session mobility between the two networks. UMA is a radio access technology, completely agnostic to the services which run over it, where-

VCC actually becomes a transitional technology which must be phased out as IMS telephony phases in.

as IMS is famously agnostic to the underlying radio access technology. Therefore, UMA transports and provides seamless mobility for IMS applications just like it supports other mobile voice and packet services.

In the long term, operators are looking to de-commission circuit voice services in favor of an all-IP IMS network. Yet the fundamental principles which compel operators to deploy UMA today - low-cost, high-performance mobile services in home - still apply with IMS/SIP telephony.

It is important to note that this evolution requires an upgrade to today's 3G radio access network (UMTS/WCDMA) to 4G/LTE technology capable of supporting packet voice services. When this RAN upgrade is complete, operators will still need to leverage the Wi-Fi/broadband in subscribers' homes and continue to use UMA to provide seamless mobility between the two networks.

For VCC, as discussed above, mobility for IMS applications is a short-term problem as the functionality is not defined in the specification today. However, in the long run, VCC actually becomes a transitional technology which must be phased out as IMS telephony phases in. Because VCC is providing a bridge between the GSM/circuit core network and the IMS/SIP/VoIP core, as the circuit core is decommissioned in favor of the packet core, there is no need for the bridge.

Which Will Win Out?

With so many advantages for UMA, one may wonder who is driving the VCC specification today. Frankly, it is fixed operators. Fixed-line revenues have been under enormous pressure from substitution to the mobile network and disruptive VoIP competitors. Some fixed operators are pushing the VCC specification forward as a way to pull voice minutes off the mobile network and onto the fixed SIP/IMS network when subscribers are indoors.

Thus, VCC has its roots with fixed operators and the fixed divisions within integrated operators. UMA however, is a mobile-centric solution, designed to connect to a mobile core network and deliver mobile services over the fixed network.

Within integrated operators, eventually a decision must be made as to the future of indoor voice service revenues. Is the investment made in the fixed network (VCC) or mobile network (UMA) to deliver in-home voice services? In the future, will consumers use their fixed phone or mobile phone more?

Integrated operators like Orange/France Telecom, Telecom Italia/TIM, and TeliaSonera have all come to the same conclusion: mobile is the future and UMA is the technology for mobile operators to accelerate fixed-mobile substitution. IT

Steve Shaw is the Associate Vice President of Marketing for Kineto Wireless and an evangelist for UMA technology. Steve is a frequent contributor to articles on UMA and writes the UMA Today blog.

VoIP MARKETPLACE

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Consolidation Continues

By Greg Galitzine

I sat down to write a fairly simple wrap-up of the Mitel acquisition of Inter-Tel, and what it meant for the market. I figured that the two vendors were about to enter the realm of integration, ironing out their future product plans and focusing their vision for the future. I mean, at this point of the game, nothing ever happens to derail a merger, right?

Alas, nothing is ever over until the proverbial "fat lady" hits the last high notes of her aria. Certainly not when Steven Mihaylo feels that he can provide a better deal for Inter-Tel's shareholders, of which he, as former CEO, is still a major one. In fact, Mihaylo is reportedly the largest individual shareholder with approximately 19% of the company's total shares. He is the "beneficial owner" of 5,189,748 shares as of this writing.

Let's recap.

On April 26, 2007, Mitel Networks Corporation (news - alert) and Inter-Tel (news - alert) announced they had entered into a merger agreement whereby Ottawa, Canada-based Mitel would acquire Tempe, AZ-based Inter-Tel for $25.60 per Inter-Tel share in cash, representing a total purchase price of approximately $723 million (all amounts in US dollars).

Once completed, the merger would create a combined company with "anticipated revenues of over $800 million."

At the time, industry watchers generally had a positive view of the merger, which played out as yet further evidence of industry consolidation.

The day after the news of the acquisition broke, analyst/blogger Jon Arnold wrote the following: ". . . [it] will build two mid-tier players into a big, single mid-tier player who can dominate their space as well as better challenge the top tier vendors. Sounds like a good move for both companies, and it will be interesting to see how they combine their portfolios and manage joint customers."

Soon after, on May 15, Inter-Tel received a letter from Vector Capital Corporation, in which the latter expressed an interest in acquiring Inter-Tel for an all-cash price of $26.50 per share, a premium of about $23 million over the Mitel-led bid at that date.

Now, Inter-Tel is a public company and as such its primary responsibility is to maximize value to its shareholders. So in response to the Vector Capital proposal, Inter-Tel said its special committee had determined that Vector Capital's bid was reasonably likely to lead to a superior proposal, and so they notified Mitel of the committee's decision to engage in talks with Vector Capital.

Fast forward several weeks and on June 4, 2007, Steven Mihaylo sent a letter to Inter-Tel shareholders asking them to vote down the proposed Mitel offer and explaining that Inter-Tel should undertake a leveraged recapitalization, yielding "significantly greater present value than the current offer".

"Based upon discussions with my financial advisors," he wrote, "I am confident that the recapitalization I envision can be financed using some of the Company's existing excess cash and approximately $200 million of additional borrowing at reasonable cost. . . I formally asked the Board of Directors to consider this alternative in lieu of the Mitel buyout offer to be voted on by shareholders later this month. I am hopeful that they will thoroughly evaluate my value-maximization proposal."

Mihaylo concludes his letter by reiterating the point that he is not against the sale of the company for a fair price, to Mitel or anyone else: "If Mitel or another bidder offers what I believe is a fair price I will gladly support it; however, in the absence of that offer, I believe the Company has a better alternative through a leveraged recapitalization".

In the wake of the Mihaylo letter, Vector Capital Corporation has decided not to pursue an offer to acquire Inter-Tel.

Deadlines being deadlines, there was to be no resolution of this matter as my article went to press. A spokesman for Inter-Tel confirmed that an Inter-Tel shareholder vote was set to take place on June 29, 2007.

Avaya Goes Private

Not to be outdone by two rivals in the IP communications space, Avaya (quote - news - alert) agreed to a private equity buyout. The Basking Ridge, NJ-based company on June 4 announced that it had entered into a definitive merger agreement with Silver Lake, an investment firm focused on large-scale investments in technology-driven growth industries, and TPG Capital, a private investment partnership, for approximately $8.2 billion, or $17.50 per common share.

According David Molony, principal analyst at Ovum, "The deal for Avaya in one sense is a vote of confidence in the company and the IP telephony business. That is because private equity typically is looking for businesses with reliable cash flows it thinks can be improved quickly and substantially."

While the offer to purchase Avaya is unlikely to attract any counter-offers, the investors have inserted a break-up fee of up to $250 million if Avaya decides to back out of the arrangement. And according to customary documents filed with the Securities and Exchange Commission, the Merger Agreement contains a 50-day "go-shop" provision, which essentially means that Avaya retains the right to solicit and entertain competing proposals through July 24, 2007. If Avaya receives and accepts a better offer before that date, they would have to pay an $80 million break-up fee. If they decide to back out after that 50-day period, the fee would skyrocket to $250 million.

But that never happens, right? IT

Greg Galitzine is Group Editorial Director for TMC's IP Communications Media Group.

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Employee healthcare costs out of control?

- **Group Telecom Equipment Purchasing Plans**
- **Employee Healthcare Insurance Plans**
- **Solution Reseller Owner Training**

Most telecommunications solution providers have three things in common:

- Spiraling employee healthcare costs
- Lack of purchasing power
- Owner/principal training

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