TMC
INTERNET TELEPHONY®

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Pg. 16

Allworx Unleashes Key System Killer

The VoIP Authority Since 1998™

Cutting The Cord

WiFi Telephony Turbocharges Productivity

Also In This Issue:

- NEC's Langdon on the Future of VoIP
- My IP Telephone's CEO Speaks Out
- Open Source Spurs IP PBX Innovation

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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.

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The VoIP Authority

By Greg Galitzine

Scaling Down: VoIP for the SMB Becomes a Reality

I've been hearing quite a lot lately about small and medium business (SMB) customers and how equipment vendors and carriers (through hosted offerings) are targeting this heretofore underserved market. John Macario, president of telecom management consulting firm Savatar, noted, "The small and medium business VoIP market is starting to heat up, yet it is still up for grabs. SMB decision makers still don't know which providers to turn to for services."

Well, SMB decision makers are increasingly faced with a multitude of choices when it comes to embracing VoIP. (define - news - alert)

Allworx just launched their 6X "key system killer" product, which I describe more fully on page 16.

Whaleback Systems is continuing their push into the SMB with the announcement of two new feature upgrades to its CrystalBlue Voice Service, which is a turnkey, premises-based, IP PBX solution The features include Road Warrior Functionality and OrcaDial.

Road Warrior Functionality is designed to allow businesses to extend their office communications to employees that are on the road or working from home provided they have a connection to the broadband network.

OrcaDial delivers click-to-dial functionality across multiple applications. For example, a user can highlight a phone number in a desktop application and hit the F10 key to establish the call. OrcaDial works with multiple desktop applications, including Microsoft Word, Excel and PowerPoint and others.

RNKVoIP, a VoIP wholesaler, recently unveiled its RNKVoIP for Small Business plan. RNKVoIP announced that it will be a participating service provider in the Linksys Voice System 9000 (LVS9000) Program.

Skype (news - alert) and Vonage news - alert) have both recently made some waves in the SMB pool as well.

However, one of the biggest stories I've come across recently is Sprint's entry into the enterprise hosted IP telephony space, with the announced launch of their Sprint IP Voice Connect offering. Sprint IP Voice Connect is a network-based hosted telephony solution designed to provide local and long distance services as well as PBX and traditional Centrex features over Sprint's Dedicated IP or Global MPLS network. Sprint's secure carrier-grade service is enabled by Lucent Technologies' Hosted VoIP Solution for Enterprises through its Global Network Operations Centers.

Of course, Sprint is most likely to go after the "M" of the SMB market first, but the fact is their solution is able to scale down as well.

The IP Voice Connect solution is based on Lucent's Hosted VoIP Solution for Enterprises, which in turn is based on Broadsoft's Broadworks application platform.

Lucent's successful ongoing partnership with Broadsoft is a relationship that resonated with Sprint. According to Joel Whitaker, product marketing manager at Sprint, "Broadsoft is a true carrier-grade VoIP platform and Lucent's implementation is secure, reliable, and fully featured."

I asked Diane Myers, director of strategic marketing at BroadSoft, what she thought of Sprint's entrance into the hosted IP telephony space.

"The potential impact Sprint has on the marketplace is numerous but two key areas are its focus on large enterprises and position in the mobile market," said Myers. "With most carriers' hosted IP PBX services focused on the SMB market, Sprint's commitment to marketing IP Voice Connect demonstrates the validity of the solution for businesses of all sizes. On the mobile front, with a fully integrated wireline/wireless operations, sales, and marketing organization, Sprint is in an ideal position to offer a converged hosted PBX application. This will provide them with the ability to offer unique service capabilities in the near-term."

So the SMB market has gone from underserved, to highly targeted. In the end, it's these users who stand to benefit the most, as they get to choose solutions of every stripe, at every price range, and with features to spare.

Greg

ERRATA

Looks like we goofed on our Ad index in the March 2006 issue. The index should have listed the ad on page 23 as CommuniTech Services. The company can be found online at http://www.communitechservices.com.

