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INTERNET TELEPHONY®

VOLUME 10/NUMBER 8 AUGUST 2007

The IP Communications Authority Since 1998™

Microsoft's **Big Communications Plans**

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Internet telephony is revolutionizing telecommunications through the convergence of voice, video, fax, and data, creating unprecedented opportunities for resellers, developers, and service providers alike. ***INTERNET* TELEPHONY®** focuses on providing readers with the information necessary to learn about and purchase the equipment, software, and services necessary to take advantage of this technology. ***INTERNET* TELEPHONY®** readers include resellers, developers, MIS/networking departments, telecom departments, datacom departments, telcos/LECs, wireless/PCS providers, ISPs, and cable companies.

By Richard "Zippy" Grigonis

Industry Roller Coaster Ride

Life is always a combination of good news and bad news, of great ups and downs. On the upside, the venerable Stockholm, Sweden-based telecoms solutions provider Ericsson announced it is building an impressive IMS (IP Multimedia System)-based network in Sweden for the Norwegian-based network operator Telenor ASA. The network, to launch later in 2007, will include an IMS-based, fixed-mobile converged (FMC) IP Centrex service that will be initially offered to enterprises. Both companies say that this is the first commercial converged IMS network to appear in Sweden that will offer IMS-based converged services for enterprises, at least in the first phase. In later phases, Telenor and Ericsson will jointly develop the Swedish market up to a leading position in the area of IMS-based converged services, and will make more of an effort to get consumers added to the network.

Telenor's state-of-the-art IMS network sounds like it will be a model for the rest of the world. It will help Telenor better utilize its resources now scattered about in different locations, such as their operations in Bredbandsbolaget and Glocalnet. Advanced Service Oriented Architecture (SOA) techniques will be used to rapidly integrate IMS solutions with various vertical businesses.

Ericsson is no stranger to IMS technology as it currently has 37 IMS system contracts for commercial launch and is conducting 80 trials worldwide.

On the downside, it was sunset time at SunRocket, the second largest supplier of Internet phone services — behind the only slightly-less beleaguered Vonage — for homes and businesses. From all reports, SunRocket didn't get around to informing its 200,000 or so customers that it was shutting down operations. Calls to customer service yields a recorded message, "We are no longer taking customer service or sales calls. Goodbye."

Industry pundits will no doubt chatter for the next month or so over the reasons for SunRocket's demise. Was it the not-so-profitable offer of a years' worth of unlimited phone calls for an upfront fee of $199 within the Canada, the United States and Puerto Rico? In any case, rival Packet8 (http://www.8x8.com) happened to share some infrastructure with SunRocket and is offering to help hapless SunRocket customers by offering them one month of free residential service along with waiving all customary start-up costs.

Fact is, companies such as SunRocket and Vonage face gargantuan rivals in the form of cablecos and major telcos, nearly all of which are in the process of rolling out vast, full-featured, triple and quad-play services offerings. The idea of simply offering IP voice service over a network operator that itself may be offering VoIP — an operator that may be openly or subtly blocking rival services running over that network — is starting to look a bit quaint.

The amazingly dynamic world of IP Communications represents not just a technological revolution, but an upheaval in telecom business models too. Merely swapping out circuit-switched voice with VoIP to save some money doesn't cut the mustard anymore. As more than one company has discovered, in this business you've got to be lean and mean, be able to turn on a dime, and 'think outside of the box' on a daily basis. IT

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

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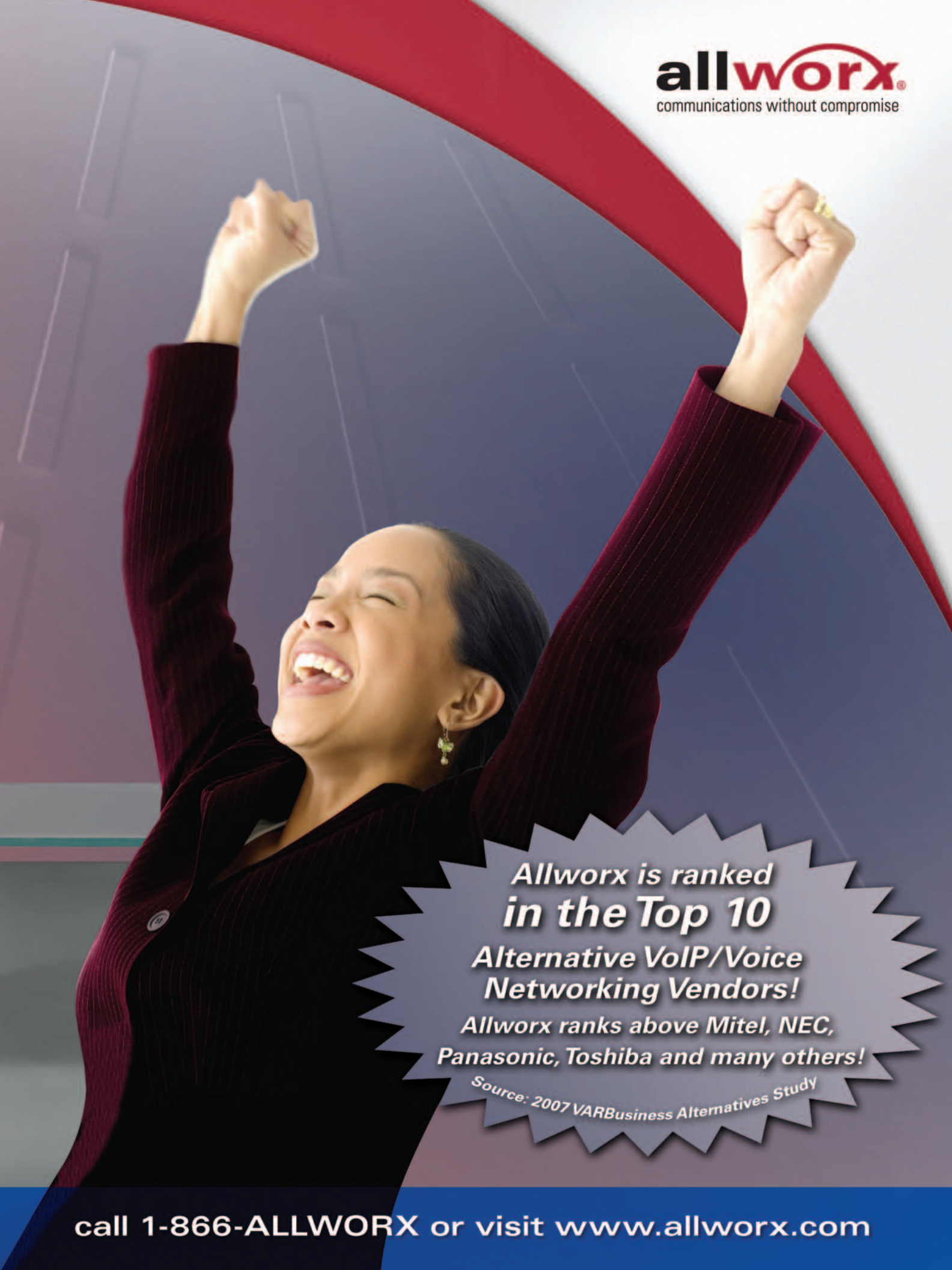
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***INTERNET* TELEPHONY®** magazine (ISSN: 1098-0008) is published monthly by Technology Marketing Corporation, One Technology Plaza, Norwalk, CT 06854 U.S.A. Annual print subscriptions: free, U.S. qualifying readers; $29.00 U.S. nonqualifying, $39.00 Canada, $60.00, foreign qualifying and nonqualifying. Periodical postage paid at Norwalk, CT and at additional mailing offices. Postmaster: Send address changes to: ***INTERNET* TELEPHONY®**, Technology Marketing Corporation, One Technology Plaza, Norwalk, CT 06854 USA.

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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.

SMS for SOS
Whether for personal or professional use, the reasons generally boil down to the need for anytime, anywhere access to communications. Cutting tethers to the landline helps companies grow their mobile workforce while freeing consumers to travel more. It also gives users the option to make emergency calls.
http://www.tmcnet.com/951.1

MSOs Shouldn't Fly Blind When the Phone Rings
MSOs spend billions to interest consumers in their voice, video, and data services. However, as intelligent as they are, cable operators' advertising and marketing efforts aren't getting through like they used to. Consumers are filtering their advertising like never before.
http://www.tmcnet.com/952.1

Is Taking it Home, Taking it Too Far?
Are at-home agents a reality or are they all hype? Recently, I was speaking with an IT manager at a company that operates a number of distributed contact centers and I asked them whether they had considered using at-home agents instead of regional contact centers. He laughed in my face. "No way" was his response. "Was he a pessimist or realist," I wondered.
http://www.tmcnet.com/953.1

Dual Revenue Streams: The Opportunity for Carriers and Content Companies
"What the Internet did to wireline phone companies must never happen to wireless" - if I've heard that comment once from mobile operators, I've heard it a thousand times. The Internet made telcos "dumb pipes." In their effort to avoid such a fate, wireless carriers set out to control what went on their network and participate in its economic return.
http://www.tmcnet.com/954.1

Enterprise Communication Solutions: Unifying Desktop and Mobile Phones
While improved productivity away from the office is vital, I also spend 20-40 percent of my time at an office desk. So, to enhance productivity and professionalism further, I need a solution for moving between desktop and mobile phones. Fortunately, two features address these transitions smoothly, seamlessly and completely: integrated call logs and session mobility.
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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.

Enhancing VoIP with Voice Peering
From the invention of the telegraph to the emergence of the Internet, the world has evolved and reinvented itself over and again. Technology has always created efficiencies and opportunities. Despite skepticism from some, history shows that every time there was a change for the better, investors and the public realized and followed. The latest trend in the technology world is voice peering, whether between carriers, enterprises, or anyone joining to form this new community.
http://www.tmcnet.com/956.1

On-demand: the new face of contact centers
This whitepaper considers the role on-demand contact center applications play in helping to solve the pressure placed on organizations - namely, how customer service organizations are asked to do more with less. It will focus on the key issues driving change in customer service organizations.
http://www.tmcnet.com/956.1

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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IMS technology has the potential to enable fast deployment of innovative, next generation converged services that are powerful, yet easy to use and manage. At TMCnet's IMS channel, you will find the latest news, interviews, and information from the entire IMS community. Visit the IMS channel regularly to ensure you keep up to date. Sponsored by HP.
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At TMCnet's Business VoIP Community, you will learn about the benefits, trends, and applications of business VoIP for SMBs, including insight into how companies save money using VoIP; how companies have been able to become more efficient and do more with less; how small companies surpass big companies in terms of their presence; and how companies get instantaneous access to their customers without the calls dropping into voice mail. Sponsored by Allworx.
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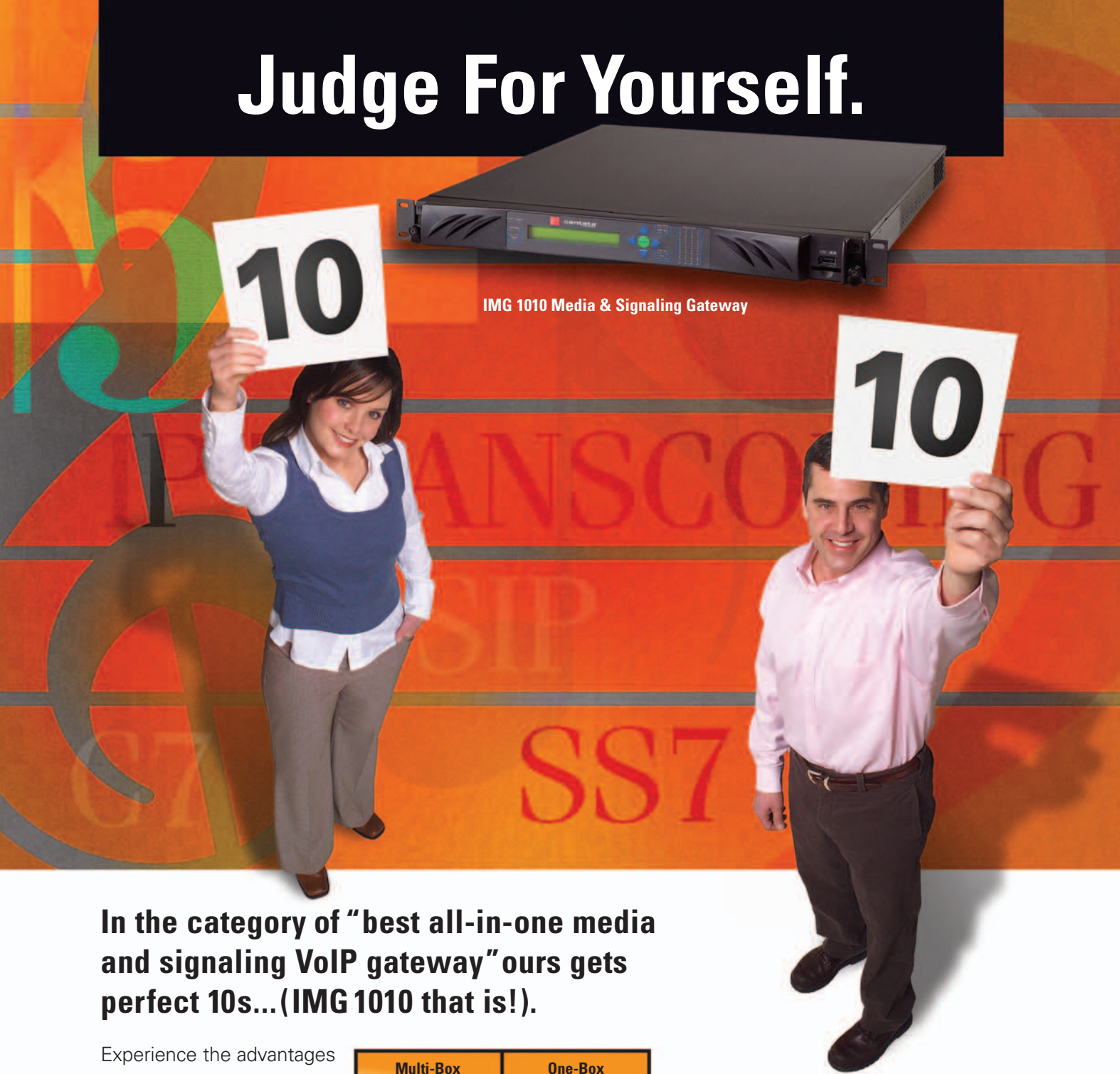

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In Harmony With Innovation™

By Rich Tehrani

Microsoft Pushes into Communications and Beyond

In 1997 or so I regularly met with Microsoft executives in charge of the company's telephony initiatives. At the time Mitch Goldberg and Mark Lee were the top spokesmen the Redmond-based software giant offered up to discuss where the company's products fit into the telephony ecosystem. If you have been in telecom longer than seven years you likely remember the industry was once dominated by computer telephony integration (CTI) technologies allowing PCs and servers to talk with telephone switches. Companies like Microsoft, Novell, Nortel, Lucent (now Avaya), Comdial and Inter-Tel distinguished themselves as leaders in this space and throughout the late nineties sales thrived.

In 1997 TMC launched Internet Telephony (ITMAG) to focus on the burgeoning IP telephony space. We were covering the topic in our sister publication CTI/Communications Solutions but we realized early that IP would change communications forever.

Microsoft (quote - news - alert) was one of the biggest innovators in the telecom market of the 1990s having launched a VoIP software product called NetMeeting. It pretty much did what Skype did (just not the p2p part) but was over five years earlier. We regularly covered this software and moreover, in the early days, NetMeeting is what many VoIP vendors used to show their products interoperated correctly. In 1999 ITMAG even gave Microsoft NetMeeting 3.0 an editor's choice award and a grade of "A."

It was around this time that the Internet became important to all tech companies. I remember buying a UPS system and seeing "Internet ready" on the outside of the box. Heaven forbid my UPS was not Internet ready. . . I am not sure how I would have dealt with the embarrassment.

Microsoft like many companies needed to focus on the Internet too. Many people who began working on various Internet initiatives in fact were part of the telecom group. Soon thereafter a good deal of the telecom team became the Internet team. Obviously this strategy paid off as the company rapidly produced IE, OWA and a number of other "Internet Ready" products. But as Microsoft became a serious Internet player, telephony was placed on the backburner.

We all know what happened next - the telecom meltdown. It is obvious that Bill Gates and Steve Ballmer would not choose this period to launch back into the space. But in the last few years the company has been making more and more noise about becoming part of the telecom world.

This is why last year we invited Microsoft's Zig Serafin, General Manager, Real-Time Collaboration Group, to be a keynote speaker at Internet Telephony Conference & Expo West (http://www.tmcnet.com/voip/conference) in San Diego, CA. After the presentation, some Fortune-class organizations told me that Zig's talk had made the whole conference worthwhile. I suddenly I realized how serious a player Microsoft wanted to be in communications and, moreover, how much traction they were getting in such a short time.

About seven months ago I asked Steve Ballmer some questions about Microsoft's unified communications strategy and I was blown away at how enthusiastic he was at embracing and evangelizing how his company's software will make communications work better. At this point I realized Microsoft was dead serious about being a telephony leader.

I was blown away at how enthusiastic he [Balmer] was at embracing and evangelizing how his company's software will make communications work better.

With this in mind, I recently visited the Microsoft campus in Redmond and met with people from various parts of the Microsoft team, and you know what? I am very bullish on Microsoft's potential to help reshape the telecom markets.

Microsoft is a huge organization and their speed to market has become visibly slower over the last five years. My outward impression of the company is that it has become bogged down by its sheer size. Moreover, I have read more than one story of how the company has lately lost some top talent to other tech players.

My perception was shattered by the parade of key executives I met with who head up various areas within the organization. I saw the same passion and enthusiasm in

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Redmond that exists at every entrepreneurial start-up I have ever visited. The only difference is that this company is no startup, it's the world's largest software company with one of the most recognizable brands known to mankind. Microsoft can move mountains if it gets enough of its organization to aim in the same direction.

Exchange

My day started off with Jeff Ressler, Director, Exchange Marketing, who says that the company sees communications as a broad environment which mixes 'the old' (which refers to telephony) with 'the new' (which refers to IM, video and other new modes of communications).

From his perspective, the goal is to unify the backend, the user experience and provide consistent administration while taking advantage of PC economics to drive cost down.

He referred to communications overload and a Harris study which shows the average person gets 51 messages daily in 7-8 locations. Microsoft's goal is to help reduce not only the number of places where messages reside but, through dissemination of presence information, they may even be able to reduce the number of messages you receive.

Also revealed in the meeting was Microsoft's goal of providing more web-based access to Microsoft solutions, allowing you to work without the need for a VPN. An interesting part of the conversation concerned how Microsoft itself has consolidated 70 Exchange Server locations into four. As they embrace communications they have made sure their solutions handle telecom in a manner consistent with consolidating server farms.

As part of the Redmond software giant's mobility strategy, Jeff mentioned that ActiveSync has been licensed some device manufacturers which, of course, means the power of unified communications can be enjoyed on-the-go. I mentioned some rumors I heard about the iPhone supporting ActiveSync soon and Jeff told me he couldn't comment. Perhaps this meant that there are serious talks with Apple in the works - he didn't say they aren't talking, after all. Then again, Jeff could have a really great poker face. Time will tell.

Jeff surprised me by mentioning technologies they are developing that would eventually target the call center. I imagine Microsoft's CRM software package would be a great fit for this initiative.

Jeff finished by mentioning that they think of the PBX as 'the last mainframe'. This is pretty accurate, in my opinion. He went on to explain that their similarities included the high cost of these systems and their proprietary service contracts. They believe Microsoft will help reduce the cost of communi-

cations going forward; their upcoming IP communications devices will be less expensive than traditional IP phones, yet able to do much more.

Unified Communications

My next meeting was with Michael Kerle, Senior Product Manager, UC Group and Huat Lim, Program Manager. Michael spoke a bit about Office Communications Server being the company's approach to the real-time communications world. I also got to see Office Communicator, which is a unified communications solution for the enterprise. In the demo there was an emphasis on safety and encryption and Kerle pointed out how using this product will reduce exposure to worms and viruses (when compared with other solutions). One big benefit of OC is that it takes your Outlook Calendar and telephone status into account when displaying your presence.

The system allows encrypted federation between companies so you can have your interoperability cake and security too.

Mike's main points are quite interesting and are best summed up as follows:

- Half the calls are internal in an average company.
- With proper presence information, you don't make calls if they are not needed.
- The Microsoft solution results in less wasted time, thanks to find-me, follow-me technologies.
- Microsoft won't replace the PBX.
- They want instead to integrate applications, mobility and presence into communications.

As Mike explained all of this, Huat waited patiently to show us a plethora of gadgets sitting on a table between Mike and I. Can you imagine how hard it was to concentrate on what Mike was saying when some of the shiniest new products to come out of Microsoft's R&D department were just inches away? Thankfully, I resisted the temptation to rudely grab a fancy new phone off the table while Mike spoke and grabbed a Danish instead, which, although having a higher calorie count, seemed more acceptable at that moment.

Jeff Ressler finished by mentioning that they [Microsoft] think of the PBX as 'the last mainframe'. This is pretty accurate, in my opinion.

Qualified Devices

Poor Huat was forced to sit in the room, listening to his co-worker talk about software and amorphous concepts like encrypted interoffice federation. It was no wonder that when he finally had the opportunity to speak, he unleashed a steady stream of gadget and device information. He said there are 15 devices qualified to work with Office Communicator and nine device vendors in the ecosystem. Other devices not qualified will still work but may require additional configuration. The benefit of being qualified is that your product seamlessly connects to the OC.

Huat made the interesting point that it costs $700 to install a telephone on Microsoft's network today and there is a $180 annual fee per employee associated with the device.

Office Communicator Devices

The discussion started with a demo of a simple USB phone code-named Catalina. We also saw a more advanced phone with 320x240 color screen resolution code-named Tanjay. This phone works over Ethernet and has PoE support. Expect these devices to be made by LG, Nortel and Polycom. Tanjay has a built-in fingerprint reader and excels at advanced telephony features like call forward and transfer. Street prices have not yet been set for these models.

As for the wideband codecs offered on all of the OC ecosystem products, all the devices certified to work with Office Communicator support enhanced codecs which sound far superior to traditional telephones. This is why new devices are needed for this communications offering. In other words, even the best, state-of-the-art phones from other vendors won't support Microsoft's codecs today.

This is actually great news when you recall Michael Kerle's first bullet point that half the phone conversations in your company could be wideband calls.

Continuing on my device tour, I got to see what is likely the smallest and largest products to work with Microsoft's communications solutions: the Bluetooth headset from LG/Nortel and the RoundTable which is a sophisticated video-conferencing device consisting of a slew of small cameras focusing on three mirrors arranged in a triangular fashion. Sophisticated software stitches together the resulting image and compensates for distortion. It also determines who is speaking and sends the appropriate image. I believe this device - or something similar - will replace the standard conference room speakerphone in the majority of offices within ten years. While I was vacationing a month ago, I used RoundTable to call into my office's conference room. The voice and video quality and voice detection were excellent. For more, check out Tom Keating's excellent review (http://www.tmcnet.com/949.1) of the workings of the RoundTable product on his VoIP and Gadget Blog.

Rich Tehrani had such a tremendous tour of Microsoft that his Publisher's Outlook just doesn't fit into this month's issue. To read this piece in its entirety, go to this web address: http://www.tmcnet.com/950.1

CommuniGate SYSTEMS

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Tadiran Telecom (news - alert) Organizes IP Communications Experience Tour

Tadiran Telecom has announced the "IP Communications Experience Tour," a nationwide, multi-city tour of Tadiran's Mobile Advanced Technology Centers (MATC). These 40-foot high-end, luxury motor coaches are fitted with Tadiran's state-of-the-art telecommunications solutions. The IP Communications Experience Tour is being organized to help visitors experience and test the possibilities in IP communications, first hand.

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Sun's Network.com Releases On Demand Financial Services Software

Sun Microsystems (news - alert) has unveiled Dynamic On Demand financial risk simulation and pricing service from Network.com offered by CDO2, a provider of innovative pricing and risk technology for organizations trading structured credit products. The new version of CDOSheet application, available from Network.com, delivers the latest pricing models and risk analysis technology in a secure and cost effective way.

http://www.sun.com

http://www.tmcnet.com/894.1

IPitomy (news - alert) Intros IP 1000 IP-PBX for Small Businesses

Telephone systems manufacturer IPitomy announced availability of a new communications system for small businesses, the IP 1000. Designed specifically for small businesses with 10 to 50 employees, the IP 1000 is an IP PBX with analog interfaces that can be connected to a VoIP service. It comes with web-based administration for easily configuring functions like remote extensions, branch offices, and call forwarding.

www.ipitomy.com

http://www.tmcnet.com/898.1

Cisco Unveils Mobility Solutions for Business

Cisco, (quote - news - alert) has launched a series of mobility solutions that offers secure connections and advanced services for developing businesses into more profitable organizations. Among these solutions is the Cisco Wireless Mesh Networking, a solution especially designed for organizations, educational institutions, and hospitality companies keen to expand their net connectivity. Other solutions include Location Solution, Outdoor Wireless Network Solution, Wireless Network Security, etc.

http://www.cisco.com

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Quickoffice v4 for MOTORIZR Z8 Launched

Quickoffice has announced the availability of its software for Motorola's (quote - news - alert) newest Symbian OS multimedia slider phone, the MOTORIZR Z8. "Quickoffice's (news - alert) mobile software enables users to easily view complete Word, Excel and PowerPoint text and graphics in a user-friendly way," said Mats Barvesten, VP of product management at UIQ Technology.

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Cantata (news - alert) Fax Platforms Integrate Quintum VoIP Gateway

Cantata Technology has announced the interoperability of its Brooktrout SR140 and TR1034 fax-over-IP (FoIP) platforms with Quintum Technologies' (news - alert) family of Tenor VoIP access switches and gateways. Both the Brooktrout SR140 and TR1034 fax platforms support real-time FoIP, providing companies with the ability to integrate fax servers into their VoIP network.

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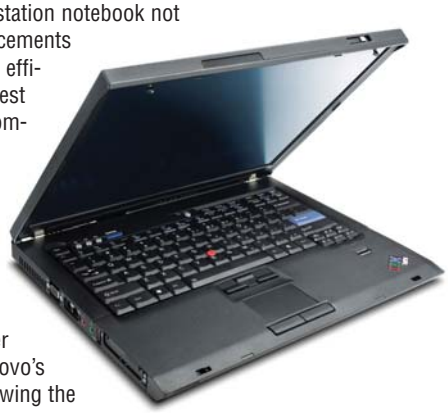
http://www.tmcnet.com/899.1

Green Technology Featured In New Lenovo ThinkPad Mobile Work Station

International technology company Lenovo, (news - alert) introduced today its latest notebook PC, the ThinkPad T61. The 15.4-inch widescreen mobile workstation notebook not only features new enhancements that drive innovation and efficiency, but is also the latest offering to include the company's efforts to reduce global carbon footprints through energy efficient products. The new notebook offers a cooler, quieter and more energy efficient solution over other earlier models and features Lenovo's new cooling system, allowing the notebook to run three decibels quieter than previous models and up to 10 percent cooler even under the most intensive tasks.



http://www.lenovo.com

http://www.tmcnet.com/897.1

AirMagnet (news - alert) Increases VoIP Traffic Visibility in WLAN Deployments

AirMagnet has announced the latest version of its VoFi Analyzer, version 3.0, which enhances network managers' ability to manage voice traffic on their WLANs. VoFi Analyzer 3.0 provides a comprehensive view of all voice traffic, regardless of its source (i.e., phone, air, or wire), thus providing more insight into network traffic than ever before — thereby allowing for more effective troubleshooting.

http://www.airmagnet.com

http://www.tmcnet.com/900.1

WiFiMobile (news - alert) Offers WiFi Smartphones

WiFiMobile has announced it is now selling smartphones with built in WiFi directly to U.S. consumers and businesses. The U.S. online store, supplies a broad range of unlocked WiFi supported cellular devices that enables end users to take advantage of mobile VoIP, email, and Internet browsing when in range of a WiFi access point. Businesses can also use these smartphones as extensions to their corporate IP PBX system. In this case the cellular device acts as both a standard GSM handset and as an extension to the company switchboard.

http://www.wifimobile.com

http://www.tmcnet.com/901.1

cyLogistics Unveils VoIP Telephony Billing Solution

cyLogistics (news - alert) has released Version 2.0 of its TrueBill billing solution for Internet Telephony Service Providers (ITSPs), LECs, CLECs and cable companies. "With this release, we have introduced the next generation of Telephony Billing that is VoIP centric," said Don Witt President of cyLogistics. "This release currently has 28 modules that allow the VoIP Telephony provider to pick and choose the features they would like to support and offer to their customers."
http://www.cylogistics.com

http://www.tmcnet.com/902.1

VoIP Launches Click4Me Communications Portal

Internet communications provider VoIP Inc. (news - alert) has launched a beta version of Click4Me, a free web-click calling service available at the company's new portal www.click4me.net. Click4Me allows users to connect to others through free calls without using the PC for actual voice communications, unlike all other web-enabled calling services. In addition, there is no need for a person contacting a registered click4me user to be a registered user as well. Click4Me also offers email, instant messaging and other popular calling features.
http://www.voipincorporated.com

http://www.tmcnet.com/903.1

Nortel (quote - news - alert) Wins US$135 Million Network Expansion Contract from Cricket Communications

Nortel will supply Cricket Communications (news - alert) with CDMA equipment to expand its network coverage. Under the three-year, US$135 million agreement, Cricket will use Nortel CDMA2000 1X and EV-DO Rev A equipment to expand their affordable mobile voice and data services to new markets across the U.S. using recently acquired Advanced Wireless Services (AWS) spectrum.
http://www.nortel.com
http://www.mycricket.com

http://www.tmcnet.com/904.1

ISPhone (news - alert) Unveils Asterisk Connector for Service Providers

In a bid to help Asterisk operate with software that uses the RADIUS protocol, ISPhone has introduced a plug-in called Asterisk Connector. Once Asterisk Connector is installed on an Asterisk server, it provides a bridge between Asterisk and any RADIUS-based system.
http://www.isphone.net

http://www.tmcnet.com/905.1

Allied Telesis Launches High Port Count Switch/Router

Allied Telesis (news - alert) has released the Rapier 48w, a combination of switch and router in a single device for WAN connectivity with up to 50 LAN ports. Developed especially for service providers using legacy backhaul technology, the product enables the expansion of their customer base with a range of new services without requiring major infrastructure investments.
http://www.alliedtelesyn.com

http://www.tmcnet.com/906.1

Openmind Networks Updates Messaging Filter

Openmind Networks (news - alert) has released the latest version of Protect for the mobile wholesale carrier community. Protect is already deployed in four continents to filter out undesirable messages that attack or defraud subscribers or network infrastructures. It also introduces revenue assurance initiatives to prevent leakage. The system filters out spoofed and faked messages that are impossible to bill, ensuring that network bandwidth is freed up for revenue generating traffic.
http://www.openmindnetworks.com

http://www.tmcnet.com/907.1

Motorola Expands Video Compression Portfolio, Acquires Modulus Video

Motorola (quote - news - alert) announced its successful acquisition of Modulus Video, (news - alert) a supplier of MPEG-4 Advanced Video Coding (AVC) compression systems. This acquisition provides Motorola direct access to Modulus Video's high-tech MPEG-4 AVC encoders.

Modulus Video creates MPEG-4 AVC compression systems used around the world. These MPEG-4 AVC encoders are a key component in many of the highly advanced IPTV deployments, facilitating delivery of high value video content in cable, broadcast, IPTV, and satellite networks.

http://www.modulusvideo.com
http://www.motorola.com

http://www.tmcnet.com/908.1

United Wireless Acquires Velocita Wireless

United Wireless Holdings has acquired Velocita Wireless, (news - alert) an indirect subsidiary of Sprint Nextel Corp. Subject to any required FCC approvals, Velocita Wireless will now lease certain FCC spectrum channels from various affiliates of Sprint Nextel Corp. Velocita operates a nationwide Mobitex wireless data network covering 93% of the U.S. business population. The network delivers data communications solutions, including email messaging, machine-to-machine (M2M), telematics, point-of-sale, and telemetry applications to its approximately 200,000 customers.
http://www.velocitawireless.com

http://www.tmcnet.com/909.1

XO Communications (news - alert) Joins the PAIX VoIP Exchange

XO Communications will join the Switch and Data's (news - alert) PAIX VoIP Exchange marketplace, designed to enable global, end-to-end VoIP call completion. XO can now exchange VoIP traffic directly with other PAIX VoIP Exchange members without relying on traditional telephone networks. The company will also able to offer members XO VoIP Origination and XO VoIP Termination services, allowing members to make and deliver VoIP calls nationwide across the PSTN.
http://www.xo.com
http://www.switchanddata.com

http://www.tmcnet.com/910.1

DPS Telecom Unveils Next-Gen GUI for the T/Mon Platform

DPS Telecom, (news - alert) developer of network alarm monitoring solutions, has integrated a newly enhanced graphical alarm display into its multi-protocol T/Mon alarm master. DPS Telecom designs and manufactures monitoring systems for operators of geo-diverse networks. DPS equipment provides status alerts, known as "alarms," to the appropriate technician or dispatcher, speeding up repairs and maximizing service reliability for customers.
http://www.dpstelecom.com

http://www.tmcnet.com/911.1

Comtech Solution (news - alert) to Support Real-Time Trading Function in New China Unicom Handsets

China Unicom (news - alert) has announced plans to introduce handsets equipped with customized module solutions from Comtech Group, Inc., a provider of customized design solutions for the technology manufacturing sector in China. The customized solutions will support an extremely innovative trading function in the new phones. The new function will offer real time market updates, comprehensive financial analysis and personalized stock price alerts. With the function, users will be able to connect with over 90% of the trading systems in China.

http://www.comtech.com.cn
http://www.chinaunicom.com.hk

http://www.tmcnet.com/912.1

Sprint Develops Wireless WAN Solution with Cisco

Sprint (news - alert) has introduced a wireless WAN solution equipped with the Cisco 3G Wireless WAN High-Speed WAN Interface Card (HWIC). Sprint and Cisco (quote - news - alert) have jointly developed the Cisco 3G Wireless WAN HWIC solution for use with applicable Cisco Integrated Services Routers (ISRs). The solution is part of the Cisco Internet Protocol Next-Generation Network (IP NGN) architecture. It also provides high-speed wireless data access via the Sprint Mobile Broadband Network for primary access to an IP/MPLS network solution or to provide true redundancy for high-availability corporate networking solutions.

http://www.cisco.com
http://www.sprint.com

http://www.tmcnet.com/913.1

Digicel (news - alert) Selects ECI's Ethernet Solution for WiMAX Net

Israel's ECI Telecom has announced that the Caribbean-based telecom company, Digicel, has chosen its optical and Ethernet solution to expand WiMAX broadband services. With the support of ECI, Digicel will offer cost-effective fixed and mobile voice and data communications solutions, including VoIP, to corporate customers.

http://www.ecitele.com

http://www.tmcnet.com/914.1

Adcore-Tech Develops New W-CDMA 3.5G Digital Baseband Technology

Mobile software maker Adcore-Tech, Co., Ltd., (news - alert) has released a new -CDMA 3.5G digital baseband technology and related communications platform. The company has reportedly started licensing the technology to partner companies for the development of mobile phone chips.

http://www.tmcnet.com/915.1

Dialog (news - alert) Launches Fixed Wireless Operations Based on CDMA Technology

Dialog Broadband Networks has launched its fixed wireless operations based on CDMA technology. According to Nushad Perera, general manager sales and marketing, Dialog Telekom, the company aims to provide their customers a complete package in the provision of multi-sensory connectivity, with uncompromising quality and the most competitive solutions.

http://www.dialog.lk/en/broadband

http://www.tmcnet.com/916.1

LG-Nortel (news - alert) Selects Global IP Solutions' VoiceEngine

LG-Norte in Korea has selected Global IP Solutions (GIPS) (news - alert) VoiceEngine PC Advanced and VoiceEngine Mobile 'soft phone' applications to power its new Phontage UCS (Unified Communication Solution) PDA and desktop PC telephony offerings. Users of LG Nortel's Phontage PDA will use GIPS VoiceEngine Mobile's on-the-move extension of their office phone system. The system works in the office or in the field using a built-in wireless LAN interface.

http://www.lg-nortel.com
http://www.gipscorp.com

http://www.tmcnet.com/917.1

Thomson, Nokia Siemens Team on Femto cells for 3G

Media solutions provider Thomson and network company (news - alert) Nokia Siemens Networks have teamed to develop 3G femto cells for residential data and voice coverage. "Our collaboration with Nokia Siemens Networks brings together two of the strongest players in their respective fields to enable operators realize the full potential of fixed-mobile convergence", said Bruno Fabre, Vice President of Thomson's Premises Systems Business Unit.

http://www.nokiasiemensnetworks.com

http://www.tmcnet.com/918.1

Alcatel-Lucent, (news - alert) Softbank Demo Wireless In-Building Solutions in Japan

Alcatel-Lucent is collaborating with Japanese service provider Softbank Mobile on a series of demonstrations of its 3G wireless in-building solutions in Japan. Aiming to highlight the benefits of home base stations, these demonstrations are a part of the company's plan to deliver high-speed mobile voice and data services to Softbank's customers in their homes and business locations.

http://www.alcatel-lucent.com
mb.softbank.jp/mb/en

http://www.tmcnet.com/919.1

Nortel to Create All-Wireless Office Environments

Nortel (quote - news - alert) has announced its vision for the 'Unwired Enterprise' that aims to enable businesses create all-wireless office environments. Unwired Enterprise will also benefit from seamless universal mobility both in and out of the office, enabled by true wireless broadband capable of supporting all communications needs.

http://www.nortel.com

http://www.tmcnet.com/920.1

Trapeze Updates Payment Card Industry Data Security Standard

Trapeze Networks (news - alert) has announced that its products are fully compliant with the latest version of the Payment Card Industry Data Security Standard (PCI DSS, version 1.1), issued by the PCI Standards Security Council. The standard has a number of requirements specifically regarding wireless network security, including implementation of WiFi Protected Access. Trapeze Smart Mobile wireless technology meets all these requirements as well as other wireless requirements specified in PCI DSS version 1.1.

http://www.trapezenetworks.com

SIP NEWS

http://www.tmcnet.com/926.1

Interactive Intelligence (news - alert) SIP Interaction Gateway Connects VoIP, T1 Lines

In an effort to help customers further leverage the benefits of the company's IP-based unified communications software suite, Interactive Intelligence has released its second-generation SIP Interaction Gateway. As an enhanced SIP

gateway, this tool enables connections between traditional trunk lines VoIP networks. The SIP Interaction Gateway also includes support for protocols such as EuroISDN, new fax support and a more scalable eight-span design.
http://www.inin.com

http://www.tmcnet.com/928.1

Dialogic (news - alert) Unveils SIP-Based VoIP Media Gateways for Microsoft (quote - news - alert) OCS 2007

Dialogic's new 4000 Media Gateway Series was specifically conceived with Microsoft's upcoming Office Communications Server 2007 release in mind. The DMG4000 Series combines a SIP-based VoIP media gateway subsystem with a Windows server running the Mediation Server software required for the unified communications application, in a neat, 1U rack mountable device, designed to lower the cost and the datacenter footprint.
http://www.dialogic.com
http://www.microsoft.com

IP CONTACT CENTER NEWS

http://www.tmcnet.com/929.1

Amcat (news - alert) Interactions Available for Distributed Contact Centers

Amcat has developed Amcat Interactions, designed to enable contact center managers to overcome the architectural restrictions they face with current systems. With the solution, contact centers are not restricted by artificial or outdated architectural barriers and thus can deploy a true enterprise communications platform. Amcat also offers its "Contact Center Software Without Boundaries" model to overcome barriers found in most current systems.
http://www.amcat.com

http://www.tmcnet.com/931.1

Alcatel-Lucent (quote - news - alert) Launches OmniTouch with CRM Integration

Alcatel-Lucent has launched the Alcatel-Lucent OmniTouch Contact Center Premium Edition, a contact center product designed for mid-market businesses and offering pre-integration with some CRM applications. This latest contact center product bundles the Alcatel-Lucent OmniPCX platform with Genesys 7 software, taking a "user-centric" approach that provides what company officials describe as "an advanced multimedia contact center with a fully centralized, graphical management environment that simplifies deployment and boosts customer value."
http://www.alcatel-lucent.com

http://www.tmcnet.com/932.1

True Tally Selects Envox (news - alert) Solution To Drive Automated Surveys

Envox has announced that Envox CT ADE has been chosen to power the phone-based survey solutions of True Tally. Envox, the global provider of IP-based voice solutions announced today that its widely used IVR development tool will help drive campaigns for this survey and database company. True Tally required a solution that was reliable and flexible and turned to Envox CT ADE to manage outbound surveys that enable organizations to understand their customer needs in order to better target their sales efforts.
http://www.envox.com

DEVELOPER NEWS

http://www.tmcnet.com/935.1

Zarlink (news - alert) Expands Voice Echo Canceller Product Portfolio

Zarlink Semiconductor has expanded its VEC (Voice Echo Canceller) product portfolio with a hardware and firmware platform for next-generation telecom equipment that supports voice services over converging networks. Manufacturers can use the highly integrated ZL38015 hardware and ZLS38233 firmware solution to simplify design, speed time-to-market and lower bill-of-material and resource costs.

http://www.zarlink.com

http://www.tmcnet.com/933.1

Avaya (quote - news - alert) Selects VoSKY Technologies as DevConnect Gold Member

Avaya has selected VoSKY Technologies (news - alert) as a Gold member in its Avaya DeveloperConnection program. The VoSKY Exchange business Skype solution interoperates with Avaya's traditional Merlin Magix and Partner phone systems, as well as Avaya IP Office, a converged voice and data solution for small and midsized companies. Thus, businesses can interconnect both traditional and IP-based Avaya phone systems to form a private voice network for free interoffice communications.

http://www.vosky.com
http://www.avaya.com

CHANNEL NEWS

http://www.tmcnet.com/923.1

Thirdlane (news - alert) Signs Distribution Deal with VoIP Provider ABP Technology

ABP Technology (quote - news - alert) has signed a multi-year master distribution agreement with Thirdlane, the software developer of PBX Manager for Asterisk or Asterisk Business Edition. Alex Epshteyn, President of Thirdlane, said, "ABP is an ideal partner for us because they provide marketing expertise, tech-support and training required to help resellers become successful. For us it's also great to work with one company that can cover the Asterisk community from Alaska to Argentina like they do."
http://www.thirdlane.com
http://www.abptech.com

http://www.tmcnet.com/924.1

Epygi Technologies, (news - alert) Packet Island (news - alert) Offer VoIP Net Management for SMBs

Epygi Technologies announced it will offer PacketSmart VoIP Pro Service through its worldwide channel of resellers. PacketSmart allows VoIP service providers and VARs to pre-assess SMB networks for VoIP readiness and provides continuous monitoring to ensure the carrier grade service level necessary for successful VoIP implementation.

http://www.epygi.com
http://www.packetisland.com

http://www.tmcnet.com/925.1

ZyXEL Teams with Jenne (news - alert)

ZyXEL Communications (news - alert) announced it has teamed with telephony and communications products distributor Jenne Distributors to expand its reach in the North American market. Under the terms of the partnership agreement, Jenne will be distributing ZyXEL products to its extensive network of channel partners. ZyXEL expects that this distribution agreement will address growing demand for converged solutions.

http://www.zyxel.com
http://www.jenne.com

http://www.tmcnet.com/936.1

Quickcomm (news - alert) Receives General Services Administration (GSA) Networx Telecom Contract

Quickcomm Software Solutions, a leading global provider of telecommunications expense management (TEM) software and services, announced it has received a United States, General Services Administration (GSA), GSA Schedule Contract. After an extensive, multi-year evaluation process, Quickcomm is now able to pursue business through GSA's Networx program and offer its TEM services to all Federal agencies.
http://www.quickcomm.com

http://www.tmcnet.com/937.1

Trilogy Dominicana Taps NAAP Software as its Telecom Asset Management Application

NAAP software (news - alert) enables telecom carriers worldwide to dramatically reduce operational expenses and establish network responsibility practices. Trilogy International Partners selected NAAP Software for their Operation in the Dominican Republic, after an in-depth evaluation of several asset tracking databases. "NAAP Software provides an in-depth level of asset tracking while being easy to implement, scalable and cost-effective; all qualities we were aiming to find in the application we were looking for," said Stewart Sherriff, Trilogy International Partners, Group CTO.
http://www.naapsolution.com

http://www.tmcnet.com/938.1

TAG's Intelitrak Changes the Way Businesses Manage Telecom Expenses

TAG, Inc. (news - alert) has launched a business information management service called Intelitrak that combines: Telecom rate procurement and benchmarking; wireline and wireless carrier contract negotiation; Telecom Expense Management (TEM) services; domestic and international invoice management; contract and inventory audit services; industry and carrier trend analysis; and ongoing, regular management consulting and account stewardship. TAG now provides these services in a single, monthly fee-based package.
http://www.i-tag.net

http://www.tmcnet.com/939.1

MTS (news - alert) Joins Telecom Expense Management Industry Association (TEMIA)

Mer Telemanagement Solutions (MTS) — a worldwide provider of innovative solutions for telecommunications expense management (TEM) used by enterprises, and for business support systems (BSS) used by information and telecommunication service providers — announced it became a member of the Telecom Expense Management Industry Association (TEMIA). TEMIA's mission is to promote the value of telecom expense management (TEM), enhance the category image through education and marketing, and develop industry standards to augment overall service quality.
http://www.mtsint.com

http://www.tmcnet.com/940.1

Symphony Spend Management Solutions Bolsters TEM Offering

Symphony Spend Management Solutions (SMS) announced that it has enhanced its Expense Management System (EMS) 11 TEM software program. The enhancements are in three key areas: adding a tool for automating electronic and manual data requirements, a self-service portal, and additional features to help clients manage expenses on a global level.
http://www.symphonysms.com

http://www.tmcnet.com/941.1

One-Hit Wonders No Recipe for Long-Term Telecoms Savings

TEM expert Aurora Kendrick James (AKJ) says there is a need for more IT and Finance Directors to concentrate on long-term telecommunications savings strategies rather than one-time price reviews. Indeed, AKJ believes that many IT and Finance Directors do not have a clear understanding of their real telecommunication usage and costs, and this lack of visibility often results in significant wastage.
http://www.aurorakendrickjames.co.uk

http://www.tmcnet.com/942.1

Telecom Expense Management Provider Rivermine (news - alert) Raises $8.7 Million in Third Funding Round

TEM solutions provider Rivermine announced the close of its third funding round. The company brought in capital investments of $8.7 million. Rivermine said the funds raised will be used to support further development of its TEM platform, enhance its managed services portfolio, grow its channel partner base, and expand the company internationally.
http://www.rivermine.com

http://www.tmcnet.com/943.1

ISI Telemanagement Solutions, Inc. Completes HIPAA Certification

ISI Telemanagement Solutions (news - alert) announced that its Infortel Select v7.4 telecom billing and reporting product has met the requirements of the HIPAA Academy Audit and Evaluation program for compliance with the HIPAA Security Rule. ISI becomes the TEM provider to achieve HIPAA Certification, and adds HIPAA to a host of other quality and security oriented certifications, including ISO 9001-2000, SAS 70 and Safe Harbor.
http://www.isi-info.com

http://www.tmcnet.com/944.1

TnT Partners with Tele-Review (news - alert) to Expand Telecom Expense Management Offering

TnT Expense Management (news - alert) announced a partnership with Tele-Review to extend physical audit services to its clients. Tele-Review has been in the telecommunication industry since 1972, supplying companies with audits and wireline inventory, with more than 95% of its customers receiving refunds and monthly deductions. Working with Tele-Review allows TnT to deepen its level of TEM service and round out its current offerings, including TnTs robust Telebase software, patent pending TEMView reporting tools and personalized approach to inventory management.
http://www.tntem.com
http://www.tele-review.com

http://www.tmcnet.com/945.1

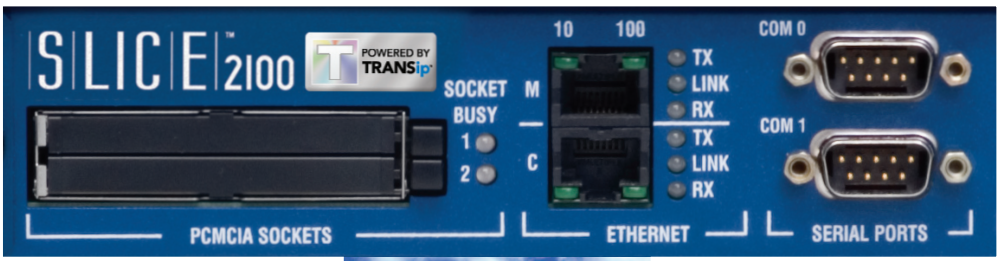
Tangoe (news - alert) Signs Partnership with Canada-based Pivotél

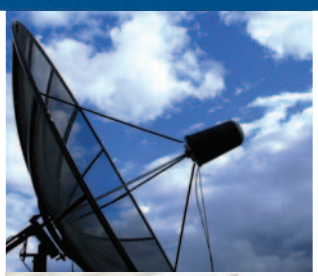
Tangoe, Inc. announced a partnership with Canada-based Pivotél, a full-service consulting, auditing, and communications management company. Under the agreement, Pivotél will utilize Tangoe's Communications Management Platform (CMP) software to provide its clients with a comprehensive TEM managed service solution. Tangoe will be Pivotéls premier communications management solutions provider in Canada, enabling Pivotél clients to experience reduced operational costs and improved operational processes associated with their communications infrastructure.
http://www.tangoe.com

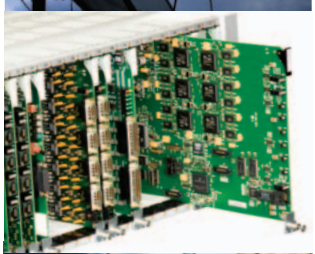
http://www.tmcnet.com/946.1

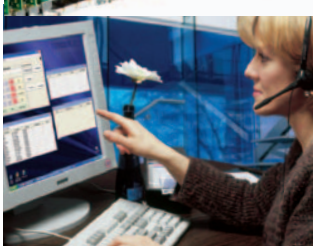
Avotus (news - alert) Launches Call Accounting Channel on TMCnet

Technology Marketing Corporation (TMC) announced that the Call Accounting channel, sponsored by Avotus Corporation, has been launched on TMCnet. The Call Accounting channel promotes solutions for tracking communications usage for all types of telecommunications including traditional PBX, VoIP, and mobile and wireless. In addition to information about Avotus' products, visitors can find valuable resources such as white papers, news alerts, feature articles and industry news.
http://www.avotus.com
http://www.tmcnet.com/channels/call-accounting









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Introducing **TRANSip™ technology,** exclusively from **REDCOM,** a comprehensive transformation solution that provides exceptional interoperability.

New SLICE™ 2100 with TRANSip technology: a stackable, fully integrated VoIP solution in a 1U platform.

SLICE 2100 with TRANSip is the world's slimmest, rack-mountable, multi-use switching system. Integrating a SIP based VoIP Call Manager and a feature rich Media Gateway, SLICE 2100 offers the network and user features of the REDCOM HDX. SLICE 2100's distributed architecture provides exceptional system reliability and availability.

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- POWERFUL IP FUNCTIONALITY
- SEAMLESS COMMUNICATIONS BETWEEN IP & TDM
- SUPERIOR PROTOCOL & MEDIA SUPPORT
- ACCURATE DATA COLLECTION FOR IP & LEGACY SUBSCRIBERS
- FLEXIBLE & PRIORITY ROUTING

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Getting the Word Out

By Tony Rybczynski and Hugh McCullen, Nortel

How often do you need to get information to your staff across multiple sites? Much of the buzz on Unified Communications is around people-centric communications and how this can improve personal, group and overall business effectiveness. However, in most enterprises it is likewise important to unify multimedia communications focused on group communications, in the form of management information sessions, business updates, training and announcements. While many enterprises undertake various forms of group communications and e-training, multimedia technologies are often employed in a silo'ed fashion. What are the best-in-class practices, services and solutions that are focused on end user satisfaction and drive effectiveness and productivity?

Audio Conferencing. The traditional approach of reservation-based conferencing through a service provider, is expensive and cumbersome and inflexible. In-house meet-me conferencing on the other hand, provides each employee with a personal admin-free reservation-less bridge. Our statistics indicate that ease of use drives a usage increase of 20%. An large enterprise can reduce traditional audio conference expenses by 75% with a payback in 6-10 months by bringing audio conferencing in-house.

Video Conferencing and Broadcast. Room-based video conferencing supports live, real time, interactive video/audio calls with internal and external locations, and allows participants to see as well as hear distant colleagues and collaborate more efficiently and effectively. Video meetings can be bridged across traditional ISDN-based room systems, newer IP video systems and unified communications desktop clients. Video conferencing systems require up-front investments in conferencing rooms with special attention given to seating placement, microphone, and screen and camera placement. These systems have traditionally suffered from set up complexity and associated delays. Newer systems are much easier to use, though many IT organizations have opted to work on a reservation basis, whereby the conference calls are available the minute people start arriving at the various sites.

At the same time, telepresence based on full-size high definition monitors, directional mikes and speakers, though expensive, are taking the experience to a new level. Telepresence provides immersive and interactive multimedia experience that truly reproduces face-to-face meetings and makes everyone sound as if they are in the same room. The user's experience is dramatically improved, with real eye contact, communication through body language and full life-size images.

Webcasts and Web Collaboration. Webcasting to employees and/or customers is a means of reducing travel costs and reaching a global audience in a cost effective, interactive manner (i.e. without requiring specially designed conference rooms). Webcasts can be offered on a pre-arranged basis for large audience events (e.g., over 100 participants), while self-service webcasts are more effective for smaller events. In all cases, participants can be invited by publishing the URL for the webcasts. Media streaming is an inherent part of webcasting and can take the form of audio and video associated with the speaker and synched with presentation material whether in the form of slides or video. Event portals should provide the ability to search content, submit short questions, quiz participants as to the acquired proficiency, offer text transcription, and allow professional moderation. Webcasting is a subset of web collaboration and includes online web-based meeting delivery, covering both web-based meeting collaboration, as well as virtual classroom training and eLearning delivery.

Unifying the Group Communications Experience. For large-scale departmental and enterprise-wide events, it's important to provide options to participants to 'get the message' to the highest possible percentage of the targeted audience. Live streamed video of the event can be provided to large venues such as cafeterias and auditoria. Webcast technologies can deliver the message to desktops and laptops wherever they may be (including WiFi hotspots), and ultimately live to mobile devices over public broadband cellular networks. Finally, archived webcasts can be made available on an on-demand basis and optionally as a podcast for additional flexibility in getting the message out. This is currently not an off-the-shelf opportunity. Leveraging the skills and experience of integration service providers may help an enterprise accelerate the realization of benefits of effective group communications.

First and Final Judgment on Multimedia Services: User Experience. The power of multimedia content delivery managed collectively as a single service model, is that real-time user experience data can validate and support these tools' effectiveness. The same infrastructure, apps and end points utilized to provide multimedia service availability can return real-time user satisfaction data which can provide new data related to ROI. There is no better way to "get the word out" than providing a multimedia experience that successfully empowers users and maximizes their investment of time. IT

Tony Rybczynski is Director of Strategic Enterprise Technologies in Nortel, and has over 35 years experience in the application of packet network technology.

Hugh McCullen is Leader of Nortel (quote - news - alert) Multimedia Services with experience in video transport, content delivery networks and rich multimedia applications that focus on communications and eLearning.

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ALTIGEN COMMUNICATIONS

By Brough Turner

Fixed-Mobile Convergence, User-Need Divergence

Fixed-mobile convergence (FMC) is a much-bandied term, but it's a vendor or operator solution in search of a user problem. It's all about technology, not users. Operators are building or planning converged core networks, based on IP, which can handle the needs of both fixed and mobile subsidiaries. But this is to save costs and simplify operations. Some operators are launching "FMC services," but these focus on converging technologies, not on converging user functions or benefits.

Users are interested in converged address books and converged voicemail, many are mixing their business and private lives, but none seek to converge their channels of communications.

If anything, recent studies by cultural anthropologist Stefana Broadbent at Swisscom show users increasingly favor different communications channels for different purposes. Fixed-line calls are for shared activities, i.e. to reach a business or multiple family members at a residence, while mobile calls are personal. Beyond that, mobile calls are for last-minute co-ordination. Texting is for "intimacy, emotions and efficiency." (Stefana was studying Swiss and French users who pay more for voice calls than SMS messages). Email is to exchange pictures, documents and music. IM and voice-over-Internet calls are "continuous channels" open in the background while people do other things. In short, users don't want convergence. If anything, they want additional channels of communications that serve different purposes.

Seen in this light, FMC services that target residential users, for example "BT Fusion" from British Telecom and "Hotspot at Home" from T-Mobile U.S., are incrementally improving traditional mobile telephony by expanding coverage and/or reducing what the user pays. There is no service convergence. This is a mobile phone. From the user point of view, it doesn't matter if the improved coverage comes from dual mode (GSM/WiFi) phones, femtocells or additional cell sites deployed by the operator. Indeed, FMC has been slow to emerge as early dual mode phones had limited battery life (addressed with evolving silicon and new protocols like WiFi Multimedia Power Save) and both UMA (Unlicensed Mobile Access) and VCC (Voice Call Continuity) technologies are fairly complex.

Business-oriented FMC services are a bit different, but the underlying issues are similar. Except for outsiders calling a main business number to obtain routing assistance, most business calls are made to a specific person. The best way to reach a person is to call or text their mobile handset. Meanwhile, mobile handsets have better address book functions than most PBX extensions, so both sides of business traffic (originating and terminating) are migrating to mobile phones. But mobile phone usage is expensive and by-the-minute, *versus* "free" for internal PBX calls and least-cost-routed for external PBX calls. It's the IT directors' issues of cost and control that have delayed widespread adoption of mobile telephony within enterprises. FMC technology promises to make enterprise mobile telephony affordable and provide the control (for example call logging), many IT directors seek.

Enterprises are one area where FMC may bring some user-visible service convergence, but for simple issues that are relatively independent of FMC. The first is a single address book. Address books should be synchronized and backed up with a master copy not on the phone — either in the cloud or on some form of personal storage. This is true whether you use FMC or not and the form of synchronization is likely independent of any of the specific approaches to FMC.

Next is a single voicemail box, ideally also accessible via other means, like email. This is "universal messaging" which has been touted for over a decade, and indeed, some enterprise FMC solutions incorporate universal messaging.

Finally, home and work overlap more and more. In many industries, workers access business email from home. And increasingly, private communications are invading the workplace. Workers, especially younger workers, expect to be plugged into their social networks while at work, whether by email, IM or mobile phone. FMC can help here as enterprise-centric FMC solutions tend to support multiple numbers and multiple devices, in other words, multiple identities.

So in summary, FMC may help extend mobile coverage into homes, but femtocells do the same, are simpler to implement and work with any handset. FMC can help an IT director get affordable mobile phone service within an enterprise, but the actual user benefits (synchronized phone book, unified messaging) are relatively independent of FMC. At the beginning we said FMC was a vendor and operator solution in search of user problem. A more productive approach for operators might be to address the user problems directly using whatever technology it takes. 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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By Hunter Newby

iPhone Comes Home

The Apple iPhone was launched June 29th with about as much media hype as any electronic device has in recent years and as far as hype goes it did not disappoint. There were people literally camping out on the sidewalk to buy them just like in the old days when concert tickets were going to go on sale the next morning and there was no other way to get them — well, good seats anyway. The utility of front row seats at a Rolling Stones concert is probably not as great as that of the iPhone, but at this point that is a matter of opinion. The coolness factor of camping out and being one of the first to own an iPhone is the modern-day coolness of camping out and being the proud owner of floor seats for the Stones show. If the concert wasn't for a few months you could get a lot of mileage out of "I got tickets" and it is probably the same amount of "cool-time" you'll get with the iPhone until the new version comes out. Beyond the hype, though, there is a real story here.

iPhone Pricing Plans

USD/month	59.99	79.99	99.99	119.99	169.99	219.99
Minutes	450	900	1350	2000	4000	6000

Table 1. All plans include visual voicemail, unlimited data (Email/Web), 200 SMS text messages, unlimited nights/weekends (with the exception of the $59.99 plan, which only includes 5000 minutes), rollover minutes, and unlimited mobile-to-mobile (AT&T customers only) minutes. Source: Wikipedia.