TMC
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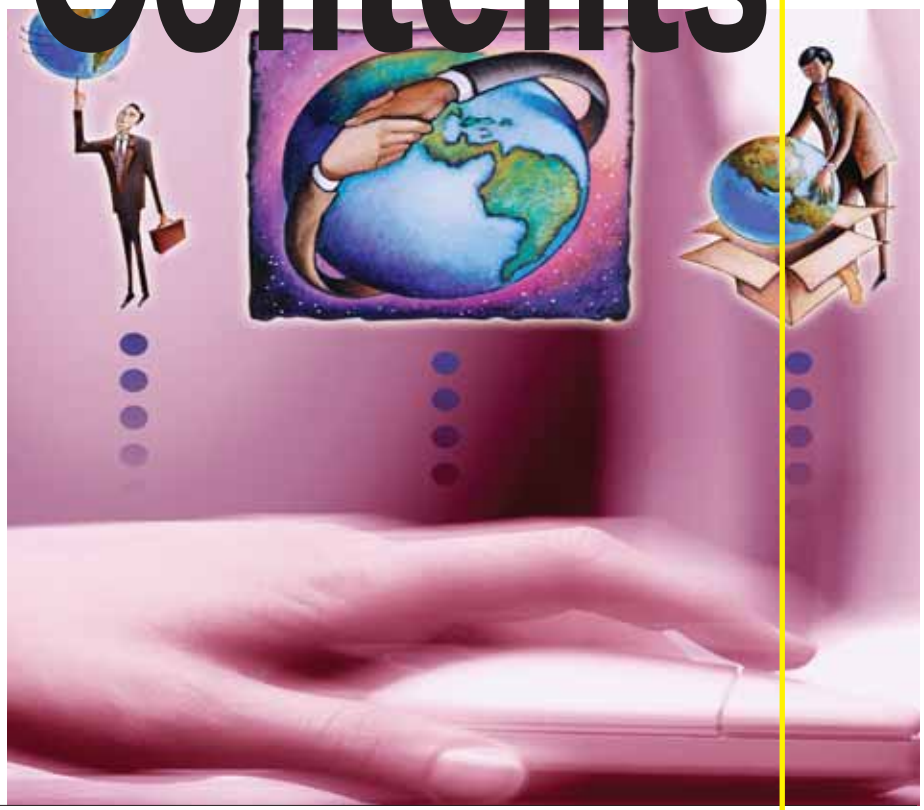
Volume 9/ Number 4 April 2006

Contents



Go To Table of Contents | Go To Ad Index

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Contents

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1. Herndon, VA
2. Middletown, NJ
3. Marina Del Rey, CA
4. Milton, Australia
5. San Francisco, CA
6. New York, NY
7. London, UK
8. Redmond, WA
9. Cambridge, MA
10. Denver, CO

QUOTE OF THE MONTH:

"A common analogy about commercial open source business models takes the beer out on the town: The recipe to make beer is readily available for free on the Web, a premium beer at a bar will cost you about five bucks, and a cab ride home runs about twenty dollars. Your free beer recipe is your freely available open source code. The premium draft represents the companies selling pre-packaged open source software (and perhaps services if there's also a band playing and you've tipped your bartender). The cab ride home represents the service industry that has grown up around supporting open source software and is where a lot of the revenue is to be made with open source. Despite the recipe being freely available, people everywhere still head out for beer and businesses thrive."

—Tristan Degenhardt, page 116

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 5.9 million unique page views per month, translating into over 700,000 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.

Study: 4 out of 5 Businesses Switch to IP Telephony

According to a recent study conducted by research firm Integrated Research, 78 percent of large companies are deploying IP telephony. http://tmcnet.com/266.1

10 Things to Consider When Purchasing a Headset

Many call centers continue to use headsets that offer ineffective or no control over incoming call volume, personal fit and clarity. When purchasing headsets for a call center environment, it is important to think about such things as audio quality, fit and ease of use, not to mention the types of options and support available for users. http://tmcnet.com/267.1