What Apple **(news - alert)** says the iPhone can do for you to better manage and ultimately change your life is indeed valuable. There are new Web 2.0 applications being developed by the user community that will drive innovation and bring new functions to the world in a truly Darwinian way. Some of the new Web 2.0 applications are being combined with some useful old-school needs such as "OneTrip" which is a shopping list manager. Having a good shopping list and not forgetting anything is probably one of the lowest tech things anyone can think of, but having list creation and management in your hand for when you think of what you need and then when you're out to buy it is very useful. Come home without the bread sometime and you'll know the feeling. There have been others that have tried to make these daily routine functions part of an electronic experience in the past, but the PDAs and other stand-alone devices haven't been as successful since users were required to remember to carry each of them almost all of the time in order to derive the value.

Folding multiple functions into one device makes sense because it gives the user one thing to have to remember to bring and learn how to use. What is particularly interesting about the iPhone is that it comes to us from Apple, one of the best brand names in the computer business, and it is a phone. Imagine that, Apple Computer's latest and greatest technological accomplishment is a phone. Although that may seem somewhat ironic it is very logical. The utility of voice-calling functionality is what really propelled the BlackBerry and adds life to any one dimensional text-only device. The potential future magic of the iPhone beyond the Web 2.0 apps is actually not in the voice calling plan itself though, but rather the "access" component of the network that brings the "voice service" to the device.

The "access network" component of the current iPhone is provided by AT&T. The access is what carries the data (email/web), SMS and voice. AT&T also provides the traditional voice switching for the phone calls. The iPhone pricing plan above includes a certain number of minutes for calls as a bundled package. This is not to say that the minutes are the only thing the user gets. The user gets unlimited data and this is very interesting. In the lowest-cost plan the rate per minute is about $0.13. That is actually very expensive when compared to what the real rate to terminate a call is. In the most expensive monthly plan the rate per minute is about $.03. This too is expensive, but when considering the utility of mobility itself coupled with voice calling it may be acceptable. The only problem is that you need to be a heavy user of minutes to justify $219.99 a month. That's a lot of money for most people. One benefit to all users is that aside from the AT&T network being necessarily all on-net, they have multi-laterally peered their mobile customers in the economic sense as well. All mobile-to-mobile calls are free. This is one big "in" network, but the challenge is to know if the person you are calling is "in" or not.

If all iPhone plans include unlimited data, why not just use Skype? The Skype offer is about $3 per month for unlimited U.S. and Canadian calls and of course Skype-to-Skype calls are free. The more calls you make the lower the average rate per minute goes. In addition, the SkypeOut service enables calling to any terminating number in the world and the international rate per minute is about $.02 to 30 destinations worldwide. There are a few other details to consider, of course. such as connection fees, but the point is that this is possible and it doesn't require WiFi, although the iPhone is WiFi-enabled.

By now probably everyone knows about Skype and how to bypass traditional PSTN charges using IP and the Internet on their personal devices. This is nothing new. The phone is certainly not new, but Apple has made old new again and, with improvements, has made the old phone truly a relic. The untapped potential of every superior network (better quality, lower cost, greater utility, etc.) is in every instance tapped in through the use of a device. What is the Internet without a router? But, the network and the device need applications. Voice is again reborn as a killer app to drive not only the network, but also the sale, use and utility of a device. This powerful hat-trick is reinvented once more. The new iPhones also continue to spread the awareness of peering communities comprised of individuals. With a very flat communications architecture in a P2P network environment, coupled with community-based, Web 2.0 application Development these new devices are unlocking the potential of mass natural selection. This is indeed quite an interesting development in nature.

The media hype helps sell devices. This is clearly what the Apple shareholders want. Perhaps what Apple really wants is to enable the development of applications that improve our lives while keeping their shareholders happy. Apple has made doing both difficult tasks look easy. Who knows, maybe one day we'll be able to order the concert tickets right from our phone and then watch the concert live on the phone the very next minute. That would save a lot of people the trouble of sleeping out on the sidewalk and is in line with Apple's commitment to environmental protection. Proper human evolution is definitely a noble and worthy cause. 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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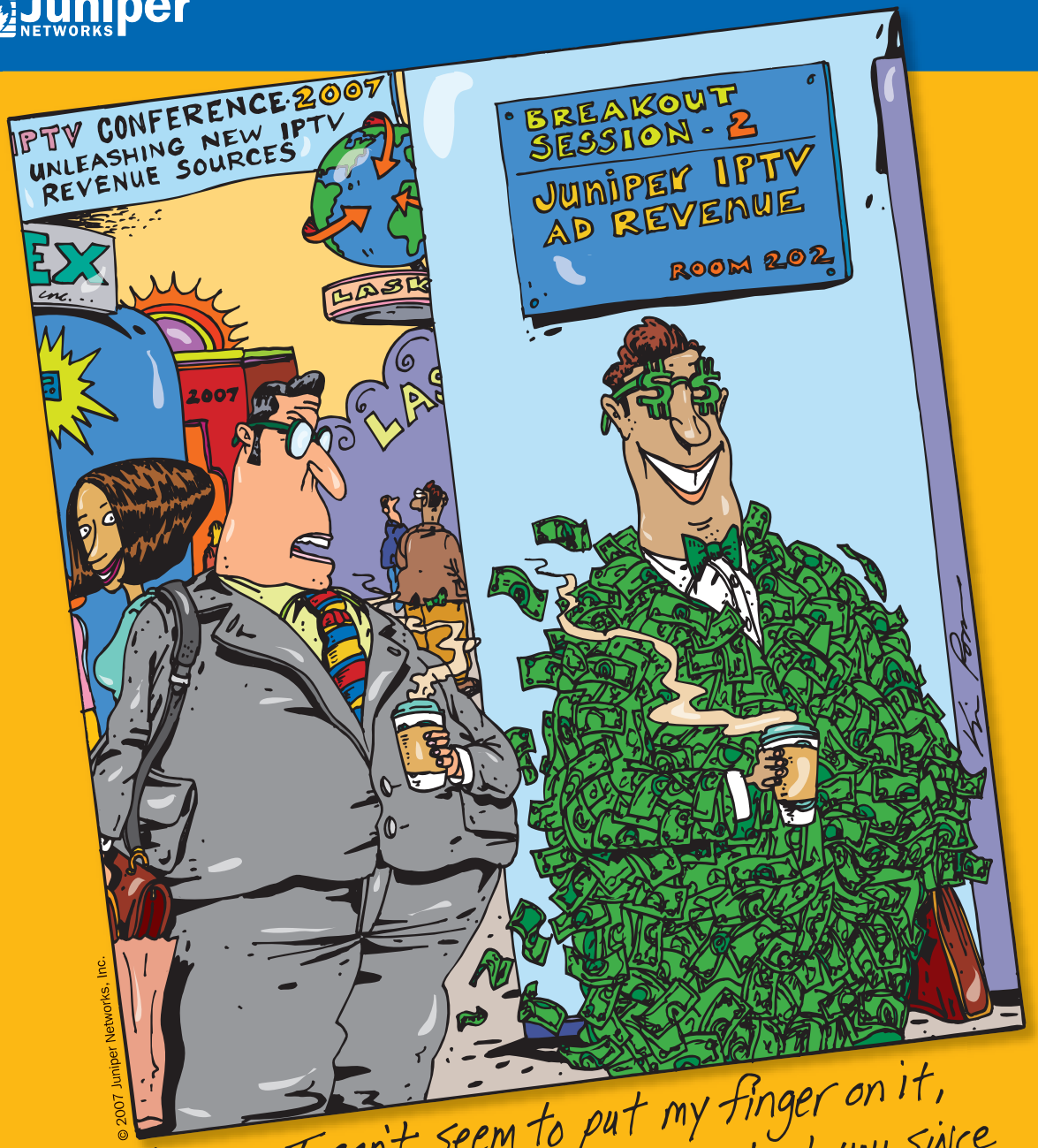

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By Bob Aldrich

Skype's Carterfone Petition Poses New Opportunities and Challenges in the Enterprise Market

On February 23, 2007, Skype filed a petition at the Federal Communications Commission (FCC) seeking a ruling that cellular mobile telecommunications service subscribers have a right to choose their own terminal equipment (i.e., handsets, PDAs, laptops, etc.) and software applications. As cellular networks become more open to interconnection of customer-provided equipment, enterprise systems developers and suppliers have an opportunity to offer added value to their customers — specifically, to offer multi-network devices and eventually seamless interconnection between cellular services and enterprise systems. Wireless is the growth sector of telecommunications — and regulation will have a key impact on enterprise systems companies' ability to gain a share of this market. The Skype petition and any spin-off proceedings deserve careful attention from companies serving the enterprise market, who can take collective action through trade groups such as the Enterprise Communications Association (ECA).

Citing the open interconnection principles that have applied to wireline telecommunications networks for more than three decades and that prevail in many wireless networks in other countries, Skype has urged the FCC to require wireless carriers in the U.S. to allow interconnection of any equipment meeting reasonable technical standards, and to prohibit carriers from discriminating in favor of their own handsets and applications. Skype analogized its petition to the FCC's 1968 Carterfone decision, which gave telecommunications consumers, for the first time, a right to connect their own, non-Bell telephones to Bell's wireline telecommunications network. Skype is seeking for wireless customers the same right to connect their own handsets and operate their own applications on wireless networks.

Predictably, wireless carriers opposed Skype's petition. While claiming that they do not actually prevent customers from connecting their own handsets, carriers argued that they have a right to control interconnection because (1) they are not monopolies, (2) they have a right to protect their network investments by limiting others' ability to get a "free ride"; (3) they need to protect the technical integrity of their networks.

In response, Skype and its supporters replied that, even where they do not absolutely prohibit interconnection, carriers impose significant barriers to customers attempting to connect their own devices. The proponents urged the FCC to mandate open interconnection because (1) although not monopolists, wireless carriers frequently behave oligarchistically to the detriment of competition, (2) using public radio spectrum resources is a privilege, not a right, and may reasonably be conditioned on open interconnection requirements, and (3) technical harm issues were raised in the Carterfone era and were effectively addressed by imposing technical standards on interconnected equipment.

There is even more at stake in this dispute than consumers' right to choose their own handsets and applications. The deployment of wireless broadband networks and consumers' escalating expectations of convergence will almost certainly stoke demand for handsets and other devices that can interconnect with — and eventually move seamlessly between — cellular and other networks, including enterprise communications systems. Although wireless carriers may resist this trend, entrepreneurs will find a way to offer multi-network solutions if there is sufficient demand for them.

Thus, while the FCC may be in no hurry to act on the Skype petition, the market may not wait for the FCC. As the recent launch of Apple's iPhone demonstrates, wireless devices increasingly offer a host of applications that have nothing to do with traditional cellular telephony. Thus, even though the iPhone is a carrier-sponsored offering, the underlying market trend seems inconsistent with continuing carrier control of terminal equipment. Moreover, as the complexity of terminal devices increases, so does the price tag, making it more difficult for carriers to justify continued subsidies for their own sponsored devices. In short, for cellular carriers to continue maintaining tight control of the expanding array of terminal device features and applications seems to make less and less sense either technically or economically.

The FCC will need to be prodded to make rulings favorable to open wireless interconnection. Meanwhile, as the FCC ruminates on the broad policy principles, enterprise systems providers are likely to move ahead with integrated wireless solutions, either in collaboration or in conflict with wireless carriers. Disputes are likely to arise, requiring resolution on an *ad hoc* basis by the FCC or other forums without the benefit of settled interconnection rules. For example, there may be confusion as to applicable pricing rules, including access charge regulations, for calls that are handed off across network boundaries. In addition, different E911 regulations — including potentially inconsistent location identification standards — apply to enterprise and cellular networks. Disputes may also arise as to who is responsible for complying with applicable regulations — the manufacturer, hosted system provider, cellular carrier, or the enterprise itself.

As regulators begin to grapple with these complex issues, as well as the overarching interconnection policy, enterprise systems providers need to be alert to the emerging regulatory opportunities and challenges that will affect their market position. Organizations such as the ECA offer an important collective vehicle for enterprise market participants to make their voices heard and avoid conceding this emerging convergence opportunity to others. IT

Bob Aldrich is an attorney with Dickstein Shapiro LLP, Washington, DC, and is counsel to the Enterprise Communications Association (ECA).

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Your Connection to the World

Dual Mode Cellphones Promise Better Sound Quality

By Michael Stanford

The cellular industry has been monstrously successful, but the sound quality of cellular calls remains abysmal. This proves that people like you and me don't care about sound quality, right? Wrong. Most of us do most of our calls on our cellphones, and we use our cell phones more with each passing year; but we do this only because we value mobility higher than sound quality, not because we don't care about sound quality. The ongoing success of Polycom speaker phones shows that at least in some circumstances people are willing to pay for good sound quality, and one of the success factors for Skype (news - alert) is its use of wideband codecs.

On both fixed and mobile calls, the telephonic journey from mouth to ear, often thousands of miles in tens of milliseconds, traverses a chain of many weak links, each compounding the impairment of the sound. Whether you are talking through a headset, a handset or a speaker-phone, the microphone and speakers may be incapable of reproducing high quality sound. The digital encoding of the call is almost always done with a narrow-band codec, which discards the higher frequencies that enable you to distinguish between an "F" and an "S." The media stream is often transcoded, for example from GSM to G.711 and back, losing fidelity each time. On VoIP calls, packets are often lost or delayed. Over wireless connections, whether cellular or WiFi, interference, crowding and imperfect coverage cause even more packets to be lost, and calls are sometimes dropped in mid-sentence.

The premise of this column is that Voice-over-WiFi sounds better than traditional phone service. Not just better than cellular voice, but better than toll-quality wireline voice.

Suspend your disbelief for a moment, and contemplate what it would be like if conversations over your cellphone were in CD quality sound. This is technically achievable today with Voice-over-WiFi on a dual-mode (cellular plus WiFi) phone.

Because they must handle polyphonic ring tones and iPod-type capabilities, the speakers on most cell phones can easily carry the full frequency range of the human voice. Cellphone microphones can also pick up the required range, and DSP techniques can mitigate the physical acoustic design challenges of the cell phone form factor.

Smart phone processors have the power to run modern wideband codecs for superior sound quality. Using a wideband codec you can easily hear the difference between an "F" and an "S," and calls gain an agreeable clarity and immediacy.

Unfortunately, without a major overhaul, neither cellular networks nor wireline voice networks can transport high definition sound. So even if you have a wideband-capable phone the chances are that your sound quality will be limited by the network.

But this limitation doesn't apply to the IP network. Voice-over-IP can use a wideband codec as easily as a narrowband one. This benefit is lost if there is a transcoding step, but WiFi provides a direct connection to the IP network, and if the call remains on the IP network end to end the callers can enjoy the wideband experience. Dual-mode phones can connect directly to the Internet in the two places where most people spend most of their time: at work and at home. These phones must be open enough to run VoIP software; Nokia's smart phones and Windows-based smart phones fit this description, though the iPhone doesn't yet.

In large enterprises many calls are internal. With VoIP phones deployed around the entire company, all internal calls can use wideband codecs. Even better, both large and small companies can federate their voice systems with each other over their data networks; calls between them don't touch the public voice network, so they can stay in wideband format. This is viral. As more companies experience the benefits of high definition sound internally and with their suppliers and customers, they will encourage those who haven't made the switch to do so.

If the analysts' projections are correct, and hundreds of millions of cellphones sold in 2010 are WiFi voice-capable, businesses won't have to make the decision to buy VoIP phones. Our cellphones will come with VoIP capability; we will be enjoying much better sound quality on many of our calls even if the public voice networks aren't yet wideband-capable.

Check out the V2oIP Quality Alliance website (http://www.v2oipqualityalliance.org) for an industry initiative on improved call quality. IT

Michael Stanford has been an entrepreneur and strategist in Voice-over-IP 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. Internet Telephony Magazine recognized him as one of "The Top 100 Voices of IP Communications" and VoIP News named him one of "The 50 Most Influential People in VoIP".

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This year the world's ultimate IP Communications Conference, ITEXPO West 2007, returns to Los Angeles from September 10 through September 12, 2007. It also marks the anniversary of the Disaster Planning Communications Forum (DPCF). At ITEXPO West 2005, the first DPCF Press Conference was held followed by a meeting the next day of the companies that would later comprise the founding members. The DPCF initiative was formally announced in the January, 2006 Enterprise View column (http://www.tmcnet.com/340.1) and the first column in the Continuity Planning 101 series appeared in March, 2006 (http://www.tmcnet.com/341.1).

The formation of the DPCF resulted from a conversation between Rich Tehrani and Max Schroeder relating to the then recent hurricane disasters on the United States Gulf Coast and the well-documented communications failures in New York City on September 11, 2001. The basic concept was that IP telephony industry professionals could contribute in helping enterprises to avoid or minimize problems in future disasters. TMC and the Enterprise Communications Association (ECA, http://www.encomm.org) committed to combining their efforts to launch the DPCF and contribute to its ongoing management. During the ensuing years, the DPCF evolved into a much larger group of vendors and resellers dedicated to educating enterprises on the need and value of business continuity planning.

The goal of the DPCF is not to displace any other organizations. The disaster planning industry is very mature. There are industry organizations and companies that will advise you on how to procure food that can be stored for months or years. You can also hire the services of entire mobile recovery teams and equipment including workspace trailers, mobile offices and inventory storage. However, in 2005 there was a gap as most of the focus was on traditional disaster planning and recovery, not business continuity using the latest IP technology. The gap has narrowed but there is still work to be done.

Even today many SMBs are not prepared. Most enterprises, of any size, do not fully understand the impact that IP telephony has had on business continuity planning and implementation. IP telephony has made business continuity planning both easily available and affordable. In fact, implementing converged IP can have the dual reward of lowering the costs of daily operations plus providing continuity. Plus, many companies are easily halfway there. For example, due to the tremendous advantages presented by Internet Telephony solutions and broadband access, your company may already have a substantial number of employees working from home offices. In effect, these employees are members of the "business continuity team" and may even be deployed over a wide geographic area.

However, there still remains a major "gap in thinking". This provides resellers looking to enter this market with a large base of prospective clients. There are many reasons for an enterprise to bring in a reseller or consultant to assist with continuity planning but the primary reason is that it is like a first impression — you only have one chance to succeed. Business continuity planning is not like many other business activities that are repeatable and sharpen a company's skill set. Bringing in a continuity planning specialist avoids the "first time" issue.

This year's 2-hour workshop will host a selection of experienced panelists who will address how an enterprise can and must plan to avoid a serious interruption of business operations. Panelists will include application vendors, resellers, and managed service providers from the DPCF participating companies. Audience participation is strongly encouraged, so come prepared with questions for the panelists. This is also a must for resellers looking to enter this market.

Since the inception of the DPCF many companies have signed on to participate. There are no fees and no long term commitment. All that is required is a willingness to participate whenever possible. Some companies that have signed on in the past include:

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Cantata Inc.	Progressive Communications Mgmt, Inc.
CiBan LLC	Promero, Inc
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Eicon Networks Corp	Sphere Communications
FaxCore, Inc.	Standley Systems Inc.
Forsythe Solutions Group	Tadiran Telecom Inc.
Haines Brown Inc.	Telephony@Work (now Oracle)
Haines Brown Inc.	TMC
IwatsuVoiceNetworks	United Telecom Council
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MSI Services	

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. IT

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

Rich Tehrani is the President and Group Editor-in-Chief at TMC and is Conference Chairman of Internet Telephony Conference & EXPO.

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The Carrier Grade Server Profile

By Jeff Hudgins

In the past, the sole purpose of Carrier Grade Rack Mount Servers was to ensure highly reliable performance in some of the harsh environments of central offices and outside plants. Telecom equipment must be prepared for just about anything. In some locations, seasonal temperatures range from sub-zero to 100 degrees Fahrenheit. Humidity conditions can range from desert-like to tropical.

To ensure operation within these extreme environments, Carrier Grade Servers are often subjected to the Network Equipment Building System (NEBS) design and testing process. NEBS is the most common set of safety, spatial and environmental guidelines for telecommunications equipment in the U.S. The NEBS equipment design requirements are described in detail in Telcordia documents:

- GR-63 NEBS™ Requirements: Physical Protection.
- GR-1089, Electromagnetic Compatibility and Electrical Safety — Generic Criteria for Network Telecommunications Equipment.

The NEBS concept was first introduced by Bell Labs in the 1970s and has been maintained since the Bell System's 1984 divestiture. NEBS requirements are utilized all over the world for a host of commercial and industrial applications requiring reliable service continuity and integrity under normal and extreme operating conditions. Today, Carrier Grade Servers feature NEBS certification and much, much more.

Now that these reliable open standards-based servers feature longer life cycles and high performance computing engines, they are considered for a broader range of applications. Some of the applications leveraging these added features are Unified Messaging, Signaling Gateways, Services-over-IP (SoIP), and call control. The table shown provides a comparison of Enterprise, Network, and Carrier Grade Servers.

The extended life cycle is very attractive to application developers and OEMS in the IP telephony space. "Generally the NEBS-certified Carrier Grade Server market has grown 3 to 4 percent over recent years," says Marvin Dubois, Intel Modular Communications Platform Division Product Manager. "But, we have seen tremendous growth in the network security and telephony appliance applications in excess of 25 percent per year."

Intel's most recent offering in the Carrier Grade Server space is a 1U dual core Carrier Grade Server which is NEBS-certified, the TIGW1U. Marvin says, "I am very pleased at the broad interest we've seen on this product. Having redundant DC power, hardware RAID 5 capability, and dual core performance all in a 1U server appears to be a winning combination."

Intel's NEBS-certified, 1U-high, TIGW1U.

This high performance platform features 64-bit Dual core Xeon processors with improved performance per watt over previous generation Carrier Grade Servers. The system also supports I/O Acceleration Technology and dual channel fully-buffered DIMMs at either 533 or 667 MHz for maximum bandwidth. The platform also offers the flexibility of redundant AC or DC power supplies.

For higher density applications that require add-on cards for I/O, my company, Alliance Systems, provides a 6U platform that features solid processor performance with support for 16 cards. IT

Alliance Systems' NEBS 6U box, the N-6500.

Server	Power	Life Cycle	Depth	NEBS Certified	Processor Support	Other Features
Carrier Grade Server	DC	5 Years	20" Max	Certified	Dual Core	Telco Alarm
	AC			Compliant		
IP Network Server	DC	3 Years	20" Goal	None	Dual Core	High NIC capacity
	AC					
Enterprise Server	DC	2 Years	24-26" Typical	None	Quad Core	High Storage capacity
	AC					

Table 1. A comparison of Enterprise, Network, and Carrier Grade Servers.

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Discontent with Content

By Kelly Anderson

The telecom and communications industry is one which seems geared towards constant change — it always seeks and embraces the newest architecture, operational methods, and revenue ideas. This state of continual flux takes on an even greater dynamic of change given the prevailing competitive landscape, market conditions, and regulatory environs — which, in and of itself can create change within the other two factors.

After years as an industry participant, I have seen many issues surface and get resolved within these constantly changing conditions — or become forgotten about altogether, often as a result of the nature of the changes themselves. And yet, at a recent panel discussion in the streaming media space, the issues of the day reflected constancy rather than change: charging, settlement with content partners, optimizing revenue, advertising, analytics, customer experience and loyalty. Apparently, the old adage "Content is King" still applies, but it also can create a "Pandora's Box" of sorts for all service providers or MSOs that provide multimedia services.

Along with the operational headaches and unknowns that go along with such things as controlling QoS and allowing for sufficient and efficient capacity for IP content, there are further areas that need to be monitored and distributed by IP set-top boxes (STBs) that will become a requirement for any IP-based media offering. These areas include metrics for monitoring use, *ad hoc* programming, VoD, content value — such as the inclusion of a ratings component, the possibility for voting applications, charging, recorded content — and almost any of the new functions that need not be monitored from a standard flat-rated, set-top television and media viewer. But with this growing complexity of increased content with a variety of more specific uses, comes a new revenue opportunity as well.

As an example of this new revenue model, one of the hottest tickets in content over the Internet for the last two years has been user-generated content. User-generated content has evolved from the complexity of cats falling off couches to local fishing and hunting tips and home recording techniques. User-generated content is not just for entertainment, but also for instruction and education of all kinds — "infotainment" specific to the needs and desires of the consumer. This new type of narrowcasting means one word for advertisers: "focused".

With this tightly "focused" content, advertisers can take advantage of reaching a very interested subset of viewers who are paying attention, engaged, and spend money on the activities specifically related to the content. This not only targets a customer demographic of those most likely to spend money, but also allows the service provider a higher CPM rate for that very specific content. Monitoring that type of specific, focused content and providing for customer feedback to the content provider allows a feedback loop for data that could prove powerful in negotiations, along with the "labeling" of higher-value programming for specific pricing and gold-tier packaging.

These types of metrics have yet to be defined. Several industry bodies have adopted specifications for the defining and capturing of data that can be used for multiple applications within the operational realm of providing multimedia services. This data is also support with standard Java-based APIs such as the CableLabs OCAP 1.1 specification that allows for the streaming of data from the set-top box into any third-party device. These specifications basically allow for the definition and use of any data element captured by IPTV services through the set-top box to be used for any purpose associated with charging, traffic, QoS, user behavior, content rating, potentially even voting functions (yes, there are two-way data flow capabilities).

With current standards supporting essentially any kind of analytical calculation on data received from the STB, what is left to implement these metrics? With the capabilities in place, as vendors and providers begin to test the OCAP specifications, and their imminent adoption into the industry, there still remains a gap between the data that is captured, the operational processes to manage and look at the data, and the introduction of this idea into the licensing agreements and advertising models that are needed to make this new capability a revenue driver in the future. The "tipping point" of an industry that is able to take advantage of these capabilities will be at a time when these gaps are reconciled into a clear, cohesive plan that can be implemented with the clarity and duplication required to make service creation and management an understandable and documented process that can be depended on — regardless of consumer changes, new content frontiers, and technological advancement.

At the present, this "tipping point" seems far away, indeed. The work needed to make this vision operational will require expanded industry collaboration that extends to the content owners, management vendors, advertisers, and operators. Much work remains to be done in the cable and telecom industries in this regard, but expanding the existing telecom and cable operational tools such as usage models, architectures, and service maps to include the new "communications" players will be crucial to getting services operational and agreements repeatable.

Change is inevitable — and often necessary, but without the support of the industry players, as well as advertisers and content owners, the dream of making IPTV and multimedia services into a viable profit center may be yet another chapter in the long history of the communication industry's "changes that never were." IT

Kelly Anderson is President and COO of IPDR.org, a collaborative industry consortium focused on developing and driving the adoption of next-gen service usage exchange standards worldwide.

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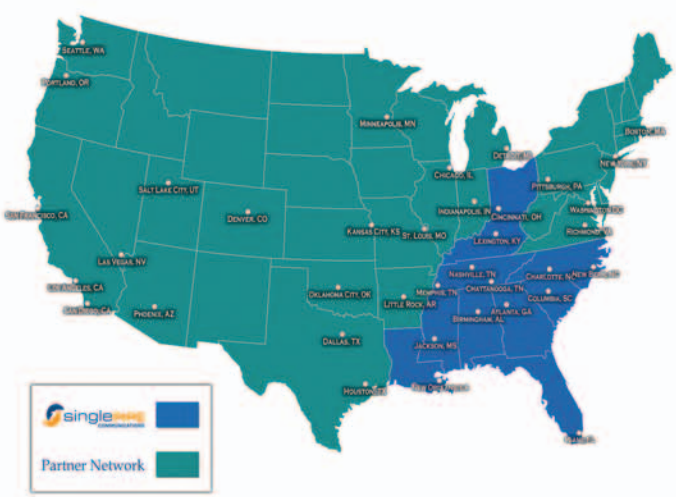

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By William B. Wilhelm, Jr.

Strengthened CPNI Rules Apply to VoIP Carriers —

Privacy and Information Sharing Rules Expand

In light of the increasing popularity of interconnected VoIP services as a permanent replacement for traditional telephone services, the FCC is seeking to exercise its power to impose various privacy rules on providers of interconnected VoIP service in its above-referenced **2007 CPNI Order**. The CPNI rules were originally enacted to prevent unauthorized disclosure and sharing of personal information. The rules were recently expanded in an effort to respond to the practice of "pretexting" — a practice whereby data brokers or other third parties use false pretenses to obtain a customer's private calling information.

By way of background, CPNI is defined by the FCC as "information that relates to the quantity, technical configuration, type, destination, location and amount of use of a telecommunications service" that the carrier possesses because they are serving the customer.

Under the new CPNI rules, the FCC took the following actions:

Implemented New Authentication Rules.

Carriers and interconnected VoIP (define - news - alert) providers are now generally prohibited from releasing CPNI during a customer initiated call or through the carrier's website. The release of such information, however, remains permissible if the customer provides a ***pre-established*** password. As a result, covered providers need to consider how they will implement passwords.

In the event a customer seeking call detail information has forgotten his or her password, carriers are expressly prohibited from verifying the password using a prompt that contains readily available biographical information. Carriers are still permitted to mail information to the address of record pursuant to a telephone request without password verification, and may still perform customer service calls that disclose call detail information if the carrier initiates the call. It also remains permissible to provide information to a live customer at a retail location with valid identification.

Adopted New Procedures of Account Changes and/or Data Security Breaches.

Carriers and Interconnected VoIP providers are now required to notify customers immediately when a password, forgotten password retrieval mechanism, online account information, or address of record is changed. Notification may be made in the form of a voicemail or text message to the telephone number of record, or may be mailed, but must "reasonably ensure" that the customer receives the notification.

Data security breaches that result in the disclosure of CPNI to third parties without the customer's authorization must now be reported to the FBI and Secret Service no later than 7 days after a "reasonable determination of a breach." Carriers may notify the customer 7 days thereafter if no request is made by federal law enforcement officials to further delay customer notification, or, alternatively, immediately after consulting with federal law enforcement officials if the need is urgent. In addition, carriers are now required to maintain a record of any discovered data breaches, related notifications, and the FBI and Secret Service response to such notifications for at least 2 years.

Carriers May No Longer Share CPNI with Affiliated Independent Contractors and Joint Ventures without Customer *Opt-In* Permission. The existing rules that allow carriers to share CPNI with affiliated joint ventures and independent contractors have been repealed. The new rules require telecommunications carriers to obtain ***opt-in*** consent from a customer before disclosing the customer's CPNI for marketing related purposes.

Annual Certifications Must Now be Filed with the Enforcement Bureau. Carriers must now submit their annual CPNI compliance certifications directly to the Enforcement Bureau no later than March 1 for data from the prior calendar year. In addition, annual CPNI compliance certifications must now include an explanation of any action taken against data brokers and a summary of all customer complaints received during the past year regarding the unauthorized release of CPNI.

Increased Enforcement Activity Expected. Finally, the FCC has plainly stated that it intends to take a two-prong approach to protecting consumer privacy. The first prong is the promulgation of the above referenced "minimal requirements." The second prong will be "strong enforcement measures." Going forward, every carrier must be able to demonstrate that the steps it has taken to protect CPNI from unauthorized disclosure are "reasonable in light of the threat posed by pretexting and the sensitivity of the customer information at issue". If the FCC finds that insufficient steps were taken to adequately protect CPNI, sanctions, including "forfeiture," are likely.

While this summary provides a highlight of the FCC rule changes, the rules are complex and expansive and also cover joint ventures, sharing with independent contractors and other arrangements. As a result, when developing policies and procedures, it's important to consider consulting with your internal and external counsel. IT

William B. Wilhelm is a Partner in the Telecommunications, Media and Technology group of the national law firm of Bingham McCutchen, a law firm with over 950 lawyers For more information regarding the author you may visit http://www.bingham.com. *The preceding should not be considered legal advice and it represents the views of the author only and does not necessarily represent the views of Bingham McCutchen or its clients.*

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TMC LABS 2007 Innovation Award Winners — Part II

By Tom Keating

This is the second and concluding part of our 8th annual TMC Labs Innovation Awards, recognizing the truly unique and innovative products and services in IP communications. 2007 marked several strong contenders in the areas of 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.

NexTone
NexTone 4.3 Platform
IntelliConnect System
www.nextone.com

Service providers are looking to manage traffic by the individual session. Only at this level of granularity can service providers offer enhanced services to customers while monetizing each individual session. "Dumb billing" that simply tracks overall minutes or overall bandwidth use will soon be passé. One such solution comes from NexTone. NexTone's 4.3 Platform, also referred to as the company's IntelliConnect System, includes the NexTone MSX, a Multiprotocol Session Exchange platform for interconnecting SIP and H.323 networks; the NexTone IMX, an IP Multimedia Exchange platform for interconnecting IP and IMS networks; and the NexTone Real-time Session Manager (RSM), which dynamically manages and optimizes IP services from the network core.

NexTone's (news - alert) IntelliConnect System leverages its carrier-hardened, Linux-based software architecture and standardized hardware components to offer service providers a fast and scalable solution to secure their VoIP and IMS networks. NexTone provides critical analytics such as MOS, jitter, and packet loss to ensure QoS for customers. Also, unlike many competing solutions, NextTone offers real-time dynamic session management technology, which brings together session border control functionality, QoS metrics, and policy management

The latest release of the IntelliConnect System includes several key features, including PacketCable 2.0 DIAMETER support, interworking with Telarix iXTools for third-party least cost routing (LCR) to broaden session routing delivery and cost optimization , and multi-stage Denial of Service (DoS) security enhancements, which expand security and threat-mitigation functionality. Also, NexTone's latest NP2 high-performance media card, resulted in a doubling of G.711 media processing capability.

NextTone told TMC Labs, "NexTone is the first to interwork with Camiant on the DIAMETER-based Rx interface. NexTone now provides the first Session Border Controller (SBC) to interconnect with Camiant on the DIAMETER-based Rx interface to deliver a breakthrough approach to controlled service delivery." The latest release drastically improved performance by doubling the number of concurrent media streams per platform to 20,000. It also allows separation of service and transport planes to enable Rich Media Services - IPTV, Push-to-Talk, Multimedia, etc. The solution also has enhanced SIP/H.323 protocol interoperability.

Redback Networks Inc.
SmartEdge1200
www.redback.com

The SmartEdge 1200 is a multi-service, multi-access edge routing platform designed for carriers looking to upgrade their broadband networks for high definition video plus megabit mobility. The SmartEdge 1200 is a single router platform that can deliver any combination of broadband, phone, video and mobility services over any access technology (Cable, DSL, Ethernet, Fiber, GSM+HSPA) supporting an amazing 480G of throughput.

Redback Networks (news - alert) claims that the SmartEdge is the first to provide a single router to deliver triple-play over wired and wireless networks. It uses a converged network architecture to manage several broadband services over a single routing platform, eliminating a whole category of single-service, single access edge routers. Additionally, the SmartEdge 1200 is the first edge router to target 99.9999% reliability. Redback told TMC Labs, "The SmartEdge 1200 is the first edge routing platform to provide a full suite of management and security tools help service providers

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deliver triple-play services, including deep packet inspection, firewall protection, and better security tools, such as VPNs and VoIP session management."

With its bandwidth capacity, the SmartEdge 1200 allows carriers to upgrade to high definition (HD) video supporting thousands of subscribers with excellent session control, which help carriers deliver data, voice and video services. Uniquely, it allows carriers to dynamically provision different services by specific user during peak demand periods. Redback claims that this is the first and only router that can manage broadcast-TV size audiences (up to 2 million flows) from single network box. Also, SmartEdge has strong wireless mobility functionality with what Redback calls "Megabit Mobility", which enables consumers to access video and other high bandwidth services on mobile devices..

The SmartEdge 1200 runs on one modular operating system, specifically built to deliver multiple broadband services. The latest product features twice the throughput (480G vs. 240G) and a new control plane (8X performance). It can handle up to 256,000 subscribers per system (vs. 48,000 previously), and up to 512,000 DHCP hosts per system (vs. 128,000 previously). The maximum performance of the SmartEdge 1200 is also double that of the previous generation (5.0 Mbit/s per subscriber, vs. 2.5 Mbit/s, both tested at the SmartEdge 800's maximum of 48,000 subscribers). The SmartEdge 1200 has new security features, including integrated IPSec VPNs and IPS, which reduces the number of devices required to be purchased for a customer's environment. Service providers looking to deploy enhanced services using a comprehensive all-in-one router approach would do well in selecting the SmartEdge 1200 for their infrastructure.

Shunra Software
Shunra Virtual Enterprise (Shunra V)
www.shunra.com

Shunra Software (news - alert) has been a leading testing company for some time and in fact TMC Labs has used their software to inject latency and packet loss while testing VoIP products - so we know firsthand how good Shunra Software products are. Shunra's Virtual Enterprise (Shunra VE) is a comprehensive network simulation solution that replicates the actual production network conditions and can even capture and import them from the production network environment. This make it significantly easier to use and more accurate than theoretical simulations. Shunra VE is used extensively during all application lifecycle phases, especially pre-deployment, as well as post-deployment and diagnostics. Many competing solutions provide theoretical simulation tools using purely mathematical network modeling that is prone to inaccuracy.

Unlike competing products, the Shunra VE provides an exact replica of any network production environment - including the WAN, remote offices, end-users and traffic. An important feature is that it can capture and replay the real-life production network conditions to create a mirror image of the production network. Shunra VE seamlessly integrate with automated tools such as end-user load tools and with layer 1-7 traffic generators, VoIP call generators, etc. Shunra VE also includes an XML-based open API which enables it to automatically manage other third party lab resources, or be managed by them.

Shunra VE includes two applications - VE Predictor and VE Profiler. VE Predictor automatically predicts the end-user experience at remote locations for specific network conditions, making it easy to determine if new, modified or existing applications will meet service level objectives at any or all remote locations. VE Predictor runs business transactions over the selected network conditions and measures performance against predefined service level objectives (SLO). VE Predictor delivers a report on application performance, availability and consistency at each remote location based on the time-of-day, network topology and conditions, and end-user utilization and behavior.

By Tom Keating

VE Profiler delivers automated application stress testing under any combination of network conditions. VE Profiler generates the range of network impairments selected, such as latency, bandwidth, packet loss and utilization, and then runs the application against these network impairments. VE Profiler's graphical reports depict the specific network conditions and capacity needed to achieve SLOs, as well as the network and end-user load thresholds that the application can tolerate while still providing an acceptable end-user experience. By providing a holistic approach to testing, including simulation, network impairment, and reporting, Shunra VE is an invaluable tool for service providers, network equipment manufacturers, and engineering development to add to their testing tool arsenal.

Siemens
OpenScape V2.3
www.siemens.com

With so many different communications methods in the enterprise, emails, phone, voicemail, instant messaging, etc. employees are looking for solutions that "unify" all of their communications. Siemens (news - alert) OpenScape, a Session Initiation Protocol (SIP)-based application suite, is one such solution which provides uniform, ubiquitous access to devices, features, and capabilities in a Unified Communications network.

OpenScape's purpose is to unify and streamline communications in an infrastructure that consists of multiple fragmented systems for voice, data, wireless, and mobility. Siemens told TMC Labs, "Enterprises using Siemens OpenScape benefit from a more collaborative and productive workplace, where employees spend less time sorting through email and responding to duplicate messages, and where they can be more easily located for on the spot calls and conferences no matter where they are in the enterprise or while traveling." OpenScape can incorporate audio, video, and web conferencing services and it can be integrated with Microsoft Live Communications Server and IBM Lotus Sametime to add more advanced communications functionality to these applications.

OpenScape extends unified communications by adding presence-based communication to non-SIP devices such as a PBX, public network phones in airports, hotels and other public spaces, and cell phones. In addition, the solution includes a suite of open API developer tools that businesses can leverage to incorporate real-time, presence-based communication features into processes that benefit most from improved responsiveness, like CRM and ERP systems. Siemens stated, "We were the first to blend together, not just connect together, core enterprise communication technologies (e.g. VoIP, IM, web collaboration, unified messaging, VXML speech browser, enterprise portals, etc.) into a seamless 'unified communications' user experience."

OpenScape leverages several of IT's favorite paradigms, including following IT security best practices (Kerberos, IPSEC, SSL), it uses IT administration tools (Windows Management Instrumentation(WMI) / Microsoft Management Console (MMC)), and it integrates tightly with the customer's IT infrastructure (Active Directory, SQL Server, Exchange Server, Live Communication Server, Communicator Client, Outlook, SharePoint, etc.) Further, while many IP-PBX vendors are developing their own proprietary unified communications applications, OpenScape on the other hand is entirely based on SIP and therefore can be integrated with any vendor's PBX. Siemens claims that OpenScape is the first Unified Communications Web Services Software Development Kit (SDK), which enables easy integration of presence and multi-media communication, collaboration, and alerts to any business application.

Siemens espouses the advanced presence engine and a holistic, user-centric model of presence that offers an aggregated view of several aspects of each contact's availability (activity status, voice availability, IM availability). Siemens explained, "We use this rich presence to enhance our conferencing model, transforming the conferencing process from a disjointed process requiring email meeting notices, call-in numbers, pass codes and initiative on the part of all participants, to a pro-active, presence-enabled model where any key player can start the call on time, and the system automatically calls out to all participants, reaching them at their current phone of choice. This ensures conference calls start on time and with the right people."

Spirent Communications
Spirent TestCenter
www.spirent.com

Spirent Communications (news - alert) Spirent TestCenter is a next-generation testing platform designed to meet the testing needs of service providers and network equipment manufacturers. Spirent TestCenter enables test and development engineers to validate the performance and market readiness of converged network elements such as routers, switches, head-ends, and access and edge devices. Spirent TestCenter is an integrated solution that tests a broad variety of next generation devices and networks with superb scalability, accuracy, automation and speed.

Spirent TestCenter offers a centralized testing platform via a single application that can generate control and data traffic and collect test results. It can be used to create large-scale tests that exceed the capacity of devices under test. This is useful in determining benchmark performance under typical and extreme subscriber traffic load conditions.

It is highly scalable with support up to 144 Dual Media GigE ports or up to 24 10GbE ports in a single chassis. Each port can generate up to 32,767 TCP/IP streams or analyze up to 65,535 streams in real time. Also, it supports high-density 10/100/1000, GigE and 10GigE test modules which are hot-swappable.

TestCenter includes testing applications that span layer 2 to layer 7 of the network and it has support for a wide variety of protocols. TestCenter can be used introduce real effects like dropped packets and latencies to get an accurate forecast of how customers' applications will perform in the production network.

Spirent TestCenter supports testing of the many protocols, including, IPv4/IPv6 routing, multicast, MPLS,

spanning tree, VLAN, VLAN stacking, DHCP, and more. Spirent TestCenter also effectively tests Ethernet switches that are capable of up to 1-Gigabit Ethernet connections to the desktop and 10-Gigabit Ethernet connections to the core. Spirent told TMC Labs, "Spirent TestCenter is known to improve productivity by reducing product testing cycle time from anywhere between 15 to 60 percent depending on the tests conducted, and improve time to market/revenue by an average of 15 days. This is unprecedented in the telecommunications testing space."

Stealth Communications
www.stealth.net
The Voice Peering Fabric (VPF)

(news - alert) The Voice Peering Fabric (VPF) was launched in 2003 to offer a centralized exchange or meet-point enabling organizations to communicate voice, video and other telephony traffic in a peer-to-peer fashion with one another via a private global Layer-2 Ethernet network. VPF has a number of elements that allow organizations to exchange traffic including VPF Minutes Market, VPF ENUM Registry, VPF SRV Registry, and VPF ASP Market.

Since the launch of the Voice Peering Fabric in 2003, there are several "firsts" for VPF. The VPF is the first and only distributed Layer-2 Ethernet fabric for the exchange of voice & telephony traffic. They are also the first voice exchange providing complete transparency on buyers & sellers, including their routes, rates, available capacity and member provided ASR. The VPF is also the first production Carrier ENUM & SRV Registry (VPF ENUM/SRV Registry) allowing VoIP networks to interconnect with each other, fully bypassing the public telephone network. Perhaps most interesting is that they were the first ENUM & SRV registry to offer the service without cost to register, query or terminate calls. That's right - it's free to register, query and even terminate calls!

Stealth told TMC Labs, "ENUM technology was introduced in September of 2000 originally as a technology to allow users to control routing of their telephone numbers over the public Internet. We utilized this technology to assist service providers and enterprises to route calls among one another for free to bypass the PSTN enabling them to reduce voice termination costs and allow calls to be completely within the IP domain. By allowing this, it opened a world of application possibilities of incorporating video, presence, MMS/SMS and XML information within the VoIP telephone call."

Another innovative aspect of the VPF is that they have self-policing and reporting service via member feedback to ensure a quality registry. The VPF voice exchange features an open architecture allowing third-party applications to be incorporated within the fabric. The VPF was the first system to enable complete transparency and peer-to-peer communication capability between organizations.

The VPF is constantly improving the feature-set. The latest version added MMS/SMS/EMS and presence features to the VPF ENUM registry in March of this year. Currently VPF ENUM Registry holds over 25 million unique telephone numbers and successfully processed over 200 million free calls annually. By the end of 2006, VPF had routed over 139 billion minutes, up from 18 billion minutes in 2005, and 2.4 billion minutes in 2004.

Mid to large carriers often have dozens to hundreds of SS7 connections each ranging from $1,500 up to $5,000 per month. By transitioning these SS7 connections to IP, they eliminate the TDM connections, equipment while increasing call performance look-up speeds. SS7 circuits are typically 56k/T1 lines with latency ranging in the hundreds of milliseconds. Accessing the same SS7 services over the VPF, latencies range in the 1-10 millisecond range, thus allowing faster call-setup times and call volume.

In mid-2006, VPF introduced the VPF SRV Registry, enabling members to initiate calls between one another directly using e-mail address identifiers, which will lead the transition to all IP-communications free of the legacy networks and dependency on PSTN/telephone numbers.

SyncVoice
www.syncvoice.com
VXTracker Analytics

(news - alert) VXTracker Analytics delivers decision making information that correlates key metrics in a way that identifies patterns and opportunities to increase technical performance, reduce service availability risks and find permanent cost savings of converged networks. Using VXTracker you can measure delay, jitter, and packet loss. Of course any network analyzer can do that. The really unique aspect of VXTracker is that you can use the live performance console to rewind back in time and literally playback the state of the network and correlate it with the applications running. For instance, it is "application-aware" able to detect Microsoft SQL Servers, VoIP extensions, FTP, SMTP, HTTP, POP3, Microsoft Directory Services, and more. Using the easy-to-use interface you can view the state of the network at an exact time and for instance, see which application is using the most bandwidth.

SyncVoice explained, "VXTracker gives our customers an absolute inventory of their network capacity, performance and cost structures in order to successfully manage their operations and migration of their voice infrastructure. VXTracker modeling gives a deep understanding of the existing environment to make solid business decisions that reduce costs and remove availability risks."

VXTracker can model the bandwidth patterns of the IP network as well as simulate VoIP scenarios based on real-world current call patterns. This allows you to do "virtual roll-outs" to ensure the "VoIP Readiness" of your network. VoIP is much more sensitive to packet loss, jitter, and delay than any other IP application. VXTracker's deep traffic and inventory studies model network capacity, performance and cost structures regardless of circuit type, carrier or PBX vendor.

VXTracker normalizes and indexes call record and log information and combines that with the industry's first real-time rule engine that can monitor and notify for key call and event patterns. Furthermore, by automatically synchro-

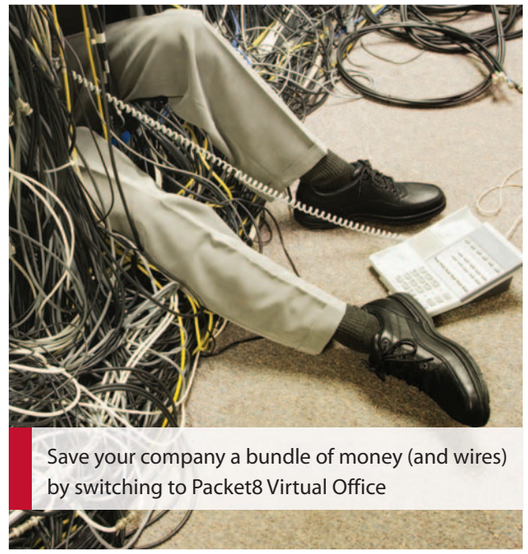
How VoIP Phone Service Can Save Your Business a Bundle

For most businesses, a telephone system consists of one or more pieces of equipment, housed at their business locations, that connects their business to the Public Switched Telephone Network (PSTN). Often, this Private Branch Exchange (PBX), Key System or other premise-based solution requires a sizable investment in hardware as well as ongoing maintenance and upgrade fees.

Today, Voice over Internet Protocol (VoIP) technology is allowing small businesses to secure the features and functionality of a sophisticated PBX phone system for a fraction of the cost by using the Internet (instead of the PSTN) to carry voice traffic just as it does data traffic.

Recently, telecommunications research and consulting firm Savatar asked over 500 small to medium sized business owners what types of problems they had with their current phone system. The problems most often cited include:

- It's too difficult to make a routine Move/Add/Change to the phone system.
- The current system lacks features that are critical to business productivity, and it costs too much to add them.
- It is difficult to manage the system across multiple office locations, and it costs too much to expand them.



Save your company a bundle of money (and wires) by switching to Packet8 Virtual Office

VoIP telephony answers the call for an affordable, robust and easy to manage phone system with a managed service offering known as Hosted IP-PBX. This solution makes all of the traditional PBX features available to a customer while a VoIP service provider owns, hosts, manages and updates the equipment. Hosted IP-PBX service offers many advantages including:

- No/Low Capital Costs – With no key system or PBX to purchase there is no large capital expenditure needed.
- Predictable Operating Expense – Monthly voice and data charges are usually calculated on a per telephone basis. If you have 50 employees each with a telephone on their desk, your monthly operating cost will be 50 times a set fee.
- No Maintenance Expenses – Because the VoIP service provider owns the equipment, they are responsible for all the costs associated with equipment and software upgrades.
- No Management Expenses – The VoIP service provider is responsible for managing the equipment. Routine changes like adding a new person to the system or changing an extension number can be done by the customer via a simple web interface.

With a Hosted IP-PBX service, smaller businesses can now duplicate the same calling features normally found in the big PBX phone systems of large enterprises simply by contracting with a provider that hosts the technology off-site.

"The TCO, or Total Cost of Ownership, is really the primary reason that people adopt a hosted model instead of a do-it-yourself model," says David Immethun, senior director of sales at 8x8, Inc., provider of the Packet8 Virtual Office Hosted IP-PBX. Services such as Packet8 Virtual Office completely eliminate the headaches of owning and maintaining telecom equipment by offering a model that includes full PBX features, unlimited local and long distance calling, complete service support and user administration privileges and controls.

With Virtual Office, equipment costs amount to around $100 per user for a Packet8 hands-free business class telephone and Broadband Phone Adapter. A monthly service fee of $49.99 per extension covers unlimited local and long distance calling in the United States and Canada as well as all service configuration and counseling, administration, changes, upgrades, tech support and complete web-based administration system controls. Features such as Auto-Attendant, Music On Hold, Extension Dialing, Conference Bridges, Business-Class Voicemail, Caller-ID with Name, Call Waiting, Call Transfer, 3-Way Calling, Call Forwarding, Do Not Disturb, Distinctive Ringing, Hunt Groups, Ring Groups, Lifetime Customer Support and more are included with every Virtual Office calling plan.

Hosted IP-PBX services like Virtual Office can also help businesses eliminate the overhead cost associated with brick and mortar buildings since employees may work from any location equipped with a high-speed Internet connection.

"Probably the number one feature that interests an SMB is multi-site support," says 8x8's Immethun. "Normally, multi-site support is very expensive to buy and very complex to administer — especially when you add applications such as voicemail, an auto attendant or hunt groups. With our Packet8 Virtual Office, the location of the 'site' is irrelevant and all features are included."

IP-based telephony offers numerous cost benefits and advanced features that can help your business stay competitive. Mention TMCnet and get your first month of service free. Offer expires September 30, 2007.

"We saved over $3,000 on equipment and installation charges, and lowered our monthly phone bill by more than 60%! Virtual Office is perfect for our small business."

- Cindi Gardner & Greg Bruno, Partners
CGI Mortgage - Campbell, California

Packet8 Virtual Office

Over 7,000 businesses like CGI Mortgage have lowered their monthly phone bills and total cost of ownership by switching to Packet8 Virtual Office. Packet8 Virtual Office is a complete VoIP hosted business phone solution that includes unlimited calling in the U.S. and Canada along with enterprise PBX features like Auto Attendant, Conference Bridge, Music on Hold, Business Class Voicemail, Extension Dialing and many more for just $49.99 per month. Packet8 Virtual Office takes the hassle and expense out of owning and managing a business phone system.
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Packet8 Virtual Office Ranked Most Popular Small Business Hosted VoIP Service in the U.S.
- AMI Partners, April 2007

www.Packet8.net | 1.866.895.0445

Packet8 *Internet Phone Service*

By Tom Keating

nizing organizational and directory sources into VXTracker, the system identifies and tracks your voice inventory (IP phones) and identifies what assets and user Moves, Adds, and Changes are occurring across your network.

VXTracker details your expenses from a carrier, user/department and carrier perspective. Whether it's managing contracts, building a business case for network change, or simply charging back expenses to the organization VXTracker has you covered. VXTracker is an incredibly powerful call accounting system but extends this product category by adding trunk contract monitoring, fixed asset charge back and automatic synchronization of users to Active Directory/LDAP sources. Understanding the financial aspects of the entire voice network for fixed and variable expenses is key to making key strategic decisions. Furthermore by being able to allocate and chargeback these expenses enables IT/Telecom to recoup expenses based on the service they provide.

Tango Networks Abrazo www.tango-networks.com/

(news - alert) The Tango Abrazo integrates an employee's mobile phone with an enterprise PBX to offer unified communications and fixed mobile convergence (FMC) in an easy-to-deploy solution. Employee mobile phones become PBX extensions, enabling desktop and mobile phones to share a single number with access to the same advanced PBX features and a single, unified voicemail box. The Abrazo works with any mobile phone and is not dependent on dual-mode mobile devices and doesn't require special client software on the mobile handset. Using Abrazo, even though the call to your office extension is forwarded to your mobile device, it displays the CallerID info from the caller. In addition to this "single CallerID", Abrazo gives you "Single Voicemail", and enhanced mobility to give users anytime, anywhere accessibility.

Because Abrazo works with any handset it doesn't require that a company purchase new, expensive dual-mode handsets. With the Abrazo, enterprises can offer a mobile solution using their current networks, while carriers can support enterprises without having to make costly upgrades to their systems. Tango explained, "The solution is designed using a unique hybrid architecture, which keeps the service provider at the center of the value chain while giving the enterprise the ability to control their mobile workforce."

Tango's hybrid architecture takes the advantages of both carrier-based and enterprise-based solutions without the drawbacks. It does however require a component located both in the service provider's network and a corresponding component in the enterprise. But carriers and service providers that deploy Abrazo in their networks can easily espouse to potential customers the benefits from advanced PBX features with any mobile device, and the ability for the enterprise to leverage their existing PBX investments to support mobility services.

One key component of Abrazo is its corporate control and management functionality: Policy-based calling restrictions enable the enterprise to provide a mobile phone to an employee and tailor the service plan to that employee's job function, eliminating the potential for abuse on company-provided phones. For instance, an employee's mobile phone could be activated only when the employee badges into the office or logs onto the data network. The call monitoring, tracking, and recording functions help enforce these types of policies. Abrazo ensures that the mobile phone number belongs to the corporation and the employee needs only one phone number. If an employee leaves the company, that phone number, just like a typical desk phone, stays with the company, along with all the associated contacts and business. In addition, APIs allow the enterprise to customize policies and integrate with other enterprise applications (CRM, ERP, SFA, etc.) to create a powerful rules engine.

Truphone www.truphone.com Truphone

Truphone (news - alert) is a software-based solution that enables Wi-Fi equipped mobile phones to make 100% VoIP calls at either zero or very low cost to the caller, by using the Internet to route network traffic, rather than traditional mobile phone networks. When a Truphone-equipped handset is not in Wi-Fi range it reverts to being a normal mobile phone, with calls routed over GSM
as usual.

Truphone-to-Truphone and Truphone-to-SIP number calls are free, and Truphone calls to other phone numbers are charged at rates usually cheaper than those charged by mobile operators or conventional fixed lines. Google Talk and Truphone interconnect, which means that Truphone calls to and from any Google Talk user are also free.

Truphone leverages SIP, RTP (audio), and transcoding using the Adaptive Multi-Rate (AMR) codec used in the phone to G.711 if required for transmission to the PSTN via the SIP router. The handset software is written in C++ on the Symbian operating system, which means it works with most Nokia phones.

Truphone has developed access point scanning and auto-connection software, which means that a Wi-Fi equipped handset will detect when in range of Wi-Fi, and will route voice calls via the internet. For users this means running the Truphone Wizard will scan available wireless access points in range. If out of Wi-Fi range, Truphone will automatically forward incoming calls to the GSM mobile.

Vertical Networks Xcelerator IP Application www.vertical.com

(news - alert) Xcelerator IP is very innovative all-in-one converged communications device that is perfectly suited for the SMB market. Featuring integrated wired and wireless connectivity, SIP-based VoIP, and an advanced data router/firewall, the Xcelerator IP packs many functions into a single unit. It also acts as an 802.11g wireless access point (WAP) and includes a Web-based configuration for easy setup and maintenance. With its SIP-support you can have IP trunks resulting in less expensive calling.

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Other features include analog failover, integrated voicemail and auto attendant, 911 Support, WAN Routing, and NAT traversal. Importantly, the built in router and firewall features WEP (64, 128-bit) encryption; 802.1x and WPA/WAP2 authentication; password-protected system managemen and packet filtering.

Xcelerator IP is one of the first to market to combine IP-PBX functionality with wireless routing. Xcelerator IP provides small business owners and home office professionals with a virtual plug-and-play installation which builds a wired data network, wireless data network, a traditional PSTN voice network, and a VoIP voice network all in one device. Up to ten Xcelerator IP gateways can be networked to provide a multi-node solution with an integrated dial plan, within which users can initiate, receive or forward calls to each other over the network or out of the network.

8x8, Inc
Packet8 Tango VTA (Video Terminal Adapter)
www.packet8.net

(news - alert) We already know that VoIP (define - news - alert) is growing exponentially, but what about video over IP? Sure, YouTube is popular as is many other video streaming sites, but we're talking about video where you communicate with other people. Why is it that most broadband VoIP service providers give you an old school analog telephony adaptor to connect your home phone(s) and not some cool new fandangled digital videoconferencing phone with a built-in camera? Why are we stuck using analog phones when using VoIP? Well, there are some solutions out there, but many of them are "corded" solutions. That is, if you want to use the video feature, you have to use the corded handset and are not free to roam around. You are chained to the videoconferencing device.

8x8 took a unique approach in allowing you to use your home cordless phone while adding video functionality to give you the best of both worlds. Their Tango VTA (Video Terminal Adaptor) lets you plug in any analog phone device, including a cordless phone into its built-in analog FXS port, thus giving you wireless freedom with full videoconferencing capabilities.

Tango is a SIP-based device featuring a built-in 180-degree rotating camera, a TFT LCD 5" display with smooth full-motion H.264 video, and customizable screen savers. You can import your Outlook Contacts into Tango using the USB port and software. Both LAN and WAN ports are available on the unit. It also had replaceable faceplates and a, sleek thin design measuring 8.5" x 5.5" x 1.38". Tango also features a remote surveillance mode, and an icon-based GUI. IT

IMS Interoperability Testing for Solid Roll-outs

Delivering advanced communications services only works if your networks are speaking to each other.

IMS (IP Multimedia Subsystem) networks will likely become a primary set of next-generation networking specifications for the entire telecommunications industry. Why? The business benefits and opportunities for service providers, their equipment suppliers and partners are extremely compelling. They include convergence of fixed/mobile and voice/data, quicker introduction of new services, lower network maintenance OPEX and the migration to VoIP away from traditional networks.

Telcos will realize more control over their networks, and will be able to implement a scalable, interoperable platform for new value-added services, without watching them being undercut by Internet giveaways. The ability to satisfy demand for fixed/mobile convergence will also drive new business. For instance, IMS-capable networks will allow, among other things, a cellular telephone user to communicate seamlessly using VoIP over an 802.11x access network. This will not only make possible delivery of video-on-demand to corporate desktops over Ethernet and to handheld computers over 802.11 or 3G wireless networks, but also allow blending that service with other services such as presence, unified messaging and location. IMS will let users transparently access their services across cable, wireline PSTN service and wireless service, both locally within a service provider network and roaming between carriers. More good news: IMS is expected to deliver tremendous opportunity for revenue growth for carriers/service providers, both through attracting new customers and by increasing ARPU (Average Revenue Per User). It's also expected to reduce customer churn and cut out rival poaching on their customer base. This rosy picture is obviously dependent on a successful, rock-solid IMS deployment.

if IMS-based services stumble on reliability or disappoint customer experience expectations, repeat business will fizzle.