IP Triumverate to Supply Military-Grade Communications Systems

Adtech Global Solutions, Sphere Communications, and Polycom are providing an IP PBX solution for small and medium businesses based on a solution that recently received the stringent Joint Interoperability Test Command (JITC) PBX1 certification required for deployments in the U.S. Department of Defense (DoD). http://tmcnet.com/268.1

iPod Neutrality

While we in the U.S. are busy talking about Net Neutrality and the pros and cons of each side of the argument, French government officials are beginning to implement music neutrality, which will force Apple to ensure its music service and players work with competing services and players. http://tmcnet.com/269.1

TANDBERG Television to Unveil Next-Gen End-to-End IPTV Solution

TANDBERG Television is set to put its end-to-end IPTV solution — which comprises compression, on-demand, and interactive components — next week. TANDBERG Television, which currently has more than 50 IPTV deployments worldwide, enables IPTV operators to reach new heights in television experiences. The melding of TANDBERG's sophisticated compression technology in streaming media with an interactive on-demand environment is set to open the door to the next generation of IPTV. http://tmcnet.com/270.1

TMC's SIP Channel

The SIP Channel on TMCnet.com features the latest news, as well as original articles related to what many believe will be the cornerstone of our communications future. To visit TMCnet.com's SIP channel, just point your browser to http://www.tmcnet.com/channels/sip/. Sponsored by AGN Networks.

TMC's Triple Play Channel

The Triple Play Channel on TMCnet.com features the latest news, articles, and case studies in the booming Triple Play space. To visit TMCnet.com's voice channel just point your browser to: http://www.tmcnet.com/channels/triple-play/. Sponsored by NetCentrex.

Go To Table of Contents | Go To Ad Index

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- SPA941, SPA942 with 2 or 4 extensions and display

IP Telephone Accessories
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- POES5 PoE Dongle

SPA942
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BUSINESS SERIES

CISCO SYSTEMS

By Rich Tehrani

There is Enough Broadband Competition

I get the general sense that our government believes we already have enough broadband competition. I think that the FCC believes service providers should be allowed to charge anyone and everyone who uses their pipes whatever they need in order to pay for the maintenance and further build-out of their networks.

We have witnessed the slow dissolution of the CLEC market in the past years; we have seen the slow and steady decrease of ILECs; and we have just about reassembled the former AT&T. (quote - news - alert)

Many taking this side of the argument will point out that cable and VoIP (define - news - alert) companies are generating sufficient competition along with wireless, broadband over power line, and satellite.

In the late nineties, we thought the market would be best served with thousands of CLECs serving customers. That was the environment the government set up. Now it seems that the FCC is happy with just a handful of strong competitors.

Many have seen me quoted in such newspapers as *The New York Times* as a proponent of net neutrality, but let's face it, the lobbyists with the Ferraris work for the phone companies.

In addition, it is fairly obvious that current FCC Chairman, Kevin Martin, has little or no interest in net neutrality. The chairman is well connected with the Bush administration, which pretty much cements the fact that net neutrality arguments are a big waste of time. You may as well use the effort for a worthy cause, like donating time to a charity or helping underprivileged children, because from where I sit, Chairman Martin's mind is pretty much made up.

This, of course, is just one person's opinion — but I have heard the chairman speak and have been researching the matter for quite some time.

Ours is a country based on freedom, which we spread around the world. But we will soon lose some of this freedom — at least on the Internet. We may not be able to use applications, like Skype, without paying extra for them; still, this would be better than the situation in China, for example, where the practice (using Skype) has been banned or, to put it nicely, "put on hold." Furthermore, unless service providers get an extra fee, videos streamed on the Internet may not be of very high quality. In general, we can expect service providers to provide inferior Internet service unless they are paid a premium by the customer, the content provider, or both.

Once we accept these certainties, the question becomes how to make money in such a new world. If you think the model of charging $15 per month for VoIP and raking in cash is the future of your VoIP company, you may as well plan to start passing out the pink slips by New Year's Eve.

This concept won't work; the only way to differentiate yourself is to provide different offerings. Explore higher quality VoIP, surround sound VoIP, stereophonic VoIP, videophones, collaboration products, dual mode phones, and so on. You can partner with anti-spam or security companies to offer a bundle of secure voice and Web surfing.