Analysts predict both consumers and the corporate base will be drawn to the promise of IMS, and will remunerate leading-edge service providers with reasonably high-margin revenue. However, if IMS-based services stumble on reliability or disappoint customer experience expectations, repeat business will fizzle. A rushed, untested deployment would likely be unsuccessful due to the numerous protocols in play required to support IMS and the ensuing interoperability challenges, and probably spell disaster for the hastily-minded Telco.

Since service providers will need to allocate significant resources for CAPEX investment, providing for new spending on most aspects of equipment, from the core to the edge, including customer premises gear, management systems and handsets, it will serve them to plan the new network design carefully and ensure compatibility of all their network components whether it happens to be between new device and applications and legacy equipment, or compatibility between their network and their partners' network, well in advance.

A complete outline for the different test phases of an IMS network includes the following:

Research and Development: Test vendors are scoped and selected to assist with prototyping services. Preliminary regression and black-box/functional testing are performed. In this phase, test vendors should help service providers reduce their time to market.

Quality Assurance: Regression testing continues for quality purposes. However, in this stage, test vendors also conduct load and stress testing to determine the highest capacity of calls or sessions.

Production: This stage is perhaps the most crucial as services are actively deployed. Testing must continue to conduct load/stress testing as interoperability testing begins. This is a key stage because interoperability is one of the most important components of IMS deployment success.

Trial: Interoperability testing continues to be a crucial part of this stage. Functional testing is performed continuously throughout the lifecycle.

Deployment and Maintenance: The last two cycles are fundamental to a roll-out. Active and passive monitoring and

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By Pierre Lynch

ensuring of quality of service (QoS) are essential to maintaining customer satisfaction, and test results must ensure these. As IP services become more complex, it will be essential for service providers to have a comprehensive solution for monitoring and maintenance in place.

The onus will be on telcos to insist that all participants acknowledge the critical role that protocol simulation and systems testing will play in the successful design, evaluation, roll-out and day to day operation of IMS-compliant networks, their infrastructure and equipment and the services they deliver. Telcos and service providers may find it difficult to accurately prototype and predict the effects of IMS traffic on their production networks, and may be confused when assessing interoperability of IMS-based equipment with other IMS-based equipment, either on their own networks or with partners. This will make it difficult to troubleshoot handshaking, media conversion and synchronization issues, and in turn guarantee quality of service to their customer base. The reality that IMS protocols are still evolving and will continue to do so for years, compounds the issue.

IMS implementation will be anything but a "slam-dunk," with several complex challenges to overcome.

Perhaps the ultimate interoperability challenge that IMS poses involves mobility. A very simple single example would be a call made from a roaming mobile handset in your network. The handset will have been tested for interoperability within its own network, but not yours, and it might not behave like the mobile handsets that you have tested. Mobile providers will need to focus on SIP (Session Initiation Protocol) signaling and look at the protocol stacks within the network to ensure that in addition to being correctly and accurately implemented, they are fault-tolerant. Besides handling a session that happens to use one particular flavor of SIP properly, a network must be able to handle multiple flavors of that protocol correctly and behave gracefully if mismatches occur. If the network can't accomplish this feat, it could drop calls and sessions or experiencing service interruptions, all resulting in frustrated users. Kind of a tall order that must be filled to be considered primed for roll-out, right?

As already discussed, the IMS protocols are evolving and in flux. SIP, a mainstay VoIP protocol, is at the front of the evolution pack and IMS SIP is not just plain old SIP. It's SIP on steroids, so it adds complexity. The IMS specifications have imposed additional requirements on the base SIP implementation in order to accomplish the task of IMS session management correctly. These new SIP enhancements are usually at the center of interoperability issues experienced when getting IMS devices to talk to each other. There are many interpretations on how they should work, and there is much discussion concerning their implementations within the IMS development community. This makes testing and stressing of different formats of SIP headers, procedure options and variations of handshake methods critical during the first stage of deployment. Signaling exchanges have to occur properly, errors and retries need to be responded to in a timely manner using agreed-upon parameters, and attempts at invoking unsupported or unknown features must be handled cleanly and gracefully.

The last, but not least, thorn in the side of service providers when it comes to interoperability issues are network dependencies. There will be numerous entities in the IMS network performing various tasks that need to understand SIP. These entities will almost certainly not be supplied by the same vendor, and will thus have different SIP implementations. Their evolution paths will not necessarily be identical or in lock-step: the vendors will supply software upgrades and enhancements at a different rate, and possibly containing different functionality. Extra care must be taken to make sure that every time a modification is made to an entity, either in the form of an

upgrade or a change in configuration, that the existing network functionality isn't affected by the change. A series of regression tests should be executed after every change to ensure interoperability wasn't affected by the change. Network equipment and software that have been tested with numerous vendor IMS products to validate their ability to drop into new networks with minimum interruption will go a long way toward minimizing network dependencies, achieving interoperability and provide the telco with underlying confidence that their network will support a mixed, multi-vendor environment. The key is to continually test with an updated regression suite so that the introduction of changes into the network, from diverse sources, does not produce unexpected results due to dependency conflicts.

At the end of the day, the promise IMS holds for consumers is to receive an application-rich, better, higher quality of experience, and to enjoy advanced telecommunications using any device, from anywhere with any type of media. For businesses, benefits will take shape as unified billing, negotiated bundle deals and newly-integrated services with better QoS and service level guarantees.

For Telcos to cash in, the key elements for IMS testing success include having as much real equipment as possible and driving the testing gear out toward the edge as much as possible. Service providers will own the competitive advantage if they choose test gear that emulate the edges as closely as possible and in as many different profiles as can be imagined, and have the ability to generate arbitrary traffic from any point on the network, as well as thoroughly analyze traffic at the end point. In other words, having tools in the lab that can emulate as many different flavors of SIP providing many different services will result in a faster response time, less downtime and provide faster times-to-market for new services. The tools should then be used in a continuous test cycle in a lab where all proposed changes, including software revisions, data migrations, bandwidth management and security, are tested using a well-maintained suite of test cases before implementation. Only then can you be guaranteed that the new services will operate as predicted and won't affect existing applications. IT

Pierre Lynch is Director of Wireless Strategies for Ixia. (news - alert) For more information, visit the company online at http://www.ixia.com.

Some things are better left untouched.

Before you start that big transition to VoIP, hold the phone. It may not be the grand reconstruction project they've been talking about. Simply stated, it isn't about ripping and replacing or big, upfront costs. That's because it isn't about hardware.

It's actually about software.

Now you can keep your hardware—your PBX, your gateways, even your phones. Move to VoIP with software. Software that integrates with Active Directory,® Microsoft® Office, Microsoft Exchange Server, and your PBX.

Maximize your current PBX investment and make it part of your new software-based VoIP solution from Microsoft. It's big change, without changing it all. Learn more at microsoft.com/voip

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IPTV Myths — Part 2: Experience

In our previous issue we ran the first part of the guest series authored by Hemang Mehta, IPTV Group Product Manager for Microsoft TV, focusing on the technical aspects of this burgeoning market. In this month's installment, Mehta analyzes the common misperceptions of what the IPTV experience will be.

Myth: IPTV is grounded in hype, and is "me-too" TV in reality.

The reality. IPTV is not a copy of the current broadcast TV but gives us a basis for re-inventing TV, which other broadcast pay-TV services cannot match. It already has better security, has been adapted for high definition TV, and has added advanced picture-in-picture services. It has also made possible mosaic interfaces, where instead of looking at text describing numerous TV programs, viewers can look at live TV miniature moving pictures of the actual programs. This is just the start, and there is much more to come.

The explanation. The ubiquitous nature of IP data makes it relatively easy to create layers and layers of services on the same network. But many IPTV companies have only been trying to reinvent cable TV, for a lower price, and worry about innovation later.

That might be okay for services that don't compete with major established national TV brands, such as rural telcos, or those operating in less advanced countries with lower quality TV. But in the end IPTV will live or die by its ability to provide a better TV experience and integrate with other IP-delivered services on the same network displaying them on the same devices. Many of the world's top telecommunications service providers recognize the need to deliver a "better TV" solution to compete in today's market, and they are increasingly turning to IPTV to do so.

Thousands of applications will be written to take advantage of the possibility of interconnecting the IPTV world with IP-based services. Here are a couple of examples:

- When an instant message reaches a home gateway, intended for a PC, it might find the device either turned off, or currently not in use. In this case, it can be diverted to the TV screen, or to a mobile phone. If the TV is not on or the message goes unanswered by a certain time period, it could be turned into a voice signal or SMS and dropped into a mobile phone voicemail or messaging system.

- Consider a business traveler. When a traveler is in the middle of a video call on a mobile, he may want to show PowerPoint slides in his email, teleconference a third person in, or when he gets home, transfer the call to the home PC or TV screen.

That type of service is only possible when the same data formats are used, the network is intelligent enough to transcode (translate from one encoding to another in real time) for a new, smaller device, and where a federated identity can be shared across multiple devices and applications so that some central server knows that all these devices are different facets of the same person.

These types of scenarios are mostly futuristic, but without widespread adoption of IP as the routing and packet-switching process for the data, none of it would be possible, and where it might be possible, it would be too expensive to achieve.

Myth: IPTV will stop me from being able to use downloaded video programs in other formats on my broadband line.

The reality. Video file downloads to the home are an important business, and it is unlikely that any broadband operator will simply opt to block video from such sources, just to promote its own IPTV service. IPTV is real time; downloads are not. IPTV is about building an instantaneous delivery network for services that customers need now; file downloads are about "mail order" style deliveries ordered now, which come later.

The explanation. IPTV is designed to "at least" replace existing pay-TV systems and do a lot more besides. All other forms of "delayed", best-effort video downloads are really about "augmenting" the pay-TV service customers already have, not replacing it.

A complicated process takes place to get the access network and the core telco network to ensure that an IPTV service can be delivered reliably in real time. IPTV can't really exist without these network additions, because they

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By Hemang Mehta

enable a TV program to be sent from a "head-end" encoder and arrive at a TV set, every time, at the same speed that it plays out on the screen.

Services that "arrive at the speed of the network" are referred to as "best effort." They get to their destination as fast as the network allows. The key is for the operator to build its network in such a way that most of the Internet packets sent into its network find their way to the right destinations in a reasonable timeframe. The Internet Protocol is clever enough to fix any problems that occur on its own, by arranging the resending of any lost or late packets.

That journey starts from a home DSL modem, travels across the last-mile copper or fiber to an access multiplexer that automatically sends Internet traffic across an aggregation network (a set of routed connections) to one big server called a Broadband Remote Access Server or BRAS. In the same way, all Internet traffic comes from this same server and returns by the same path. IPTV comes via a separate server over a guaranteed route — only meeting this traffic in the "last-mile" connection to the home.

As the size of files that are downloaded over the Internet get bigger, operators are adding more bandwidth from their BRAS to homes. However, operators can only keep up with demand based on the pricing of their broadband services. If broadband pricing continues to fall, then operators will not have enough money to keep this part of their network developing in line with Internet traffic. As video downloads increase and take up more of this "best-effort" traffic, it will put an increasing strain on such networks. This is exactly why IPTV's guaranteed real-time delivery is so important.

If piracy could be completely eliminated, then these networks would be freed up more and more for legitimate traffic, and if spam could be eliminated, then even more bandwidth could be kept back for legitimate uses. Applying as many technological resources as possible to solve these two issues is essential and in time this will be achieved. But until then, telcos must balance their broadband revenues with money spent providing Internet access. We see that as completely unrelated to the resources that are made available for IPTV and the only limiting factor in download video services.

A complicated process takes place to get the access network and the core telco network to ensure that an IPTV service can be delivered reliably in real time.

Myth: If I have a Digital Video Recorder, I don't really need IPTV.

The reality. IPTV and Digital Video Recorders (DVRs) are actually complimentary services. A DVR has to get its content from somewhere, and that has to be either a quality TV service such as is provided by IPTV, or file download programming over the Internet. IPTV, working alongside a DVR, gives the consumer a complete experience, including the ability to pause and rewind live programming.

The explanation. DVR is one of the key features consumers want. There are, however, many great TV applications that a DVR — which is basically a recording device — cannot deliver. These include things such as picture-in-picture mosaics, advanced search functions, connected services such as caller ID, photo sharing and email delivery on TV and across devices, and so much more.

There is an entire ecosystem that must be built around DVRs, and in order to get the best benefit from them, the content on the DVR is best derived from an IPTV system. This is because DVRs can be a stopping-off point between the IPTV service and portable devices and home networks.

Once content has been delivered to a home over an IPTV system, its viewing life does not end there. That content must be protected from piracy in a way that does not infringe on a consumer's right to personal use of that content on all of his or her devices.

The easiest way to do this is to design the encryption for the DVR with transport to portable devices in mind. One organization that is doing this is the Digital Living Network Alliance (DLNA), which selects existing standards and then ensures that varying implementations of these work together in the future digital home.

The DLNA has 250 member companies, including virtually all of the leading consumer electronics and high technology businesses with a stake in this area.

At the moment, IPTV is farthest ahead on acting as the gateway to deliver content into the DVR that can be accessed elsewhere in the home. There are unresolved issues in delivering content from two competing high definition DVD standards, and mobile content is not dense enough, while cable and satellite both have format obstacles to overcome. The two prominent ways to deliver content into such a home network are through an existing pay-TV system (of which IPTV is the best since IP is such a ubiquitous data format to work with), and the PC, which uses the same IP format. IT

Hemang Mehta is IPTV Group Product Manager for Microsoft TV. (quote- news - alert)

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Security Issues in IMS

The rapid growth of broadband Internet, and the exploding subscriber demand to enable more integrated and sophisticated communications, is driving network operators to offer new multimedia services anywhere, anytime. These enriched services enable subscribers to communicate and collaborate in real-time, using any combination of voice, video, pictures and text messages. In order to deliver these uniform, extendable services, along with mobility and roaming capabilities, operators require a flexible and standardized network framework.

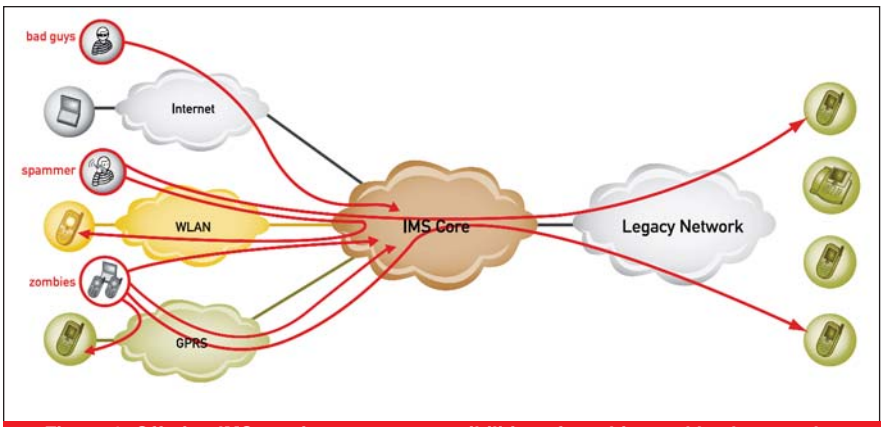

Figure 1. Offering IMS services creates possibilities of zombies and hacker attacks.

The IP Multimedia Subsystem (IMS), first specified by the Third Generation Partnership Project (3GPP/3GPP2), is a key enabler and service-delivery platform for these services. IMS is a global standard that defines a generic architecture for offering VoIP and other multimedia services over the Internet, independent of access type – whether it is cellular (GPRS, 1x), WLAN (WiFi), wireless broadband (WiMAX, EVDO Rev A, HSPA) or wireline broadband (xDSL, Cable, FTTx). And since IMS protocols are based on the open IETF SIP specifications, any IMS network device can take advantage of the exploding SIP adoption by other IP phones, adapters and soft clients.

The result is, with IMS, operators can offer many real-time communication services for virtually any device over any Internet access network for the first time. However, like any application offered over the Internet, these IMS networks and devices are now subjected to threats from worms, viruses, denial of service, spam, phishing, and theft.

Just like all e-commerce companies, operators must be aware that core infrastructures and subscribers are vulnerable to attacks and service abuse from malicious users, infected devices, zombies, hackers and spammers. While e-commerce companies go to great lengths to protect their core servers, operators must also protect IMS cores and services offered, with equal diligence. Operators should be even more concerned about these threats as they could also penetrate into legacy networks and affect their large, installed customer base, as shown in Figure 1.

This article outlines several IMS attacks that can be launched, and the different security requirements that must be addressed. It also presents characteristics of a security approach that can complement current authentication and encryption, to protect against all of these attacks.

IMS Vulnerabilities

As mentioned at the outset, IMS and SIP enable a rich set of converged services, but, at the same time, open up networks to a host of known IP-based vulnerabilities, which can often be addressed by existing firewalls, and also to a completely new set of IMS application vulnerabilities. In fact, in the last three years, the Sipera VIPER™ (Voice over IP Exploitation Research) Lab has identified over 20,000 attacks that can be launched against IMS networks, as shown in Table 1.

Signaling attacks on infrastructure	IMS
Fuzzing	>20000
Reconnaissance	8
Flood	>60
Distributed Flood	>40
Total	>20108

Signaling attacks on end-users	IMS
Misuse	19
Session Anomalies	4
Stealth	7
Spam	6
Total	36

Media attacks	RTP/RTCP /RTSP
Fuzzing	10
Flood	4
Misuse/spoofing	7
Total	21

Table 1. Unique IMS attacks as cataloged by Sipera VIPER Lab.

Looking in more detail at the potential attacks that may exist in IMS networks, the more prevalent and potentially damaging application level threats that can be used to attack the core infra-

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By Krishna Kurapati

structure and take down the service or used to attack the end-users are:

- Flood DoS and Distributed Floods
- Protocol Fuzzing
- Stealth Floods
- VoIP Spam
- Fraud
- Rogue Devices

Flood DoS and Distributed Floods. Flood DoS and DDoS attacks are those attacks whereby a malicious user deliberately sends a tremendously large amount of random messages to one or more core network elements from either a single location (DoS) or from multiple locations (DDoS). Typically, the flood of incoming messages is well beyond the processing capacity of the target system, quickly exhausting its resources and denying services to its legitimate users. (See Figure 2.)

Protocol Fuzzing. Malicious users will send messages whose content, in most cases, is, on the surface, good enough that the target will assume it's valid. In reality, the message is "broken" or "fuzzed" enough that when the target system attempts to parse or process it, various failures result. These can include application delays, information leaks, and even catastrophic system crashes.

Fuzzed messages can easily be transmitted using encrypted and authenticated traffic, all the way to the IMS core. Existing security devices do not generally have the ability to decrypt the traffic at wire speeds, and look at all the details of the protocol (header, body, content, etc.) to make sure there is no malicious intent, and therefore cannot protect against some of the most damaging attacks towards the infrastructure.

Stealth Floods. Stealth attacks are those in which one or more specific end-points are deliberately attacked from one (DoS) or more (DDoS) sources, although at a much lower call volume than is characteristic of flood type attacks. Detection of stealth attacks is vital for VoIP systems, as they have the potential to be far more annoying than what we are familiar with in the data world. IMS security solutions must be more sophisticated and use different techniques to protect against stealth and VoIP spam.

VoIP Spam. VoIP spam or Spam-over-Internet Telephony (SPIT) is unsolicited and unwanted bulk messages broadcast over the IMS network. In addition to being annoying and having the potential to significantly impinge upon the availability and productivity of the end-point resource, high-volume bulk calls routed over IP are often times very difficult to trace, and have the inherent capacity for fraud, unauthorized resource use and privacy violations. VoIP spam attacks

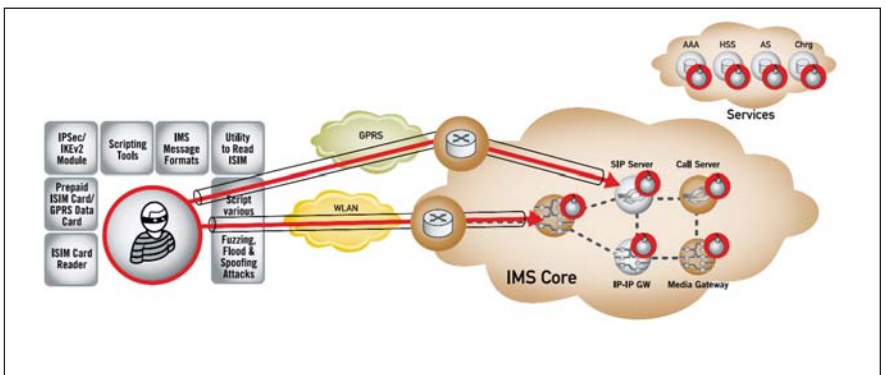

Figure 2. Hacker sets up multiple IPsec tunnels to various PDGs in the network and then sends flood of 10,000 messages per second, which is equivalent to traffic from 10 million subscribers.

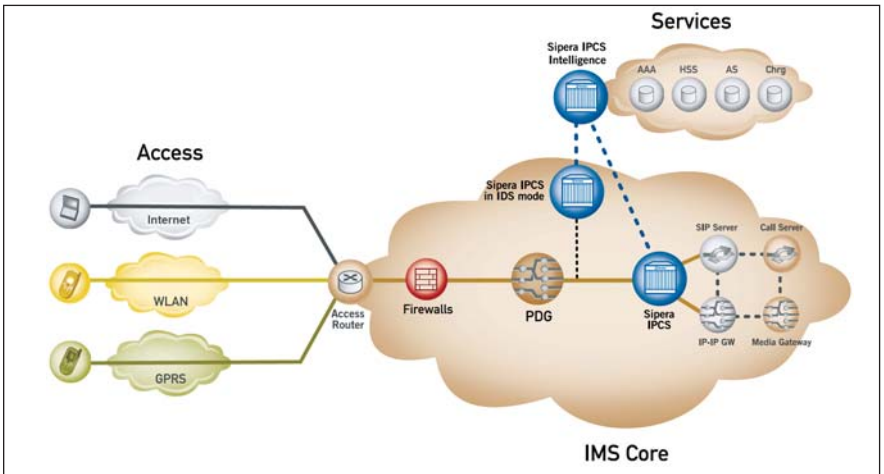

Figure 3. IMS reference architecture with IMS application layer security device.

can be launched like stealth attacks cited above, and target subscribers of IMS services.

Fraud. Once hackers gain access to an IMS network and servers, they can commence toll fraud by acting as a gateway between the local PSTN and the IMS network, similar to last year's publicized, million dollar toll fraud exacted on several VoIP networks.

In addition, a fraudulent user can access an entire IMS network and servers by hacking routers, firewalls and operating systems, which can expose sensitive details of subscriber call records.

In order to protect against fraud, the behavior of all subscribers must be monitored in real time, with misbehaving subscribers blocked.

Rogue devices. Smart device proliferation and new access capabilities including USB, Bluetooth and downloadable software, devices themselves can inadvertently pose a great risk to IMS networks. These devices can be recruited by hackers as bots on the Internet, to proliferate attacks deep into IMS networks and applications.

Building an Attack Tool is Easy

Compounding the issue of threats is the fact that building an attack vector takes very little investment in terms of time or money. The required components are available free of charge, as open-source software and all the required specifications are publicly available at the 3GPP website. Hackers, in a few days, can easily write scripts required to read U/I-SIM cards, which are easily acquired and can be used to launch various attacks.

Comprehensive Security for IMS Networks

IMS specifications have rigorously defined the authentication and encryption frameworks required for these networks by combining cellular phone and Internet standards. However, with any subscriber having access, anytime, using any device, these techniques provide limited security at the access level, and cannot protect against threats from rogue subscribers or hackers working from within rogue countries. Like e-commerce companies, IMS operators should also deploy IMS application security. This layered approach to security ensures that operators not only protect their IMS core and subscribers, but also ensure their legacy core and subscribers are protected.

An IMS application layer security device, as shown in Figure 3, should implement sophisticated IMS-specific security methodologies that include behavior learning, filtering, anomaly detection and verification.

This would complement existing PDGs and data firewalls with application-level intrusion prevention, denial of service prevention, and anti-spam filtering to protect infrastructure nodes and end-users against unique IMS application attacks such as fraud, floods, stealth, protocol fuzzing and VoIP spam.

Such a security device should be designed specifically to offer the performance and scalability required by operators, learn about call and traffic patterns on the network, and dynamically adjust to prevent application layer attacks.

Conclusion

The probability of malicious attacks and service abuse of VoIP and other real-time, IP communications applications continued to increase, together with the increase in attack sophistication. All of these developments are creating a new level of security requirements for the operator that go beyond anything that has been traditionally deployed.

The only way to provide the required level of protection is to adopt an IMS application-level approach that utilizes the best, existing security techniques but also incorporates a variety of sophisticated VoIP-specific security methodologies that include behavior learning, filtering and anomaly detection and verification. Together, these practices proactively protect the IMS network from attacks, misuse and service abuse which networks and end-users face today and in the future. IT

Krishna Kurapati is the Founder and CTO of Sipera Systems, (news - alert) a leader in pure security for VoIP, mobile and multimedia communications. Sipera can be reached at 214-206-3210 or http://www.sipera.com.

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Demystifying SIP Trunking

Back in the days of wireline telephony, when all phone calls went over the PSTN, businesses would purchase "trunks" — a dedicated line or a bundle of circuits — from their service provider. Today, we have adapted the concept of "trunking" into the IP-enabled landscape.

A SIP trunk is the use of SIP to set up communications between an enterprise IP-PBX and a service provider where voice becomes just another application over the Internet. Unlike in traditional telephony, where bundles of physical wires were once delivered from the service provider to a business, a SIP trunk is a logical connection from one point to another over an IP connection, like the public Internet.

No More BRIs, PRIs or PSTN Gateways

SIP trunking offers immediate ways for businesses to reduce communications costs. They make it unnecessary to purchase ISDN, BRIs (Basic Rate Interfaces), PRIs (Primary Rate Interfaces) or local PSTN gateways. SIP trunks also produce long-term savings by supporting business growth. Using IP, there is typically excess bandwidth already included in the Internet connection, making it unnecessary to purchase additional capacity. There is often more than enough bandwidth to handle VoIP calls.

SIP trunking also reduces costs by eliminating the need for separate voice and data connections, and expands the potential for communications convergence using both voice and data together. Further, as a company grows, all necessary infrastructure to handle additional voice/data traffic is already in place.

A single corporate SIP trunking account can serve an entire enterprise, no matter the size. This solution is more flexible compared to traditional PRI options when it comes to accommodating additional employees as there is no need to buy new hardware as the enterprise grows. Also, multi-site enterprises can use a single SIP trunking account rather than multiple sub PRI connections.

SIP Trunking: Extending the Benefits of Your IP-PBX

The emergence of service providers offering SIP trunks to enterprises means that enterprises can outsource their PSTN connectivity to a third party — the service provider. All calls including long distance calls are carried over the Internet and the breakout point to the PSTN is as close as possible to the party you are trying to reach. The call is passed over the PSTN from that breakout point to its final destination. For companies doing business globally on a regular basis, this can have a significant impact on long distance communications costs.

Connecting Remote Workers to the SIP Trunk without a VPN

Business professionals are some of the earliest adopters of convergence technology; most, in fact, find themselves connected to the Internet around the clock, whether they are working from their homes or any other place in the world. VPN tunnels are frequently the first thought for connecting remote users. Although this may be one solution, VPN tunnels are not the best way to connect remote workers in today's 24/7 connected environment, because:

- It does not scale well as all traffic to and from remote workers has to be routed to a central point for further processing
- They create isolated VoIP islands which do not allow calls from any external parties over IP.
- They work best where you have control over the infrastructure (in home offices, for instance).
- They do not always work from hotels, etc. (in our experience about 50% of the cases).
- WiFi phones and dual Mobile/WiFi phones don't normally support VPN clients.
- QoS (Quality of Service) can be taken out of play in some VPN implementations where the headers are encrypted.
- They can pose a threat if the client device is compromised by malicious code.

SIP trunking, when used in conjunction with SIP-specific remote connectivity solutions, allows remote users to traverse most SIP-unaware firewalls and NAT (Network Address Translation) devices found in residential, hotel and similar locations and use all the IP-PBX functions installed in the enterprise. There are several types of solutions to these issues. The IETF has recommended ICE (Interactive Connectivity Establishment) to resolve NAT traversal issues. However, more secure

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methods of traversing common NATs are available on SIP-aware firewalls which employ far end NAT traversal techniques to open the necessary ports at a remote site to establish a connection with the remote party. These solutions work for most common remote NATs, even symmetric ones, remote residential firewalls and from behind business firewalls that permit access to the Internet.

Infrastructure

A relatively small investment is necessary to benefit from the use of SIP-based communications and to enjoy the cost savings that accrue from using a SIP trunking service provider. For the enterprise, converting to VoIP usually involves the purchase of an IP-PBX, IP Phones or soft clients (those which operate on typical PCs or laptops), and a SIP-aware firewall to maintain security while admitting VoIP traffic.

Delivery and Quality of Service

Although the IP pipeline can carry much more traffic than a traditional connection, it is important to employ proper quality of service (QoS). Voice and video are very susceptible to delay, which means that some QoS procedures should be in place to guarantee priority delivery of these packets vs. other information downloaded to the converged network.

To deal with this issue, many providers offer private networks based on Multiprotocol Label Switching (MPLS) which gives the carrier flexibility in how calls are routed and bandwidth is used. For the enterprise, private connections offer the opportunity to hold the service provider accountable for delivering a certain level of quality. However, the enterprise is then tied into the specific service provider's PSTN connections and calling rates. The enterprise cannot reduce calling costs by connecting to several service providers offering alternate local PSTN breakouts over the Internet.

Despite some perceptions to the contrary, the core network of the Internet is often not a bottleneck today. The last mile and the customer network can be. But with the right QoS prioritization and admission control at the enterprise edge, this is more a theoretical than a practical problem. These capabilities are available on a true proxy-based, SIP-capable firewall solution which offers capabilities not incorporated into IP-PBXs, and the enterprise that adopts a SIP trunking strategy is advised to install such a device to optimize the VoIP experience at the lowest cost and provide edge security against malicious use of the network.

Security over the Public Internet

Security is a top priority for every business. Using a firewall that's specifically designed to handle SIP communications will provide the best defense against unwanted activity. Full SIP proxy technology allows for advanced filtering, verification and routing, as well as dynamic control of the opening and closing of media ports. Some products offer encryption of the signaling using Transport Layer Security (TLS) and of the media (voice, video, etc.) using Secure RTP (SRTP) or other algorithms. With encryption, the sessions are kept private with no chance of eavesdropping.

Authentication with the service provider is also critical. While some IP-PBX equipment can support this natively, others cannot. A full SIP proxy firewall or other edge device may offer this capability as well, meaning that enterprises with non-authenticating IP-PBXs can still take advantage of SIP trunking to reduce communications costs.

Many enterprises have traditional firewalls--ones that do not support SIP--installed, but still want to adopt SIP based communications also outside the enterprise. In that case, a customer premises, add-on solution offers the enterprise all the advantages of a proxy-based SIP security and control device, without the need for replacing the existing firewall.

Another security-related issue is redundancy. A fully SIP-capable firewall or customer premise device can provide a robust system for securing full VoIP redundancy, as traffic can be routed to a back-up carrier if the primary carrier is unavailable. And with a proxy based firewall solution, the enterprise may be able to use it to provide local call management if the service provider cannot be reached and if installed at the enterprise could route calls to a local PSTN gateway in the event that all service provider connections are unavailable.

Summary

Internet Service Providers (ISPs), both large and small, are offering SIP trunks to businesses for connection to the PSTN. This service permits businesses to adopt voice-over-IP with its attendant benefits and remain connected to others who rely on the PSTN.

SIP trunking offers enterprises the benefits of converged communications and saves substantial expense by having the calls terminated closer to the called party. It also eliminates the need to purchase BRIs, PRIs or PSTN gateways. A robust enterprise solution combined with a SIP trunk from an ISP results in the promise of global connectivity, over the Internet, so long envisioned by the voice-over-IP pioneers. IT

Steven Johnson is President of Ingate Systems. (news - alert) For more information, visit the company online at http://www.ingate.com.

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Considering Fax in an IP Communications Strategy

Back in the 1980s it was difficult to cross a street in New York (or any city for that matter), owing to the huge number of bicycle messenger/delivery people rocketing about at the time. Actor Kevin Bacon even starred in a movie (*Quicksilver*, 1986) about a whiz kid stock trader at the San Francisco stock exchange who loses everything in a bad deal, becomes disillusioned and embarks on a new, more personally satisfying career as a bicycle messenger (remember folks, this is fiction).

But then the Powers that Be decided that faxed documents could be signed and re-faxed and still be legally binding, and the number of bicycle messengers plummeted.

Fax continued to grow in popularity throughout the 1990s, then faced the challenge of the Internet. The T.37 standard was devised, which specifies how a fax image (basically a TIFF format image) can be encapsulated in an email via a store-and-forward process. Fax users tend to expect faxes to move in real time, however, and so the T.38 fax relay protocol was deployed in 1998 that recreates the "feel" of the old Group 3 fax standard on the PSTN.

Early masters of fax plug-in boards and software for PCs included GammaLink (which became part of Dialogic) and Brooktrout, which became Cantata (http://www.cantata.com).

The fax market's growth will accelerate. Why? The short answer is IP.

Peter Vescuso, Vice President of Marketing at Cantata (news - alert) says, "Fax is an essential vehicle for business communication. That hasn't changed in years. The fax business continues to grow. Pete Davidson, the fax industry analyst who heads up Davidson Consulting, projects that the fax market's growth will accelerate. Why? The short answer is IP. Here at Cantata, we have both hardware and software for Fax-over-IP [FoIP]. In addition to the board products that we continue to sell, we also offer their software equivalents - host processing versions of the board-level products. The reason for that is standard Intel servers have been tracking Moore's Law and have gotten so powerful that you can run the kind of fax functions on the host CPU that you traditionally would run on a dedicated fax board."

"The transition to IP is partly responsible for helping to accelerate the growth of fax because it enables fax to become more integrated with many standard business processes," says Vescuso. "At the same time there's a growing adoption of productivity-enhancing multifunction peripherals [MFPs], and most of them are integrated with fax server technology. They're a spearhead into the core infrastructure, a kind of a 'door opener' in places where perhaps you didn't have fax servers before. Now with an MFP on the premises, it's natural for the company to connect it to a fax server."

"Regulatory issues are also driving the adoption of new technologies for compliance, and that ranges from certainly the 2002 Sarbanes-Oxley Act to the 1996 HIPPA [Health Insurance Portability and Accountability Act] which is the privacy act relating to the health insurance industry," says Vescuso. "In Europe there's a regulation called

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By Richard "Zippy" Grigonis

Basel II, the second of the Basel Accords, which are recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision relating to financial risk and exposure. All of these compliance regulations are driving investments in information technology to help organizations actually achieve compliance."

Cantata's Director of Product Management, Jeff Sieloff, says, "As for Sarbanes-Oxley, our surveys indicate that in the case of SMBs [Small to Medium-sized Businesses], 80 to 90 percent of the documents relating to an income statement - for which you might expect to maintain an audit trail - are faxed. So compliance and regulation are definitely propelling the adoption of fax technology."

"Essentially, fax isn't 'fax' anymore," says Sieloff. "Fax is simply a mechanism for secure electronic document delivery and archiving and retrieval. It's just becoming a more standard part of the corporate infrastructure."

"And, thanks to modern technology, fax has become more versatile," says Sieloff. "For a long time now many of the fax server companies such as Biscom, Captaris and Omtool have provided integration with corporate email systems such as Microsoft Exchange, so that when you fax a document it really doesn't go to a fax machine anymore. It just goes through the server and it arrives in your inbox. That's really what's driven the growth of the intelligent fax and fax server market for quite a while now, though of course the other growth drivers have kicked in too."

At FaxBack (http://www.faxback.com), (news - alert) a company known for its NET SatisFAXtion fax server software that automates inbound and outbound fax traffic, Co-Founder and CTO Mike Olisvewski says, "Fax is actually an interesting industry to be in right now. It went through a period when everyone was saying that 'fax is dead'. But that's not true. Of course, as corporate phone systems move to VoIP, the fax machine doesn't migrate from TDM to IP nearly as smoothly. The number one problem cited by the various VoIP service providers is that the barrier to keeping customers happy, once you've gotten them, is keeping their fax machines working correctly. That scenario has opened up some really large opportunities for a number of companies such as FaxBack that are savvy enough in the fax space and well-versed in the technology and protocols, to come up with some unique and innovative solutions for the problems that beset the VoIP market."

"From my perspective, all of the fax rules have to be reinvented because of VoIP," says Olisvewski. "It's really breathing a lot of new life into the business. Just in terms of fax in general, there has been absolutely no decrease in fax machine use, nor has there been a decrease in overall fax traffic. There certainly has been a change in the sense that fax machines continue to get cheaper and less 'sexy'. But you can't find a single business that doesn't have one or more fax machines or doesn't receive important documents via fax. So fax is a huge thorn in the side of the VoIP industry, which doesn't consider it to be sexy or anything that they even want to have anything to do with. Still, without doing fax correctly in an IP environment, the VoIP guys will be in a heap of trouble when trying to convince their customers to convert to IP."

"There are some quite serious problems that we at FaxBack view as great opportunities," says Olisvewski. "First of all, there's HIPPA and Sarbanes-Oxley compliance. If you move your business phones to VoIP there's no big deal. But if you move your fax machine over suddenly you discover that it's illegal to use it over the open Internet, because you're not using an encrypted pipe end-to-end, and so that's not considered to be a secured document transmission. Therefore, it's not legal for any of the compliance-based companies to move to VoIP and use their fax machines. That's why at FaxBack we've developed a solu-

tion that allows your fax machine to communicate with your VoIP service provider in a fully secure connection so that it maintains your legal compliance. That's the kind of thing nobody talks about until they realize that they're in an illegal situation and they have an immediate crisis that they need to solve. Compliance is a big and important thing in this market."

The Travails of T.38

FaxBack's Olisvewski continues: "Another thing that people hear a lot about but don't seem to know what to do about, is the fact that the ITU-T standard G.711 protocol for audio companding in telephony is actually a very bad protocol with which to transmit fax. You really need to use T.38. However, VoIP carriers have a 'denial mentality' going on with respect to this. The majority of the VoIP carriers say, 'Oh, I'm sending thousands of faxes every day using G.711 and it just works fine'. Well, it doesn't. It works about 85 percent of the time, maybe. And if you look further at the statistics, you soon realize that you can send up to a 10 page fax, and then many people at that point experience a failure of the fax transmission. And when you talk about a 100-page fax, forget it, no one has ever seen one ever transmitted in its entirety using G.711, in any environment."

"The VoIP carriers have had to completely redefine how they do fax," says Olisvewski. "They got into trouble because they adopted media gateways not able to do T.38 well, so therefore they can't just toss an immediate solution into their existing environment. Of course, companies such as AudioCodes and Cisco have done a very good job at implementing the T.38 protocol. But the vast majority of everybody else doesn't have anything that works. Their products have a configuration check box for T.38, but it doesn't even function. Talk to anyone working on the software side of T.38 and they'll tell you that there are not very many gateways that function well or at all. For example, companies owning Lucent equipment are at the top of our sales list, since they tend to have problems sending faxes reliably using T.38."

"For us, those exact problems are a real goldmine," says Olisvewski. "We've forged a really great partnership with AudioCodes. They've got a superior product line in terms of being able to go from a couple of analog ports up to a complete OC-3. They're very competitively priced. So we say to VoIP providers, 'Hey, you don't have a media gateway that works with T.38 today, but we can put together a solution for you that does work well'. The VoIP providers have had just enough problems with fax to realize that they have to do something, and they realize that we at FaxBack have an extraordinarily good solution that works up to an OC-3 bandwidth level and so it truly fits into the carrier market very well."

"Finally, what we've done - and this has surprised some people - is to address bandwidth concerns," says Olisvewski. "T.38 as a protocol is a bit of a bandwidth hog. When you look at a typical small business environment, you see a DSL or T-1 connection to the Internet. These businesses try to push all of their VoIP communications through that sized pipe, along with their web traffic and everything else. When you do T.38 transmission through a pipe like that, you discover that a single fax machine consumes three or four phone calls' worth of bandwidth. So we at FaxBack have modified our compliance solution to solve the bandwidth and latency issues of T.38. Our product is called the NET SatisFAXtion Port Server. It's a carrier-class fax solution that connects fax clients at the premise over the Internet via HTTPS into the VoIP service provider, and then it does SIP T.38 out the back end to the media gateway. In this way you get a totally secure, low latency, Internet-friendly, firewall-friendly way to get fax traffic out of the customer's premise and into the VoIP service provider, and out to a media gateway that can now reliably deliver fax. We're happily able to say that we're not having a lot of trouble selling this solution."

Media Transmogrification

One interesting concept in modern IP communications is that the underlying information in any media is important, not whatever form the information takes. Thus, in a world where voicemail can be converted into an email, so can a fax.

Cbeyond (http://www.cbeyond.com) (news - alert) is known for being able to deliver to small business a whole integrated IP-centric package of local and long distance telephony services, T-1 Internet access and Internet-based applications for about the same price that small businesses typically pay for local and long distance phone service.

Cbeyond's Brent Cobb, Vice President and General Manager of Product Management, Mobile, says, "We offer a full-service communications and software bundle. We target the very small business segment: 5 to 30 employees. That segment is generally the last in the food chain to get hold of advanced technology. That's why we've brought IP-based solutions to them, often as fast as consumers, enterprises or medium-sized businesses can obtain them. We've allowed these small businesses to partake in the IP movement."

"One thing we believe that's true across all verticals is that the customer's processes do not change overnight," says Cobb. "When email first appeared, people were certain that the paper industry would collapse. If anything, people now print more documents today than they did before because there's just more information coming around. The same type of situation has occurred in the fax world where everyone's predicting its slow death. But we find that the requirement for signatures on documents and just the general procedure of taking a document and faxing it to someone is still very viable. That's why we at Cbeyond launched our Fax to Email service, where we take inbound fax calls to our softswitch and

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then serve those over to a fax-to-email server; that then takes the fax call and converts the fax into a TIFF file encapsulated in an email and sends it to the customer's inbox. Everything needed to manage your Fax to Email number is located at CbeyondOnline, our web-based account management tool. Over the past 18 months it has become immensely popular."

"People such as real estate agents and attorneys need advanced fax capabilities because faxes are a part of their everyday lives," says Cobb. "Another thing we've done as an IP based company is to extend faxing and/or the IP based components of it to mobile solutions. Indeed, our customers can buy from Cbeyond today a bundle of services that includes broadband, Internet, T-1, long distance, local service, fax-to-email, secure backup, more than 30 applications in all. Mobile is one of the big services customers have wanted from us, and the BlackBerry is something that we offer and support for our customers today. Since we can convert faxes to emails, our BlackBerry customers can receive these faxes on their devices and read them in email form - and respond to them electronically via email."

"So, we've not only brought fax to email but we've taken it to those individuals wherever they are. Most recently we've added a laptop card solution to our customer base, using the EVDO Revision A nationwide wireless broadband capability, which gives users increased mobility."

Have You Faxed Today?

Fax remains a vital, integral part of business, even in an IP communications environment where a fax may end up as an email or voicemail (or *vice versa*). However, corporations should be wary during the transition to IP, making sure along the way that they have sufficient bandwidth and that their equipment and VoIP provider can handle modern implementations of the T.38 protocol. IT

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

Inter-Tel's Unified Communications Platforms

Unified communications (UC) is a descendant of IP communications, computer telephony and the "convergence" movement to eliminate "siloed" applications such as email, instant messaging, wireless, VoIP and conferencing. UC integrates the workings of not just corporate mobile, voice and data systems, but of people, communications and business processes, thus enhancing productivity, slashing costs and boosting customer satisfaction.

One renowned vendor in the area of unified communications is Inter-Tel, Incorporated (news - alert) (http://www.inter-tel.com), a global provider of communications products and applications, as well as managed services that center on voice and data network design, traffic provisioning, custom application development, and financial solutions.

Aron Aicard, a product manager at Inter-Tel, says, "Our two unified communications platforms are the Inter-Tel Unified Communicator® and Inter-Tel Personal Communicator."

"The Inter-Tel Unified Communicator was our first UC product to go to market," says Aicard, "launched about four years ago with our Inter-Tel AXXESS platform and later offered with the Inter-Tel® 5000. Our Unified Communicator's design focuses on the 'SIP-ability' of communications that rely on SIP (Session Initiation Protocol) as opposed to the mere consolidation of stored messages. Many early 'foundational' UC products simply sent voice, fax and email into a single email inbox. We took a different course, concentrating instead on the pieces that bring modern real-time communications together, and unifying them. That process begins with a good presence engine that ties users and devices together seamlessly and extends presence throughout the organization to various users. Indeed, we started with a 'pervasive presence' model that ultimately helped us bring personalized advanced call routing capabilities down to the user level so they could control it and thus configure the intelligent automatic handling of calls. The concept also feeds into other applications such as contact management, conferencing and IM within the enterprise."

"The Inter-Tel Unified Communicator platform also encompasses advanced CTI [Computer Telephony Integration] technology," says Aicard, "so that you have complete control over all of your organization's desk phones. No additional CTI-type of application for call control is necessary, which gives you a lot of flexibility. The system delivers consistency and performance across a wide range of scenarios. The platform puts buyers in control of how much they spend and what architectural choices they make."

"Moreover, the system's tools are pervasive - they don't 'care' whether they're linked to a digital phone at the desk or an IP or wireless set. The system could just as easily route phones calls outside of the office; to your cell phone, for example, or your home phone, and bring it back again to the common voice mailbox of the corporate phone system, so that traditional unified messaging in a unified inbox can still occur."

"Recently, we incorporated Inter-Tel Audio and Web Conferencing into the platform," says Aicard. "So now, in addition to the real-time control, advanced routing, contacts and phone control, there's also a unified desk-to-desk web collaboration experience. Essentially, we've brought to our users a single application that delivers what many people still spend for separate products. These include desk-to-desk videoconferencing, web collaboration and document sharing, whiteboarding, text messaging, user polling, formal and informal conferences and meetings, full multimedia call recording and session management/document management. All of these are in one consolidated product that focuses on bringing the best of presence, real-time communication and messaging to our users. That's where we stand today, with something that's very rich and very compelling."

"Our approach to mobility is that our applications don't care about the device or network, and therefore we can route communications intelligently across various networks and devices in a common manner," says Aicard. "Regardless of where your PCs and notebooks are, and regardless of which PCs you're logged into, you have the same experience. You just need a common web browser running somewhere and your main applications will be available to you. We deliver pervasive worldwide accessibility without the burden of complicated VPN or other network deployments. Additionally, we're bringing mobility down to the handset and PDA level."

"We generally target Unified Communicator to SMB buyers," Aicard observes. "Under our managed service portfolio, businesses can roll everything into a manageable, monthly payment, taking the CAPEX burden out of the equa-

tion so that small businesses don't confront a barrier of entry. Indeed, we often see a high adoption rate of advanced applications in SMBs, simply because SMBs use these tools to get whatever edge over their competitors that they can."

"Our second UC solution is the Inter-Tel Personal Communicator," says Aicard. "It extends our Inter-Tel 7000 softswitch. Think of Personal Communicator as everything I've just discussed tied into a single standards-based softswitch and prepared and ready to integrate with the rest of the world in rapid fashion thanks to its standards-centric design. Imagine looking four-to-six years out, and think about what businesses will expect to run on this foundation. We're taking some of those concepts and making them real in an accelerated manner. When vendors introduce something new and innovative in the UC space, such as an advancement in conferencing or web collaboration, we'll be able to integrate it into our platform very rapidly and inexpensively. Thus, there's a win in three major categories: technology investment, functionality advancement, and cost of the solution."

"Moreover, the standards-based, open interface approach means that we can integrate with the business applications and back-end systems driving the organization," says Aicard. "CTOs today are aligning technology with their business processes. The best way for us to do that is to create a unified softswitch that delivers UC and still opens up, all in a unified manner, to the other systems, be they CRM apps, ERPs, or back-end databases. It doesn't matter what key applications exist in the enterprise. There's clearly a need to tie real-time communications to those non-real-time databases and to the other real time non-communications systems. Unified communications becomes more valuable when it's tied to things people don't think of as communications tools, such as inventory management or database tools." IT

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

Indianapolis's Second Largest Accounting Firm Relies on Unified Communications to Enhance Client Service, Improve Efficiency

By Aron Aicard, Inter-Tel, Incorporated

With a staff exceeding 230 professionals, Katz, Sapper & Miller is the second largest accounting firm in Indianapolis. Katz, Sapper & Miller is highly regarded for both its tax and auditing practices, and specializes in serving clients within real estate, transportation, construction, manufacturing, health care and other industries.

One of the lynchpins of the company's success is its commitment to providing unparalleled service to its clients, who rely on the firm's expertise and counsel to expediently address any number of financial issues and concerns.

In the past, making sure that its accounting and auditing professionals were readily available to assist clients had been a challenge. Auditing team members would often spend weeks at a client site, with limited access to voice mail or email. And at its sprawling headquarters, team members typically did not have the visibility to see which of their colleagues were available to receive phone calls or answer questions, further delaying response time to customers.

To help remedy this situation and ultimately enhance customer service, Katz, Sapper & Miller reached out to Esco Communications, a certified Inter-Tel partner, to identify a solution that could help streamline communications.

"Our organization has built a strong reputation for providing our clients with highly available and responsive service," explains Greg Kirkland, director of information systems for Katz, Sapper & Miller. "With the size and pace of our firm, maintaining this high degree of service had been a challenge. We needed to find a tool that would facilitate communication both within our offices, as well as with the auditing staff that works at client sites."

After evaluating a number of solutions, Katz, Sapper & Miller selected Inter-Tel's Unified Communicator® to effectively manage its communications. Integrated with the firm's core communications system, Unified Communicator enables users to prioritize and route specific calls based on any number of criteria, including the identity of the caller, the nature of the call and the urgency in which the caller needs to be handled.

Using this tool, Katz, Sapper & Miller's staff can create individual settings to route incoming calls to any number of destinations, including desktop devices at both headquarters and remote sites, cell phones and PDAs and softphones. Employees can choose to route important client calls to a current location, while electing to send less time-sensitive calls to colleagues or voice mail, thereby expediently and appropriately handling each call.

Additionally, employees can change Unified Communicator's settings on the fly from any number of interfaces, including web browser and speech recognition applications, allowing greater flexibility on handling calls.

Unified Communicator's presence capability also provides users with the current status of co-workers, regardless of their physical location, improving efficiency by enabling employees to route calls to an available staff member who can handle a time-sensitive client call. Unified Communicator also provides ad hoc conferencing, allowing staff to pull together conference calls on the fly once the appropriate team members become available. In addition, Unified Communicator's call log feature, which creates a record of each incoming call, gives the firm visibility into the calling patterns of its clients and ensures that every incoming call is expediently addressed.

"Unified Communicator has been a great asset in improving the efficiency of our company," concludes Kirkland. "Its rich features and flexibility have been instrumental in our ability to streamline communications both internally and with our clients." IT

Developing New Applications for Network Operators with CommuniGate's Pronto!

By Richard "Zippy" Grigonis

CommuniGate Systems (http://www.communigate.com) of Mill Valley, California, is well known for their carrier-class Internet Communications software for broadband and mobile service providers, enterprises and OEM partners. Indeed, over 130 million subscribers (including 47 million voice subscribers) rely on CommuniGate's products.

One of CommuniGate's (news - alert) most exciting achievements of late is a new, extremely flexible, extensible interface client software called Pronto!, enabling network operators, service providers and even enterprises to develop Mobile Rich Media Internet communications

Jon Doyle, CommuniGate's Vice President of Business Development, says, "Today's Pronto! has a user interface with tabs linking to all of the applications you'd expect, such as messaging, Voice-over-IP, scheduling, RSS feeds, managing a website and a blog, pretty much all of the things we do in our daily lives on our PC. But if customers get bored and operators want new applications? We've enabled an ActionScript API where people can write any sort of plug-in and develop these applications to suit or have us help them. If a network operator or service provider needs to extend Pronto! and add some new functionality - for example, a shopping cart to buy MP3s like you do with iTunes - the operator can develop a shopping cart module and insert that into the Pronto! framework. Users logging in would now see their usual tabs and functionality plus the shopping cart tab for music and an offer to subscribe to it. That's why I like to describe Pronto! as probably the first example of a client application server on the market. Most of us are familiar with applications servers inside of a datacenter sitting on a server, but here we're talking about an application server that will be running in client software on a desktop, a mobile device or even in a set-top box or cable modem."

CommuniGate's remarkable Pronto! user interface gets its flexibility from the underlying technology used to create it, Adobe's Macromedia Flash-based Adobe® Flex™ 2. Pronto!, developed in Flex2 is a Rich Internet Application framework, running on any Flash9 player that delivers true convergence by integrating collaboration and messaging with Rich Media such as VoIP, IM and Presence for access by anyone, anywhere, anytime. Users can access all forms of Internet communications as well as all their stored data from business information to video and voicemail from any browser without installing any new software.

Pronto! connects to the CommuniGate Pro Internet Communications platform via the XIMSS API (XML Interface for Messaging, Scheduling, and Signaling), which permits rapid development of lightweight clients and interfaces that can call upon web and XML capabilities or skill sets. XIMSS enables Broadband and Mobile operators to quickly design user interfaces, build portals, interface with broadband modems, or link to external applications and services without the need for complicated protocols.

As Doyle says, "The value proposition behind this is that network operators want to deploy IMS-based applications and it seems it's been taking a long time for one to appear. Many operators boast about their new NGN infrastructure, but what the operators are looking for are very lightweight, flexible applications deployable in large quantity, to various types of subscribers, and we believe that the Pronto! framework is the best example of how to do that."

"Pronto! is written in Flex 2, a cross-

platform development environment based on Adobe Flash for creating Internet applications that run identically on all major browsers and operating systems," says Doyle. "The Pronto! API, or what a developer writes to, is called the ActionScript API. A very large developer community writes software in Flex today. For example, look at what MobiTV is doing with Flash; they're a company that's sending IPTV out to mobile handsets. Then there's The ZON Network from Verizon, an ecosystem that brings together Flash developers to deliver content and applications inside of the Verizon network. A third area that has been very strong has appeared in Japan with the KDDI and DoCoMo developer communities. They've produced many games over the past few years using Flash technology."

"Games are just one example," says Doyle, "Another is content, such as ring tones and MMS [Multimedia Messaging Service] movies.

"So, network operators running the Pronto! Flex framework can tap into these large developer communities," says Doyle. "It's similar to what happens with application servers on the server side, where you have three big developer communities working on things that run on application servers from BEA, IBM WebSphere and Oracle. And now we have a technology where people can tap into a client-side applications server and plug in different types of functions accessible by a user like you or I. That's important because carriers want to deliver specific things to users on the client side, via web delivery and they don't want it to matter whether the client is running on a desktop or a mobile handset. They simply want to put revenue-generating applications in our hands without having to endure the bothersome affair of installing things inside our home or business PCs. It's much easier to deliver applications through a web-based framework. They just snap into our Pronto! framework and run."

"Flash-based technologies are very compelling for various reasons," says Doyle, "mostly relating to security and especially portability. You can run a Flex application wherever there's a Flash player, and Flash just happens to be the most ubiquitous software delivery agent in the world today, with more than one billion Flash player installations worldwide. As a delivery mechanism, Flash reaches far more people than Microsoft can with its Office package or new Silverlight™ cross-browser, cross-platform plug-in. So, many developers are working on so-called Rich Internet Applications (RIAs) for the Flash/Flex 2 environment. Our Pronto! is basically an RIA that also has an API so that you can develop your own application and plug them in into Pronto!. We're essentially shipping a foundation."

Aside from operators and service providers, a large enterprise with its own staff could even write site-specific applications for itself, such as things for workflow management or CRM extension, say address books or click-to-call actions.

To get an idea of what you can do with Pronto! and the CommuniGate Pro communications server, go get a free live account from CommuniGate Systems at http://www.TalktoIP.com. You can then send and receive email and manage media, all using the Pronto! interface. It's free, with no advertising, but that version's storage capacity is limited, at least for now.

"Even so, you can store your music there," says Doyle, "and eventually we'll expand the site to include video capabilities, telephony and many other interesting things." IT

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

Tap into Flash Application Content

by Jon Doyle, CommuniGate Systems

Many of the operators I speak with are seeking out the mystical "IMS Application" that will help drive new forms of revenues and pay for investments in their NGN technologies of years past. Delivery of Rich Media to mobile handsets and the desktop is very much a tangible and viable strategy today. Many of the operators in Japan, but also Verizon in the U.S. have embraced Flash & Flash Lite technology and developed communities where hundreds of games and other interesting content are available.

Most Mobile operators I talk with have a wide range of subscriber types in their network: consumers, business people, kids, grandparents, etc. They find it quite challenging to test or sample new applications. Our modular client framework provides the best solution on the market today to address these subscriber bases. We leverage Flash technology because of its widespread installed platform, the Flash Player. In fact, this is the most widely-deployed platform in the world, and is ideal for Rich Internet Applications (RIAs) such as our Pronto! framework. Why is this important for operators and IMS? With it, any set of applications can be "snapped" into our framework and quickly deployed on either wireline or mobile networks.

Let's look at some media, Flash Games for example. This type of content is very popular with consumer subscriber bases, and can drive not just use of the app itself, but also traffic on the network and storage. A simple shopping cart within the Pronto! framework takes care of the games' delivery, but leveraging the chat and communication tools within Pronto! drives usage models, and storage of the games in the libraries drives stickiness to the operator's network. Our framework can handle not only any sort of simple content like Music, or Video, but even more interesting applications like dating services that interact with the core Pronto! services, or sophisticated operator location-based services. All of these applications will now have a very short time-to-market thanks to the flexible nature of the Pronto! framework.

There are many large communities already in the market with applications and content based on Flash. Linkage to the operator's network and subscriber base demands technology that is flexible and can scale to changing needs. CommuniGate Pro is the most powerful communications platform with the right client technology for operators that have adopted convergence of network topologies. Sign up for a free account at http://www.TalktoIP.com and see how delivery of content and Rich Media can be used in your business to build out a next-generation subscriber base community today.

Today's IMS Scene

IMS, the IP Multimedia Subsystem, is perhaps the most ambitious movement in telecom since the transition to digital signaling in the 1970s and 80s. Its goal is to overhaul the world's wireless and wireline networks, placing them atop a global, common service architecture that will allow service providers to quickly devise and deploy many new on-demand, IP multimedia and mobile services. Single platforms will be able to combine multiple services such as VoIP, IP Centrex, Fixed-Mobile, Hosted PBX and SMS.

The upcoming IMS Forum Plugfest III for Applications and Services will be held October 15-19, 2007, at the University of New Hampshire's InterOperability Lab (UNH-IOL) (http://www.iol.unh.edu) in Durham, New Hampshire, a huge 32,000-square-foot testing center founded in 1988. These interoperability and certification events as well as early deployments indicate that IMS, though slow to start, will be an inevitable single service architecture for network operators worldwide.

At the well-known telecom hardware and software vendor Dialogic (news - alert) (http://www.dialogic.com), Jim Machi, VP, Product Management and Planning, says, "Many people overuse the term IMS. IMS is more than just the original 3GPP wireless spec and all that. To me, the industry looks at IMS as an IP infrastructure framework in the public network area, although some people are now starting to talk about how IMS could affect the enterprise. The movement to an IP network is happening. Whether you call that IMS or 'NGN plus' doesn't matter. What does matter is that a change is occurring. Customers ask us about it and we see it in the products we're selling. Therefore, we do 'believe in' IMS. It will probably follow what I call a typical 'telephony adoption curve', which will be years in length. We're starting to make our products IMS capable today so that people can migrate to IMS at their own pace. You can place our components in an IMS network today - although there are few such networks at the moment - or you can place them in an IP network and have an IP media server connected to the network.

IMS, though slow to start, will be an inevitable single service architecture for network operators worldwide.

Dialogic's Director of Marketing, Bill Byant, says, "I just think IMS is on a traditional deployment curve, the same kind that you saw with VoIP itself. Like VoIP, IMS will take some time, longer than most of us might prefer, but it will eventually be ubiquitous."

Security in an IMS Environment

Amusingly, many people have been so concerned over IMS testing and adoption rates, they've ignored more potentially serious matters such as security.

For example, at Apertio (news - alert) (http://www.apertio.com), Bill Bondy, CTO Americas, says that the ability to consolidate information into a single database helps security in an IMS network, particularly when one is figuring out ways to federate or share information among a particular set of organizations.

"Apertio was formed about five years ago," says Bondy, "based on some technology created in the U.K. to consolidate subscriber data. Our whole heritage is built on building what we call a single logical database for any telecom core network, such as wireless, cable, fixed-line, you name it. The whole idea is to simplify core networks that currently are saddled with many different database silos and systems implementing subscriber data, services and, in a parallel line of activity, unify different security implementations to protect that data and those services. We take these networks and greatly simplify them by consolidating data into a single logical database which can scale without any bounds and can grow as big as a customer needs in terms of storage and number of transactions supported. You no longer have to worry about various data locations and all of the intricacies and security surrounding that. On top of that database, we offer a number of applications, either produced by Apertio, such as an HSS [Home Subscriber Server], or partner apps from the likes of BEA, Motorola and Siemens."

Bondy continues: "We see from our customers, including a large U.S. CDMA operator who unfortunately I can't name at the moment, that they're looking to consolidate much of their core network data, as well as making this data work for IMS. This particular vendor is doing a lot of work with the cable companies and others on an IMS front. Specifically in terms of security for IMS, one of the issues they have is how to create a synergistic security model around not only their independent groups within the company, but with the partners that will be sharing this IMS data to provide services that are fixed-mobile convergent in nature or multiple network-spanning types of services. One of the big areas with which they're concerned is 'identity federation' as well as 'data federation', and all of the security aspects of those."

"We see that there's a lot of work going on in the standards groups to identify ways

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By Richard "Zippy" Grigonis

of securing this data," says Bondy, "and allowing it to be reused among different partners and network components - you see it in the Liberty Alliance as well as the people involved with the Security Assertion Markup Language [SAML], an XML-based framework for communicating user authentication, entitlement, and attribute information developed by the Security Services Technical Committee of the Organization for the Advancement of Structured Information Standards [OASIS].

"Our U.S. CDMA customer wants to be able to share IMS subscriber profile data so that they can enable fixed-mobile convergence [FMC]," says Bondy. "You may ask how they go about doing that. They could use SAML or independent provider security mechanisms on these data systems to allow the sharing of security and identity credentials. One reason they chose our system is that they were swamped with having 50 or even 100 or 200 different databases in the networks that had to be coordinated using SAML or the Liberty Alliance and interoperate with these protocols to provide identity federation and data sharing. Instead of doing something 100 times they just want to do it once in each core network. That's where our solution comes into the picture."

Charge It Up!

As with security, billing, bookkeeping and policy-type functions also take on a more exacting character in an IMS environment. At Openet (news - alert) (http://www.openet.com), Vice President of Global Marketing Mike Manzo says, "IMS to us represents an evolution, not a revolution. Part of the reason we believe IMS is real is that we see the first adoption of infrastructure occurring in the space in which we operate, and that is around the charging applications. Openet builds an array of event processing and transaction management software-based solutions for operators. We have positioned ourselves as a provider of transactional intelligent solutions, meaning that we build capabilities that help operators gather or extract increased value from the activity on their network. IMS is a key trend for us, because, whereas it is not the 'cause' it is perhaps the 'end game' relating to the volume and complexity of transactions on service provider networks resulting from the deployment of new services."

"Certain services that operators want to deploy will be best served by deploying them with an IMS architecture," says Manzo. "Openet's play in that space is to provide both offline and online charging solutions as well as policy enforcement and policy decision solutions. Essentially, with these services being deployed, there is a certain volume of transactions that need to get processed in session, whether it's a balance reservation, authentication, or content filtering rule. There's a myriad of different decision that need to be made and enforced by the network's device that's enabling the service. Post-service, there are events produced on the network that need to be aggregated, filtered, enriched and served to downstream business systems so that business objectives can be achieved. That can be anything from billing to complying with lawful intercept regulations to detecting revenue leakage. So, we're providing a suite of IMS-compliant solutions that will enable operators to do all of these things."

"Openet has an IMS deployment today for offline charging and we continue to see requests emanate from tier-1 operators as they gather information or are looking for specific bids for online charging applications," says Manzo. "It's clear that they won't immediately move all of their existing services to an IMS

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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.

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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.

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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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Free "Service Provider Shootout" Panel Discussion

Always among the most popular events at the conference, this free general session gives you the chance to hear many views and opinions about the best choices for you and your organization.

Free Spectacular Keynotes

Top executives from 8x8, Inc., AT&T, Dialogic, Digium, Interactive Intelligence, Inter-Tel.

This year's lineup of keynotes includes top executives from equipment manufacturers and service providers. Learn from them how IP communications solutions benefit you - whether you are using them or selling them.

Free Educational Seminars —

- Reseller Solutions Day Workshop
- Ingate SIP Trunking Workshop
- Voice Peering Fabric Workshop
- Disaster Preparedness Workshop
- Vocalocity Hosted VoIP Reseller Workshop

These **FREE** seminars help resellers, enterprises and service providers sort through the many choices of equipment and service before them — whether finding the right solution for a client or for their own network.

Service Providers, Enterprises, SMBs, Government Agencies, Resellers, Developers and Manufacturers Will Learn from a Diverse, Visionary Keynote Lineup

Mark Spencer
President
Digium, Inc.

digium

Norman Stout
Chief Executive Officer
Inter-Tel, Incorporated

INTER-TEL

Bryan Martin
Chairman & CEO
8x8, Inc.

8x8 INC.

Nick Jensen
President and
Chief Executive Officer
Dialogic Corporation

Dialogic

Donald E. Brown, M.D.
Chief Executive Officer
Interactive Intelligence

INTERACTIVE INTELLIGENCE

Susan A. Johnson
Senior Vice President,
Business Development

at&t

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

It's up to you to make sure your deployment is smooth with minimal disruption. It's also your responsibility to ensure your new system meets all organizational objectives. The days you spend in the conference sessions and in the exhibit hall at INTERNET TELEPHONY Conference & EXPO will supply the answers you need to recommend the perfect system for your situation.

Developers

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.

Attend the IP Communications event delivering a 1st Class conference education, endless networking opportunities, & visionary keynotes with diverse viewpoints.

1. Commercial-Free Sessions

To maximize your ROI as an attendee, presenters in sessions are forbidden from delivering company pitches. You get a complete education taught in an unbiased manner. Violators are not invited back to speak at future events.

2. Most Knowledgeable Speakers

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

This year's keynote lineup includes top executives from 8x8, Inc., AT&T, Dialogic, Digium, Interactive Intelligence, and Inter-Tel. Learn from them how today's IP communications solutions can benefit your company - whether you are using them or providing them to customers.

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.

8. Your Fee is Guaranteed

If you do not feel the sessions you attend made you better prepared to tackle your IP communications project than when you arrived, stop by the registration counter at the show and receive a free pass for any future INTERNET TELEPHONY conference. (No requests will be honored after the conference ends.)

9. Convenient, Accessible Location

The convention center is conveniently located in Los Angeles, California, easily accessible from virtually any airport in the world.

10. FREE Exhibit Hall Pass

Register online any time to save the $50 onsite fee.

Find the Solutions You Need

Come Inspect Hundreds of Cutting-Edge IP-based Voice, Video and Data Products & Services • Over 200 Exhibitors Expected

- APIs
- Application Servers
- ATAs
- ATM
- Billing/OSS Solutions
- Cable Telephony Solutions
- Carrier Class Gateways
- Compression Algorithms
- CTI
- DSP Chips & Boards
- Echo Cancellation
- Edge Access Devices
- Embedded Software Tools
- Fax Boards
- Firewalls
- Fixed/Mobile Convergence
- H.323
- Hosted VoIP
- IMS
- Industrial Computers
- Interconnection Facilities
- IP-based ACDs
- IP Centrex Solutions
- IP Conferencing
- IP Contact Center Solutions
- IP Fax Solutions
- IP PBXs
- IP Phones
- IP Telephony Headsets
- IPTV Solutions
- IP Video Conferencing
- LAN-based Telephony
- Mashups
- Media Servers
- Open Source
- Presence-based Applications
- Programmable Switches
- Protocol Stack
- QoS Network Monitoring
- RAS/Modem Chips
- Routers
- Session Border Controllers
- SIP Software
- SIP Trunking
- SMB VoIP Solutions
- SOA
- Softswitches
- SOHO Solutions
- Speech Recognition/VXML/SALT
- 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

Executive Showcases in Presentation Theatre on Exhibit Floor

New for 2007:

Hear unique perspectives on specific applications of converged voice, video, data services.

Alan Percy
Director of Business Development
AudioCodes

AudioCodes

Chuck Rutledge
VP of Marketing
Quintum Technologies

QUINTUM TECHNOLOGIES, INC.

Mansour Salame
Chairman of the Board and CEO
Contactual, Inc.

Contactual

Todd Landry
Senior Vice President
Sphere Communications

Sphere

Marisa S. Viveros
Dir., Global Leader for
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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FJ Cruiser Drawing - Tuesday, September 11, 6:00pm, at the conclusion of Exhibit Hall hours.

You Must Visit the Exhibit Hall Both Days. Find IP Communications Solutions and You Could Win A Brand New 'Tricked Out' Toyota FJ Cruiser.

1. Pick up your entry card at the registration counter when you arrive. To qualify you must attend the exhibit hall both days.
2. Visit each booth listed on the card, review their offerings, and receive a stamp from each booth.
3. Collect all stamps, then drop your completed card into the entry bin in the exhibit hall.
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

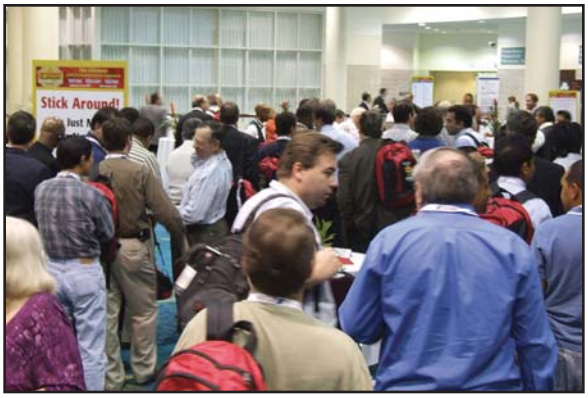
We hear a lot about the advent of fixed/mobile convergence services from the enterprise or consumer side, specifically the benefits to the enterprise and how FMC stands to make enterprise communications more efficient for all. But what about the service providers? Where do they stand on this issue? And 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
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CosmoCom	Manager
CosmoCom	VP & CIO
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CRG West	Managing Director
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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
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UTStarcom Inc.	Senior Manager
VoEX	Director of Product Management
VoiceObjects	CTO
VoIP Logic	CEO
Xconnect	CEO

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- ☐ 22. PTT
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- ☐ 9. Manufacturer
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architecture. Instead, they want to launch one or two discrete services on an IMS architecture, get those to market, and then slowly evolve the rest of their network over time."

Joe Hogan, Openet's Founder and CTO, says, "Operators are looking at two things: They've got their strategic IMS core build-out for which they're selecting online and offline charging systems. Interfaces to the IMS core equipment for charging are mandatory, therefore to build an IMS network that supports service delivery you need a charging system in place. It won't work without one. Therefore, this is part of the First Phase package that they purchase. Secondly, operators know that, between now and the time they will have a full IMS network - which is many years from now - they're looking for a charging system having the architectural longevity to bring them to IMS and be useful when IMS arrives, as well as deal with the challenges of today and several quarters from now, all while they slowly increase the number of services delivered over IMS from a small proportion to ultimately the majority of their services."

"As part of that infrastructural revival, operators are using the IMS standards set as a good place to capture the latest thinking on what charging systems should look like and what architectures they should have," says Hogan. "This is not only good for IMS but also serves the challenges of today and tomorrow. The operator RFPs are quite interesting. They specify IMS compliance, but there's a lot of general charging features that are also required. The tier-1 operators say they need an IMS-compliant state-of-the-art charging system to deal with services they're rolling out over the next few years. If the first couple of services they roll out are successful and there's no loss of faith in IMS, then they'll continue with the rollout of more services on IMS. As those rollouts gain pace, the operators won't have to change their charging platforms, since they will already be IMS-compliant systems."

Fulfillment, IMS Style

Joe Frost, Vice President of Marketing at JacobsRimell (news - alert) (http://www.jacobsrimell.com), says, "We see that many operators and vendors are still engaged in lab trials, verifying the IMS-based interoperability of their products. Most of these guys have recognized that there's a key factor involved in getting this stuff to work. It really hinges on being able to get a handle on better con-

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trol and better visibility of the operational data."

"Our claim to fame is that we're a software company that delivers OSS solutions to tier-1 operators," says Frost. "We do it differently from everyone else in that the traditional way of doing OSS is by what we call a network-centric point of view. One normally looks from the network inventory upwards and then does the provisioning and activation from there. But we've always approached this from the opposite end, from the subscriber user identity point of view. Our platform centers on an information model where we model the identity, the context, etc., of the user and then we apply products and services to that individual identity. This allows the operators to build a subscriber information model allowing them better personalization and increased efficiency of their operations because they are working essentially on a live data model of the operational data sitting in the network and BSS/OSS systems."

Frost elaborates: "When you look at the value proposition of IMS - whether you're a telco or wireless operator or an MSO cable operator - at the highest level it's really all about adding intelligence to the network so that you can deliver a wider range of products and services to an equally wide range of user devices, across a wide range of access technologies. What we're talking about here, of course, is real convergence, convergence the way it should have been done in the first place."

David Jacobs, CTO and Co-Founder of JacobsRimell, says, "We're coming out of the other side of all of the interoperability trials, and more people are beginning to realize that these IMS elements really do work and can now start to be applied. But having gone through those standards body type of interoperability workshops, people also recognize that the full operationalization of IMS and capabilities is a bit off. That's where we come into play."

"For example, you're perhaps aware that the Home Subscriber Server [HSS], the thing that holds data dealing with entitling any particular device to use the network and gain access to specific applications, also holds data about the individual that's using that device and whether or not they can reach an application and make use of it. People who are trying to create new applications that can be delivered to end users now realize that an HSS has its limitations. An HSS doesn't necessarily have the 'richness of data' that's needed, and it doesn't necessarily have the right performance in terms of being able to access large lists of information quickly, such as if you were attempting to implement a group-type service and you wanted to be able to pull back a whole set of information from the HSS. The current HSS interfaces just don't support that kind of scenario; they force you to retrieve just one record at a time. If you try to pull up 100 records of a group list at one time, it doesn't work. People are already trying to think through how to get around these limitations."

"Our whole approach to fulfillment starts with examining the key information and we then devise appropriate processes and capabilities," says Jacobs. "Some of that information may be an abstraction from the real underlying data of the service-delivering application. But fundamentally, it's about having those processes that work on that data and then being able to perform various other processes that synchronize that data with the network or with the service-delivering applications. What that in turn allows you to do is to insert all of the good practices around abstraction, such that you can create reusable processes; that in turn allows you to be able to separate the changes in the network from the processes or portals used by end users. It gives you a 'layer of indirection' that makes everything far more operable."

"The other real benefit this approach gives you is that it allows you to work with 'rich' data such that if you've got an information set that's quite rich you can choose which subset of that information to push down to different network elements, such as an HSS or whatever, and suddenly the whole system becomes a lot more usable," says Jacobs.

IMS may be on a bumpy road, but in the great telecom road rally, it's still on course. Companies such as those mentioned in this article will help "fill in the gaps" and help the world's network operators and service providers adopt IMS and make it a success. IT

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

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Cantata IMG 1010

Cantata Technology's IMG (Integrated Media Gateway) 1010 is a unique integrated media and signaling gateway that provides "any-to-any" voice network connectivity. What exactly does "any-to-any" mean? Well, it means you connect IP-to-IP, TDM-to-IP, and TDM-to-TDM as well as just about any IP or TDM protocol you can think of - SIP, H.323, SS7, T1/E1, DS3, PRI, and many more. The IMG 1010 supports both wireline and wireless codecs so you can also transcode from IP & TDM networks to wireless/cellular networks, including AMR, iLBC, G.711, G.723 (5.8k or 6.3k), and G.729. This combined capability gives service providers flexibility to introduce converged services across fixed and mobile networks worldwide. Besides supporting just about any VoIP or TDM protocol, Cantata has done an excellent job making the IMG "international ready" by enabling the product to be customized to handle each country's protocol variants using their patented Programmable Protocol Language (PPL). Customers can use PPL to handle protocol variants or they can purchase them from Cantata. For instance, Cantata currently has over 120 SS7 variants in their library available for purchase.

The IMG sports a compact 1U package and an easy-to-use centralized Java-based GUI for administration of all IMG 1010 units (See Figure 1). By integrating SS7 signaling, VoIP, and routing into a single 1U chassis you can essentially replace three separate network devices: the SS7 Signaling Server, the VoIP Trunking Gateway, and the IP-to-IP Transcoder with a single IMG 1010. TMC Labs checked out the IMG 1010 and came away with an appreciation for the hardware and software architecture of the IMG 1010. Perhaps it should have come as no surprise since EXCEL Switching and Brooktrout Technology, leaders in TDM and IP switching & routing, combined forces to form Cantata Technology.

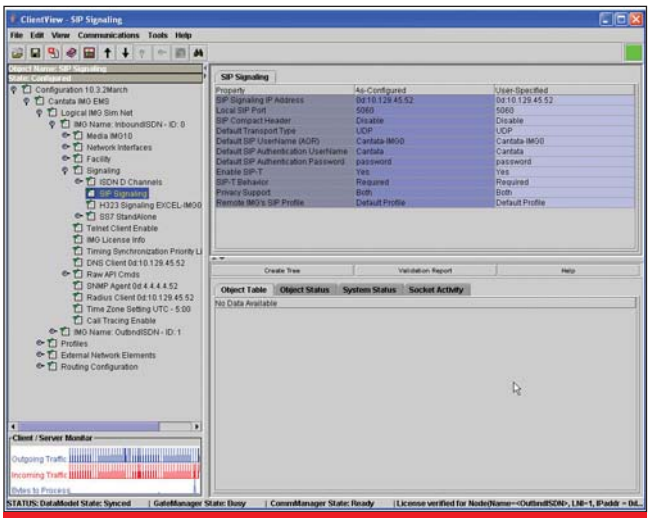

Figure 1: Main GUI - span configuration.

Examining the IMG 1010 we found that it has 5 temperature sensors and 4 cooling fans in front. The RPMs on the fans vary depending on the temperature and sensors monitor the RPMs and can send alerts. The architecture features redundant network ports, but only one is active at a time. If a network switch fails it will automatically failover. Cantata has built the IMG for maximum uptime with a field-replaceable tray and docking station that lets you quickly swap out a motherboard to repair a faulty CPU, memory, cooling fans, Ethernet circuits, DSPs, or other faulty compo-

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nents. We were able to pop out one of the cards and replace it in just a few minutes. If a network connection goes down, any concurrent VoIP calls are automatically routed to the backup network. In addition the IMG separates transport, signaling, and OAM&P to reduce susceptibility to intruders and to ensure better system performance. Cantata claims a NEBS 3 carrier-class design with a 99.999% uptime for the IMG 1010.

The IMG supports up to 768 TDM channels (24 E1s, 32 T1s or 1 DS3) and 1024 VoIP channels on a single chassis. It can also perform up to 512 simultaneous IP-to-IP transcoding sessions. The IMG allows customers to start as low as 96 channels allowing customers to "grow" into the IMG's capabilities simply by purchasing more licenses. With the GateControl Element Management System (GC EMS) you can manage up to 16 IMG 1010s. The GC EMS and IMG 1010 were designed to work in conjunction with one another to enable centralized management of all your IMG 1010s. It is TMC Labs' understanding that Cisco and AudioCodes gateways must be configured box-by-box - there is no centralized admin, which gives Cantata a competitive advantage in large-scale deployments where TCO over the long haul is very important.

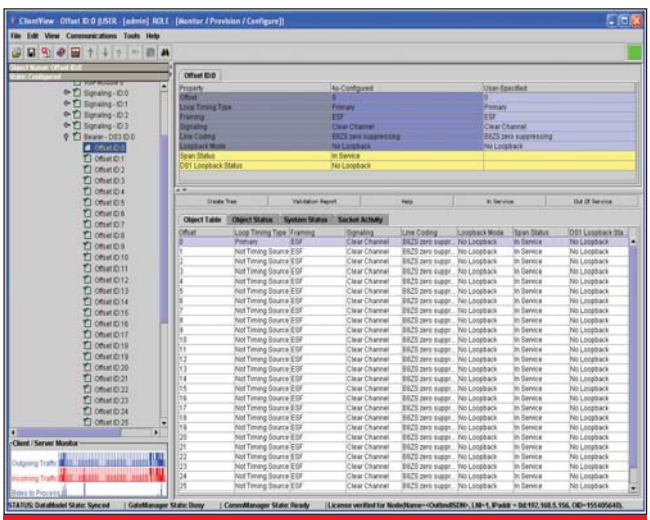

Figure 2: Configuring SIP screen.

Another competitive advantage for Cantata is that their gateway includes SS7 capabilities. Most other solutions require a separate box. Not only is this an additional cost, but any time you route calls to another box, you're adding more latency. Any time you can do all your protocol conversions and transcoding via a single box, the lower any latency overhead you will have. In addition, the IMG 1010 can support up to four SS7 stacks simultaneously.

Some other useful features include the ability to add gain to the signaling, as well as a built-in reporting module. Cantata leverages the open-source Multi Router Traffic Grapher (MRTG), a popular reporting tool to monitor the traffic load on network-links. You can also export the data as CSV to use in your own reporting tool as well.

Cantata added some new features to the IMG, including ENUM support. The IMG 1010 can now translate phone numbers into SIP addresses and lets SIP users call each other directly without a PSTN service, for faster connection times and lower phone charges (See Figure 2).

Another nice feature is load balancing, a feature not available in many competitive products. The IMG 1010 works with load balancers to provide better distribution of SIP traffic for improved scalability and fault tolerance. Other features include:

- Enhanced any-to-any signaling: adds complete mapping between ISDN and SS7, based on ITU Q.699 standard, and CAS support for more connectivity options with worldwide telecom operators.
- SNMP enhancement: adds three more industry standard MIBs to allow more centralized configuration and monitoring in a network operation center.
- Additional Radius features: for prepaid applications, accepts messages from the Radius server for call duration and call redirection services, for faster processing of prepaid user agreements at the edge of the network.

CONCLUSION

The IMG 1010 used along with the GC EMS significantly lowers the high initial costs of deployment, and it lowers TCO (Total Cost of Ownership) via its centralized management. Just as importantly, it also allows you to inexpensively grow with your service simply by enabling hardware features via Cantata's licensing model. The major highlights of the IMG 1010 that impressed TMC Labs include its high port density, powerful transcoding capabilities, integrated routing functionality, and the Programmable Protocol Language that enables customization of TDM variants. Also, the fact that the IMG 1010 integrates SS7 signaling, VoIP, and routing into a single 1U chassis, replacing three network elements - SS7 Signaling Server, VoIP Trunking Gateway, and the IP-to-IP Transcoder, - makes this one of the most feature-rich, best "bang for the buck" gateways on the market. TMC Labs would not hesitate to recommend the IMG 1010 to service providers looking to deploy VoIP, SS7, and TDM services. IT

RATINGS (0-5)
Installation: 5
Documentation: 4.75
Features: 5
GUI: 4.75
Overall: A

Fixed-Mobile Convergence

for Anytime, Anywhere Communications

Whether you identify it with IMS (IP Multimedia Subsystem), VCC (Voice Call Continuity), UMA (Unlicensed Mobile Access), or CBC (Cellular-Broadband Convergence), the concept of Fixed-Mobile Convergence is here to stay, thanks to its ability to deliver the same services to you regardless of whether you're connected to your fixed or mobile network. But the big question is, "To Dual Mode or Not to Dual Mode?"

"In the Wireless part of the market, FMC is now called Cellular-Broadband Convergence," says Anand Parikh, Vice President of Business Development and Wireless Solutions at Sonus Networks (news - alert) (http://www.sonusnet.com). "But whatever you call it, it's about one handset getting the same services anywhere, and we see that there are three ways to provide FMC as this technology has emerged in the market thus far. One is IMS-based FMC, and that came from the 3GPP standard for VCC. The second method is what the UMA technologies in the GSM world offer, particularly in Europe; UMA being the first way that FMC services were planned to be delivered to the market before the IMS or 3GPP-based VCC standard took hold. The third and newest method is FMC based upon femtocells and picocells, the tiny radio interfaces deployed in a residential subscriber's home that resemble WiFi access points but are essentially indoor miniature cellular base stations that connect over DSL or other broadband backhaul to a mobile core network."

There are three basic FMC technologies and each one presents a different set of challenges to be implemented.

"All these three methods have differences in terms of what they bring to the table, but basically they all focus on providing the same kind of services to a single handset, whether you are using it fixed or mobile network. The underlying technologies are different, the impact on the handset is different, and of course the impact on the networks necessary to support these technologies is quite different as well."

Ajay Gupta, Vice President of the Wireless and Convergence Business Unit at Aricent (news - alert) (http://www.aricent.com) says, "There are three basic FMC technologies and each one presents a different set of challenges to be implemented, either in the network or in handsets. If we look at VCC, which basically allows you to connect to any IP network, if you don't have access to an IP network, you can switch over to a GSM or CDMA network. It makes use of SIP [Session Initiation Protocol] such as SIP-over-WiFi or IMS-over-WiFi. The technology is pretty straightforward and simple to implement in terms of developing products, except that, on the handset side, it presents a challenge when you want to switch between, say, GSM and VoIP. You need certain technologies within the handset for it to operate, such as SIP or IMS clients, plus you really need the handset to be dual-mode to handle WiFi, which means it will use a lot of power. The network side of the technology is not complicated and is fairly straightforward. The challenges are really on the handset side."

"UMA has gone through many trials and has been used in the T-Mobile network and France Telecom," says Gupta. "It presents its own set of challenges, but it has been adopted as a 3G standard. Still, baring very few companies such as Alcatel and Kineto Wireless, UMA has been promoted too much."

"As I said, femtocell technology is really interesting," says Gupta. "It doesn't demand any change in the handset. You can still work with a 2G or 3G handset. Instead of a WiFi router you use a 3G-based router which sits in your home and it communicates on one side with the IP backbone, getting all of your voice traffic over IP. On the other side, it interworks with 3G technology, particularly your handset. This I believe is potentially one of the best solutions apart from VCC, because there's no change needed on the handset side, but the challenge is: how do you create channels for these devices which will allow consumers to build their own network? It also means that the governments will have to provide low power spectrum operating in a given range. Moreover, will the operator manage these devices, or will it be like a WiFi router and the consumer will do some management by himself?"

"As far as Aricent is concerned, we have a fairly dominant play in the femtocell and VCC spaces," says Gupta. "We

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don't have a deep investment in UMA, though we have a few customers."

To Dual Mode or Not to Dual Mode?

"Will dual mode devices become popular? It depends on the network operator," says Aricent's Gupta. "For example, some of the customers we work with are network operators. Some of them favor femtocells, but some broadband operators today offer broadband services and they want to offer WiFi at home, and they prefer VCC solutions. It depends on the nature of the operator or customer. There's no clear verdict as of yet."

At Stratus Technologies (news - alert) (http://www.stratus.com), Ali Kafel, Vice President of the Telecommunications Division, says. "The industry has talked a lot about FMC in terms of dual mode devices. In Germany, Deutsche Telekom wasn't immediately successful in offering dual mode service, but then Orange [formerly France Telecom], Neuf Cegetal and Iliad had a bit more success in rolling out their own services that can switch between cellular and WiFi networks. Their approach also uses a dual mode device. We're not talking about a multi-device phone system - it's a dual-mode single device phone, which some people love. Other people, such as myself, don't want to give up their favorite device. For example, I use a BlackBerry and I don't really want to give it up just because of a new service. But if I can use a service that works with my BlackBerry and my IP desktop phone, then I'll be very interested in it. That's the approach that we take here at Stratus."

"We believe that FMC needs to be not just tied to a dual-mode device, because some people want to use their existing device and want the ability to hand-off calls from one device to another," says Kafel. "That's what we're doing technologically. When you call me on my IP phone, I have the option to provision it as a subscriber; I can go on the web and specify that when a call is made to this number, ring all the devices that I have either simultaneously or sequentially. I can then pick it up and transfer the call from one device to another and the caller won't realize that I have done so. That ability is what I believe is a major requirement in the industry, to be able to go from one device to another, rather than just rely on a dual mode device that roams from one type of network to another."

Single Identity, Single Device

One proponent of dual-mode devices is Luc Roy, Vice President, Mobile Enterprise, Siemens Enterprise Communications (http://www.siemens.com).

"Siemens Communications (news - alert) is actually two entities," says Roy. "First, you have Nokia Siemens, which is focused more on the carrier space and deals with IMS, and then there's Siemens Enterprise, which, as it name implies, focuses on the Enterprise. I represent the Enterprise, so I won't address IMS to any great degree. But, interestingly, within the Enterprise division, we've actually just launched our FMC solution, which is independent of the carrier and agnostic to any RF [Radio Frequency] technologies. It supports GSM, CDMA and it's implemented by the enterprise at its own pace. IMS is taking longer to implement than many people expected, customers are looking for an FMC solution predominantly not so much because they want to save cellular minutes, but it's more about having a single identity, such as a single phone number, a single voicemail. Also, if I as a user enter an environment where there is a wireless LAN and I have a dual mode device, then whether I'm having a conversation or not, I want to automatically roam to my wireless LAN and maintain my single identity, so my dual mode device is represented by a single phone number and

single voicemail box, which is basically my PBX phone number and the voicemail system it uses."

"I've talked to about 40 enterprise customers in the U.S. and all of them don't want a Centrex-type solution because unified communications is so strategic to them that they are investing more with the PBX - for example, making it SIP-enabled because SIP is becoming the standard for communications, whether it be voice, video or messaging," says Roy. "So they're investing a great deal and they don't want to lose control. They're not interested in getting a cell phone number representing the company's identity; instead, they want to retain their PBX phone number as their single identity and add that number onto their business cards, not a cell phone number."

"FMC makes a lot of sense in the enterprise because that concept of a single phone number/single voicemail leads to more productivity, and better reachability," say Roy. "With some of the early trials we've already seen some increased revenue because of FMC. People are now more reachable and can close deals right on the spot. So what we've decided to do at Siemens Enterprise is to create a solution that is totally independent from the carrier. The only thing you need from the carrier is the dual-mode device. Once you've got that, then we've provide the entire infrastructure of PBXs, wireless equipment and FMC capability, which we call the HiPath MobileConnect FMC solution for seamlessly unifying fixed enterprise VoIP, Voice over Wireless LAN [VoWLAN] and cellular networks."

At Sylantro (news - alert) (http://www.sylantro.com), Frank Falm, Vice President of Marketing, says, "FMC can be interpreted in a number of ways. One way is in terms of the IMS network. One of our customers, Swisscom, services both fixed and mobile simultaneously, and they're just building out their IMS infrastructure with Sylantro and Ericsson. They have a very specific program where they have a purely fixed-line service and a service that's purely for mobile, and then they have a service that serves both of those simultaneously. That's a form of FMC where you have just one phone number that's now available in both fixed and mobile domains, and the same applications are available in both domains too. How often have you wanted to have just one phone number? Arguably, that's a form of FMC that's extremely feasible in the marketplace and it's something that users understand. You call that the 'seamless mobility with single mode devices' definition of FMC. Basically you're talking about mobile extensions to business or home phones from the server."

"FMC can also be defined more in terms of IMS and 'seamless mobility with dual-mode devices'," says Falm. "In the IMS world you have VCC, or Voice Call Continuity, defined by the 3GPP standards guys, which provides a flavor of that. That's also feasible, and it's what we at Sylantro had worked on with a client vendor called FirstHand Technologies. At the client level, FirstHand monitors signal strength and they initiate the handover of voice calls to achieve the 'seamless mobility' function. Calls can start on the WiFi side and roll over to the cellular side. There's also logic in there to initiate the call on the cellular side and pin the call through a Sylantro server so you can handoff to the WiFi side. That handoff is achieved through the Sylantro API called Synapps, and a fixed mobile application in cooperation with a client developed by FirstHand."

"Aside from this form of FMC, a huge variety of vendors out there provide similar seamless handover functionality at the network level," says Falm. "The guys playing in the VCC space who are building VCC servers can include the likes of Bridgeport Networks, Outsmart, and so forth and then you have NewStep Networks, which has a flavor of that too. Still, the question becomes: how viable is seamless handover? Will it be massively adopted or is that something that's interesting for a certain class of people? One thing we have seen is that, for the most part, people don't want to pay for this function. If it happens, they expect it to happen for free. It's not viewed as a high value service but it's definitely something which can greatly improve certain scenarios."

"What we see as being more interesting is the single-mode device model where your mobile device now participates as part of your business or in a hosted service," says Falm. "That's considered to be high value because people are familiar with their devices and plans. Dual-mode makes sense in an area with very limited coverage. In fact, I'm speaking to you from Vienna, Austria, right now and if I had one of these dual-mode devices or a WiFi device here in my room, I could easily use that to place and receive phone calls through the network. So there's a case where I don't want to pay the roaming fees of three dollars a minute over here and I could in fact leverage a WiFi/broadband connection to achieve the same functionality. So there's a huge value and savings in being able to do a sort of 'long distance remote'."

Testing for FMC

Certainly to make FMC successful, a great deal of testing at the vendor and network level will be necessary. At Azimuth Systems (news - alert) (http://www.azimuthsystems.com), Jeff Abramowitz, Vice President of Marketing, says, "Azimuth's standardized wireless test solutions enable research, development, quality assurance and ultimately better marketing. Engineers can test the performance, conformance and certification of wireless devices and networks supporting data, voice and video applications. We've focused on wireless IP engineering test equipment. We're a major player in the WiFi space. Anybody who's anybody in WiFi uses our equipment, and now we've added WiMAX capability. We supply to the WiFi Alliance and Cisco, and we've garnered some design awards, and so forth."

"The Azimuth approach follows what most companies do for wireless testing in their own labs," says Abromowitz, "but with the added benefit of Azimuth

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having standardized this equipment. We put products in shielded enclosures that we call RadioProof™ enclosures, and we enable real access points to talk to real handsets. We simulate motion with our patented SmartMotion™ technology that uses precision attenuators to simulate how a handset can move away from an access point. We can even simulate motion in a controlled environment where hostile conditions such as traffic, interference, multipath, etc., can be introduced. Our Director software controls all of this functionality, and our Studio software allows people to share it. At a very high level, we sit at the intersection of testing data communications and wireless communications. Our mission is to provide these standard tools that enable customers to build product that are higher quality and that will shorten the development time for customers bringing their products to market."

"We have two categories of system products, one that we call System Test platforms and the other is Channel Emulator," says Abromowitz. "The key distinction between these two types of platforms is that a System Test Platform has what we call a static channel; you're basically cabling from one device to other and the only thing encountered in that channel is straight attenuation. The System Test Platform allows customers to test not just point-to-point but point-to-multipoint or even multipoint-to-multipoint. That's different than a Channel Emulator, which you can visualize as just a big bank of digital signal processors that you place between an access point and a handset. That bank of signal processors mimics reflections, attenuation, things moving around in the real world so that you can do controlled performance testing of a device against an access point. If you take a handset to a house, apartment, or commercial building and then you walk around each location, even if you have the same handset and the same access point, the handset's performance will differ because each environment is different. If you want to truly characterize the performance of the handset, you'd have to visit many locations. Our Channel Emulator basically does that. It uses the IEEE 802.11 models to replicate SOHOs and so forth. With the emulator, vendors can thus do rigorous testing."

"Carriers are looking for excellent call quality," says Abromowitz, "avoiding dropped calls and long battery life. All of that sits on top of standards, performance and industry certifications. The challenge is that certification doesn't necessarily imply anything in terms of performance, so you can have devices that are both certified and yet have vastly differing performance characteristics. That difference gets magnified if you start looking at phones as opposed to PCs or other data devices. When comparing home *versus* public access environments, you may find that a phone has different ranges from an access point."

"So, for vendors that are testing the WiFi aspect of FMC in their phones," says Abromowitz, "they need to test both the voice quality - yielding the Mean Opinion Score data - and the data throughput over range. They need to do 'cabled testing' because that's the way you get repeatable test results. And vendors also want to do 'open air' testing because that's how the end user will ultimately experience the product. Interestingly, in the cellular space, most testing is done in a cabled environment and spot testing is done in an open air environment. In the WiFi space, open air testing is what's most often done. Our expectation is that testing procedures will move toward cabled environment testing and spot checks will be done on open air testing."

"Interference and loading on the system will also obviously affect handset performance," says Abromowitz, "and then of course there's the notion of multipath *versus* non-multipath, and having a 'fair' channel versus an 'unfair' channel also affects a product's performance. Things can get quite complicated."

At another great testing vendor, Tektronix (www.tektronix.com), Keith Cobler, Marketing Manager for Network Management, says, "Some people think of fixed-mobile convergence as an end-all technology, and others think of it as a stepping stone towards IMS. Depending on your current business model, you may have a different interpretation of where you stand. For many carriers, FMC is all about roaming with voice from fixed to mobile environments. Tier-1 operators are very much convinced about IMS and they're heading down that path. For many of them, FMC is an easy way to 'test the waters' because there's been an overall promise, from the consumer side, of having services and applications anytime, anywhere. So FMC is a nice 'proof point' for a lot of the larger tier-1 carriers to better embrace that concept."

"From our side we've worked with many network operators and FMC is indeed a stepping stone toward IMS," says Cobler. "For others, FMC is all about voice, because that's what their business model calls for, and now they've got the added benefit of combining some type of dual-mode device, such as a WiFi/cellular handset, where you can address both customer environments. So, yes, there are several definitions for FMC and many ideas as to where it's headed."

"UMA is the GSM 'flavor' of FMC," says Cobler. "It's really FMC for an operator that's following the GSM path, and it's looked upon as a less expensive alternative to IMS. IMS can be a bit scary if you're an operator and you want to deploy it throughout your entire network. That's a very expensive proposition to take on. In general, the operators' mindsets are beginning to change and the consumers will drive the network transformation. Let them choose the applications and if those apps are successful, then you build whatever network it takes to support those applications. In that sense, FMC is a good stepping stone in that direction."

The general consensus is that IMS/VCC is the long-term heir apparent to providing FMC functionality, but femotcells and picocells appear to be a 'dark horse' technological candidate that may yet surprise all of us. IT

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

A Note on Power Protection & Management

One thing that IP Communications equipment shares with older PSTN devices is that both run on the world's most remarkably unpredictable form of energy, electricity. Mother Nature sometimes hurls a bolt of lightning that can find its way via a power or modem line to a PC or server, frying some vital component in a millisecond. Blackouts or severe brownouts can disrupt everyday business too. Even if everything seems just fine, subtle, transient phenomena such as brief voltage surges provided by your friendly local power company slowly damages sensitive electronic equipment. Even tiny static discharges from your fingertips can shorten the life of PC semiconductor chips considerably.

Just about all of us probably own a simple power strip with a primitive surge protector consisting of wires and fuses set up to redirect high voltages before they reach (and destroy) your valuable equipment. Most work by suppressing incoming electrical surges before they reach your equipment by shunting the surge to a ground, most commonly via a metal oxide varister (MOV). Other suppressors add a filter or choke which, rather than unloading the entire thrust of a surge onto the ground wire at one time, releases a "captured" surge to the ground wire in small and controlled increments.

It's time to take a look at your power situation and perhaps upgrade to a new UPS system.

Given the number of horror stories related to power failure, most IT and IP Communications managers generally take more substantial steps toward protecting critical equipment such as phone systems and back office servers, which usually involves buying an Uninterruptible Power Supply (UPS) having built-in surge suppression and power conditioning.

Take for example the Liebert IP Telephony Availability System from Emerson Network Power (http://www.liebert.com) which can deliver data center-level power protection to network edge equipment in remote access points, such as branch offices, retail stores, and other locations. It fits right in with stackable switches and routers, and it meets Cisco's AVVID (Architecture for Voice and Video Integrated Data) Partner Program test criteria for interoperability with Cisco CallManager Express 3.1 and Cisco Unity Express. Your local Liebert representative will help you tailor the system to work with your other equipment.

Liebert's OpenComms Web Card enables remote monitoring of the UPS, and allows you to remotely reboot attached Cisco equipment by cycling the UPS power off and on. For maintenance purposes, a 2U-high Liebert POD allows you to bypass the UPS and also provides power output distribution. If you're security conscious, you can place the system in a Liebert Foundation wall-mount or free standing enclosure that comes with a locking door and hinged back.

American Power Conversion, (news - alert) or APC as it's known (http://www.apc.com) is a huge company that has several families of UPS devices that work will with IP telephony equipment in general and Cisco VoIP

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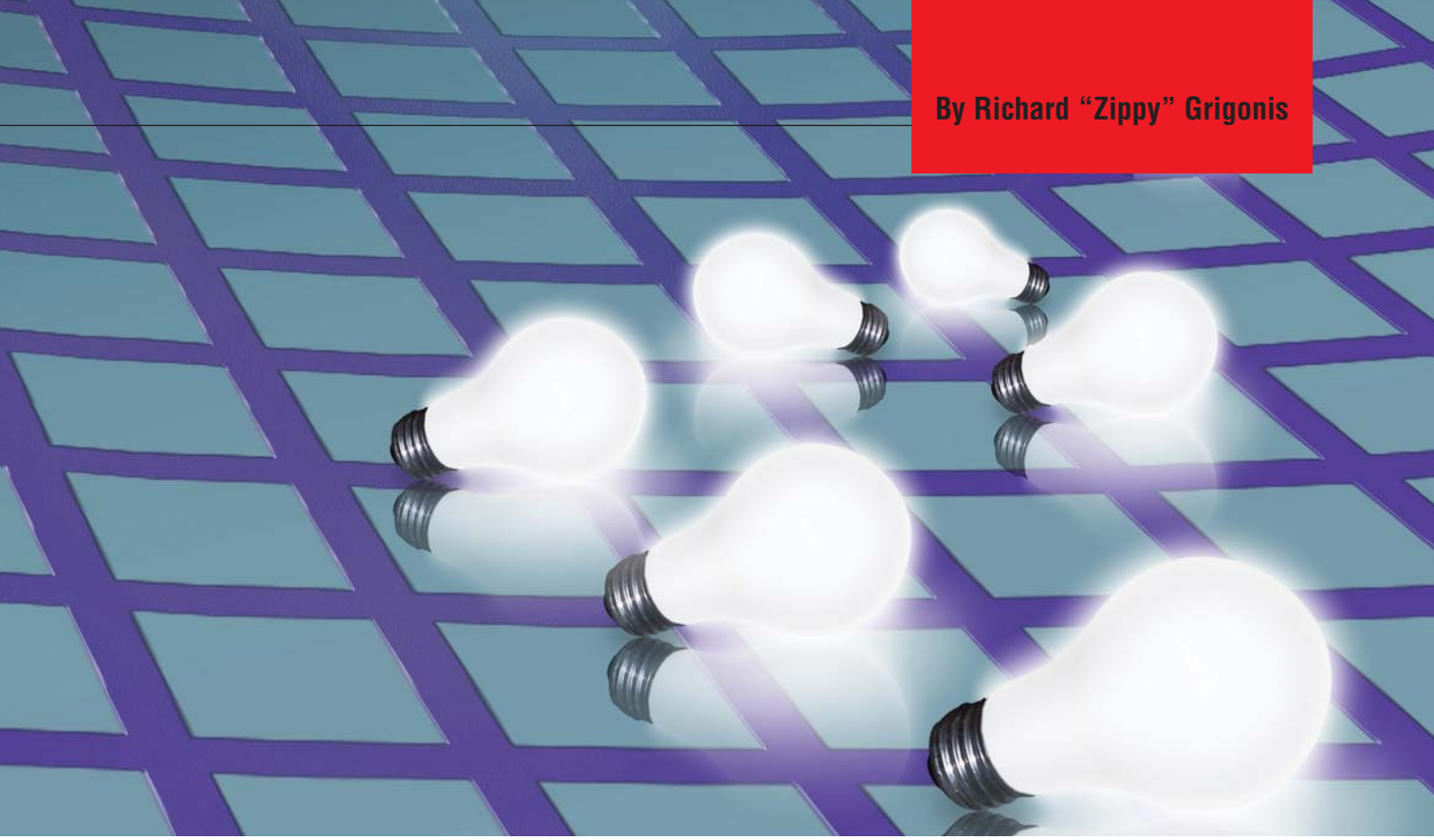

By Richard "Zippy" Grigonis

equipment in particular.

For example, APC's Smart-UPS® & Smart-UPS® XL devices use a line-interactive topology and precise voltage regulation.

Then there's the Symmetra® line. At the low end is the APC Symmetra, an on-line double conversion unit that leverages paralleling capability to offer expansion and redundancy within the system by using multiple power modules. The Symmetra offers outputs from 2kVA to 6kVA (1.4kW to 4.2kW) plus redundancy. Next up is the Symmetra LX, also an on-line double conversion unit offering outputs from 4kVA to 16kVA (3.2kW to 12.8kW) plus redundancy. Farther up the scale is the Symmetra PX, another on-line double conversion device having a modular architecture as well as expansion and N+1 facilities, providing three-phase power protection from 10kVA to 80kVA (10kW to 80kW).

Control and management of power is another big consideration, particularly if the person in charge is nowhere near the equipment he or she is supervising. For these folks, Dataprobe (news - alert) (http://www.dataprobe.com) offers the iBootBar, a new remote power distribution and management solution enabling web browser control of eight A/C power outlets for reboot and remote power control of multiple devices. A serial port or optional internal modem is also provided for out-of-band access when the network is unavailable. The iBootBar also supports Telnet, SNMP, SMTP and SSL security. Multiple iBootBars can be linked together to provide control of up to 128 outlets from a single IP address and web interface. The iBootBar can monitor networked equipment and will automatically reboot the equipment in the case of a system freeze. Dataprobe's AutoPing feature continuously monitors multiple IP addresses and takes programmed action when it detects non-responsive systems.

Even in the face of terrorist threats, power is taken for granted. Basic systems tend to be installed and kept out of sight and on the 'back burner', as it were. It's time to take a look at your power situation and perhaps upgrade to a new UPS system. IT

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

CORPORATE PROFILES

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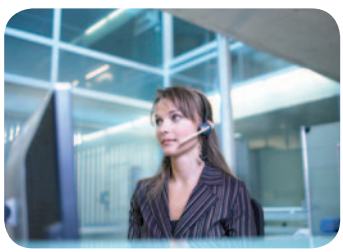

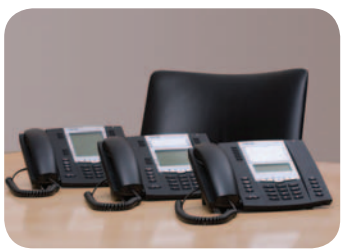

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"In CNET Labs' tests, the service proved one of the quietest we've evaluated, with little of the background noise that typically plagues VoIP calls." - CNET

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Iwatsu Voice Networks' newest communications server, the Enterprise-CS, is integrated with QuadFusion™ Technology. This technology was developed by an international design team, and integrates the four dominant protocols: TDM, VoIP, SIP, and H.323. The key feature of QuadFusion™ Technology is the ability to run any of these protocols either exclusively or in combination. Using a perpetual architecture design (PAD) scheme, IVN has minimized obsolescence of its systems, including legacy ADIX systems. An ADIX system installed in 1989 can be upgraded to the latest ECS technology while retaining most of the initial investment. All new equipment is designed with incremental upgrades in mind, eliminating costly fork-lift upgrades and providing end users with cost effective solutions.

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Our Mission is to enhance your communication with innovative VoIP products

WHO

ATCOM technology is the leading VoIP terminal manufacturer in China, with the wide range of VoIP products from IP phone, ATA , IAD to USB phone and Asterisk IP PBX cards. Since its foundation in 1998 , ATCOM has sold the products to more than 100 countries and gained the reputation in the global VoIP market

WHAT

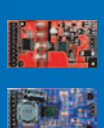
ATCOM provide full range VoIP terminals for small and medium size business (SMB) to build up the IP PBX system to enhance their communication efficiency while reducing cost. From IP phone , USB phone to ATA we have high and low end model to satisfy the needs for different enterprises. The varied model of IP PBX card like E1 T1 and ISND cards are popular in the global IP PBX market and Asterisk users.

Embedded IP PBX

Mini ATA

WHY

With 10 years experience of developing the VoIP terminals , ATCOM technology has accumulated much high technology in R&D and manufacturing of the VoIP products. As early as In 1999, ATCOM developed PCI interface ISDN NT+ cards and provide OEM service for FUJITSU ,NEC and then start to develop IP phone , IAD and USB phone in 2002. ATCOM has been always focusing on the needs and trends in the global VoIP market , develop new products year by year , cooperate with many well-known branded companies for the OEM and ODM projects, such as HUAWEI 3com , HARBOURNETWORKS , D-Link , TOPCOM , FUTIRO , PACKET8. Meanwhile the Thailand Telecom , Slovenia Telecom, Chile REDVOISS and some telecom carriers in other countries also adopted ATCOM products.



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Tadiran Telecom

For over 40 years Tadiran has been satisfying real-world communication needs of organizations around the world.

A company rich with history

Tadiran Telecom products have long been the standard by which other communications solutions are measured. Forming strategic alliances over the last 40 years, our products have been represented by some of the world's largest telephone and communications companies.

Today, Tadiran Telecom solutions are sold in 41 countries with tens of millions of ports installed. Best known for our Coral line of converged IP-PBX systems, Tadiran maintains a commitment to never leave a customer behind by providing a clear migration path.

A commitment to R&D and tomorrow

Tadiran's commitment to R&D is evident with new products like the Sea Softswitch. While most manufactures ported their legacy PBX components, Tadiran built an entirely new softswitch. In 2006 we will also release a new series of IP telephones and a new desktop productivity tool - NAVIGATOR.

CORAL
SEA SOFTSWITCH
multimedia communications

Tadiran America Business Partners

Tadiran products are sold exclusively through business partners. Tadiran America Business Partners provide sales and service to our customers in North and South America. These resellers must maintain technical certification. Tadiran America is based in Port Washington NY.

Tadiran Government Systems

Tadiran Telecom products continue to be the choice of federal, state and local government agencies around the world. Located in Alexandria, VA, Tadiran Government Systems is experienced with purchasing procedures and provides complete project management.

Technology that speaks volumes

Tadiran designs and manufactures communications products for organizations of all sizes. Our Coral IPx systems provide complete hardware/software telephony solutions. The Sea Softswitch is a entirely new SIP softswitch that features a revolutionary "replication" architecture that provides a seamless distributed communication system for all size organizations. Our Composit Contact Center is a flexible call center application with database integration and agent toolbars. Tadiran produces both softphones and desktop telephones in a variety of models. We offer standard SIP telephones as well as MGCP.

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singlePIPE COMMUNICATIONS

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SinglePipe Communications is a facilities-based wholesale communications provider headquartered in Lexington, KY, with offices in Louisville, KY, Charlotte, NC and Atlanta, Georgia. SinglePipe provides services that enable operators and channel partners to offer Voice over Internet Protocol (VoIP) services to their residential and business customers.

In addition, SinglePipe offers origination/termination, turnkey VoIP services, integrated portal access/OSS services, billing, E911, along with industry-leading support, training and marketing resources. The SinglePipe team is dedicated to quality solutions that provide new lines of revenue to service provider clients, enabling them to expand their business model to keep pace with the needs of their customers.

SinglePipe Voice

SinglePipe Voice allow providers to offer nationwide SIP origination and termination services combined with a reliable facilities based network built throughout the Southeastern United States. As a facilities based CLEC in ten states SinglePipe offers the reliability and breath of service providers look for to launch or augment VoIP services.

SinglePipe Residential

SinglePipe is a carrier-grade, turnkey VoIP solution that meets the regulatory requirements for primary-line service, enabling providers to rapidly capitalize on the current opportunity for residential broadband voice.

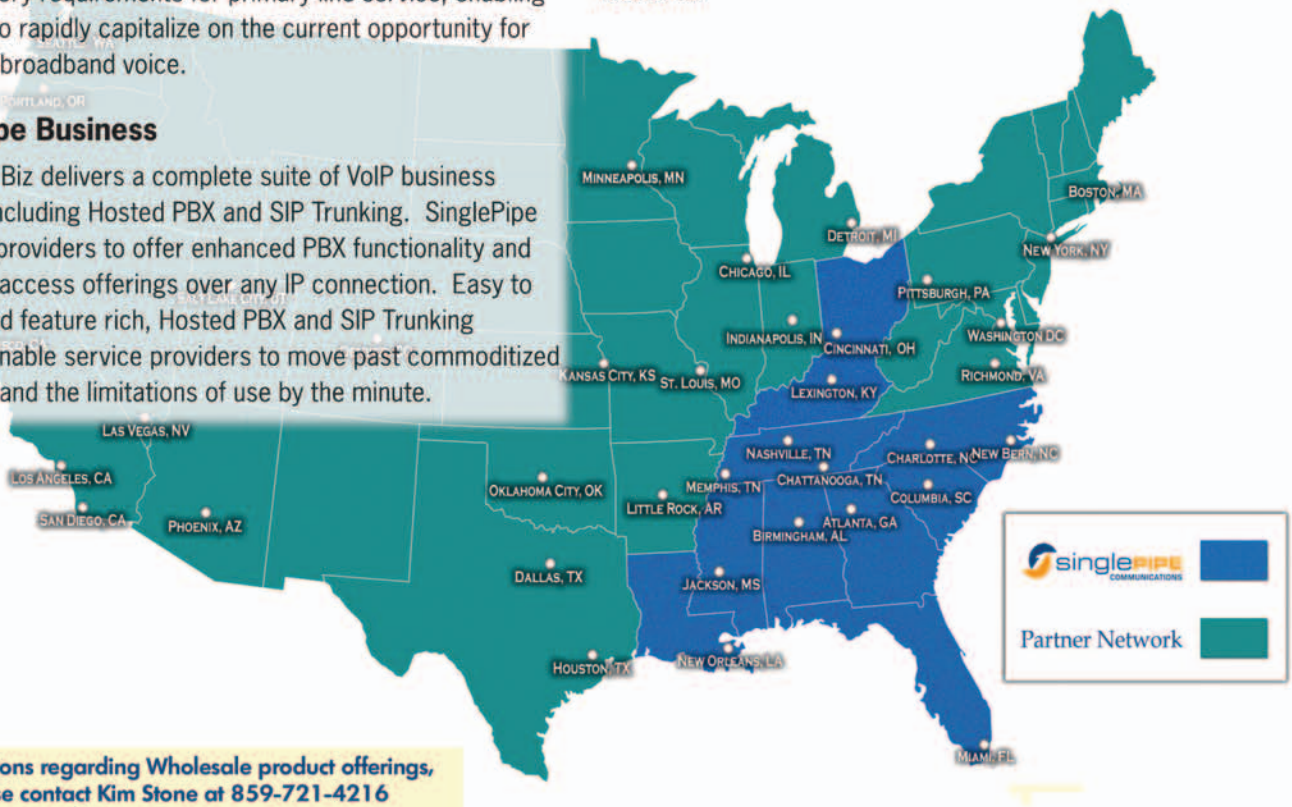
SinglePipe Business

SinglePipe Biz delivers a complete suite of VoIP business solutions including Hosted PBX and SIP Trunking. SinglePipe Biz allows providers to offer enhanced PBX functionality and integrated access offerings over any IP connection. Easy to manage and feature rich, Hosted PBX and SIP Trunking solutions enable service providers to move past commoditized bandwidth and the limitations of use by the minute.

SinglePipe Managed Modem

SinglePipe Managed Modem delivers dial-up Internet access services to ISP's over a facilities-based network through our regional footprint. The service provides direct routing of Internet traffic through SinglePipe's extensive high-bandwidth redundant network.

Managed Modem service provides local access numbers throughout the footprint and is fully scalable in all areas. Through SinglePipe Managed Modem, customers can deploy new locations rapidly as well as upgrade capacity in existing locations.



For questions regarding Wholesale product offerings, please contact Kim Stone at 859-721-4216 or info@singlepipecom.com

For questions regarding Channel product offerings, please contact Jeff Schilffarth at 859-721-4256 or channelinfo@singlepipecom.com

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VoIP MARKETPLACE

ADVERTISING INDEX

Going Green

By Greg Galitzine

One of the most significant changes sweeping the technology landscape is the greening of the industry. The green movement is going mainstream, and in many cases the benefit to the environment is ironically taking a secondary position to the main interest of businesses, which is the making of green of a different color. That's right, today's green technology movement is as much about making money as it is about being socially responsible and kind to the environment.

For our part, TMC has launched a green initiative of our own. Our Green Technology World Web site (http://www.tmcnet.com/green/) was launched with the goal of helping environmentally conscious business leaders choose environmentally friendly solutions. The site is designed to educate readers about technologies, essential issues, and trends that enable companies to operate more efficiently, thereby creating a positive impact on both their businesses and the environment.

The green technology movement has spawned several organizations who have pledged their support for the environment.

The Green Grid

One such organization, The Green Grid, is a consortium of big players on the IT scene seeking to improve energy efficiency in data centers around the globe. According to that organization's "About" page on their website, (http://www.thegreengrid.org):

"The Green Grid takes a broad-reaching approach to data center efficiency focusing on data center "power pillars" that span the gamut of technology, infrastructure and processes present in today's data center environments."

The consortium's Board of Directors member companies are a veritable Who's Who of technology: AMD, APC, Dell, HP, IBM, Intel, Microsoft, Rackable Systems, SprayCool, Sun Microsystems, and VMware are working together to engage in research, drive standards, and educate the marketplace.

Climate Savers Computing Initiative

Just this past June, Intel, Google and over 25 other organizations joined forces in pledging their support for the environment.

Together with the likes of Yahoo!, NEC, Dell, HP, IBM, Microsoft, and others, the group announced the formation of the Climate Savers Computing Initiative (http://www.climatesaverscomputing.org/), an organization whose stated goal is to:

"…save energy and reduce greenhouse gas emissions by setting aggressive new targets for energy-efficient computers and components, and promoting the adoption of energy-efficient computers and power management tools worldwide."

According to the Climate Savers Computing Initiative website, the average desktop PC wastes nearly half the power delivered to it, and this waste increases the cost of powering a computer, as well as increases the emission of greenhouse gases.

Among the goals of the new environmentally friendly alliance, the Climate Savers Computing Initiative hopes that by 2010, reductions in wasted energy and the adoption of eco-friendly methods of producing PCs will help lower greenhouse gas emissions by up to 54 million tons per year.

Green Technology Initiative

The Green Technology Initiative is similar in nature to The Green Grid, but with a distinctly British feel. The group was organized to help businesses in the United Kingdom reduce the carbon footprint of their IT systems in step with a concomitant government mandated reduction in greenhouse gas emissions totaling 20% by 2010.

According to the company's website, http://www.greentechnologyinitiative.org:

"The Initiative is a non-commercial organisation providing the business community with free advice and information. We are supported by a wide range of Industry leaders whose experience and advice in all areas will be invaluable in achieving our aims."

There is one particular statement that the group makes online that sums up my own feelings regarding the green technology movement. "Most businesses cannot just decide to 'go green' - after all, their job is to make money for the shareholders, not save the planet. Our job is to help them do both."

So it is entirely plausible to do right by Mother Earth and make a few dollars while doing so.

And yet, challenges remain. As industry-wide recognition of the need to go green accelerates, companies are realizing that it's one thing to get behind an environmentally friendly green initiative; it's quite another challenge to actually do something about it.

A recent survey published by the Green Technology Initiative found that the overwhelming majority of British businesses (95%) believe that reducing our carbon footprint is critical to an overall green strategy.

Ironically, about 70% of those surveyed have no plan, and no target to reduce their own carbon footprint.

Dan Sutherland, founder of the Green Technology Initiative, said, "What we are doing in IT today is not sustainable. Systems efficiency is the cheapest and easiest way of reducing the carbon footprint of the work you do, and delivered properly, it has the benefit of bringing down costs across the board. Whilst undoubtedly UK enterprises are willing to take action, many lack the incentive, knowledge and resources to make immediate changes."

The survey also found that many expect industry and government to take the lead in reducing harmful emissions. IT

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