The one thing you need to stop doing is going head-to-head with Vonage. This is a nice business model, but can't last forever. Survey your customers. Hold focus groups. What do your customers want? Do everything you can to figure out where the money will be tomorrow.

If one more service provider tells me they are better than Vonage because they are cheaper, I may scream.

Here is a simple idea worth hundreds of millions, in my opinion. Offer a wake up service hosted by celebrities. How many teenagers would pay $.25 per day to be woken up by Justin Timberlake or Britney Spears? How about a service that wakes you with an MMS message containing a Paris Hilton photo? You can even choose the rating.

Go To Table of Contents | Go To Ad Index

RUN WITH IT

"Emergent enabled our new company to hit the ground running with leading-edge software solutions at a tremendous value."

James Ballard Smith
Chief Operating Officer
InZon Corporation

InZon, a new global communications corporation utilizing VoIP technologies, needed proven, reliable software solutions that out-performed competitors in capability and value.

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Get creative. If one more service provider tells me they are better than Vonage (news - alert) because they are cheaper, I may scream. If you have to price lower than Vonage to make sales, you have a cheap phone service, and customers don't want a cheap phone service to carry their 911 calls. As I have asked before, would you rather have the ambulance taking you to the hospital made by Honda or Yugo? Which would you send your kids in?

On to VoIP Peering

Everywhere I turn, people remind me that I declared 2006 the "Year of VoIP Peering." At least, it seems that everyone agrees. The numbers I am seeing coming out of the VPF, for example, are staggering. The total number of minutes carried each year seems to grow exponentially on their peering network.

In addition, there are rumors that AT&T will join the VPF. The announcement was not made formally, but my sources tell me there is a good chance it will happen. Incidentally, I met some people from AT&T after my last keynote at the Voice Peering Forum in New York, and I wouldn't be surprised to see them join.

If this announcement happens, I will be absolutely correct and we will see even more rapid acceleration of VoIP peering in the world. If it doesn't happen the market will still grow — just a bit more slowly. So far, this is still the Year of VoIP Peering. I will be keynoting the next Voice Peering Forum event in Miami around the same day this magazine mails.

The Problem with TV

Most business magazines will tell you the phone companies will have a tough time unseating the cable companies when it comes to TV transmission. Here is why every one of those magazines and newspapers is wrong: HDTV selection stinks today. Apparently, I spent a fortune for a 60" HDTV so I could watch but a handful of channels on it.

Most of what I watch is not HDTV and I either can have a black square around what I view or choose to stretch the picture to fill the whole screen. Every actor gains 20 pounds if I use the latter approach, and I am sick and tired of paying more for a TV that, most of the time, makes my TV viewing experience worse.

The phone companies should supply 50 HD channels, or even more. If they did that, I would switch to IPTV tomorrow and never look back. I understand fully that, without HD content, this isn't possible, but Hollywood and content providers need to realize that HDTV will be the next big thing for the industry. They need to start putting out the programming. There certainly is an audience for it. The question is, how much more will people pay for more HDTV programming. I would say $20–$25 per month — about $1 per HD channel per month — is painless if you get another 20–30 HD channels. Hopefully, this can be a profitable idea for the phone companies.

Wireless Disruption

I think this year will see serious wireless disruption. In my life, I have witnessed many a technology look to replace Ethernet only to find out that Ethernet was an evolving standard that kept changing with the times.

So, instead of replacing Ethernet, we just kept upgrading it. No matter what new technology came onto the scene, it never gained traction.

History repeats itself and, if you picture WiFi as the wireless equivalent of Ethernet, then you can figure the technology will keep evolving as well to fight off the replacement technologies.

The phone companies should supply 50 HD channels. If they did that, I would switch to IPTV tomorrow and never look back.

In this case, I think WiMAX may be the technology that gets hurt by WiFi. Technology already exists to extend the reach of WiFi, but I anticipate this will be the year where we see a technology emerge that extends the range of WiFi in such ways that WiMAX loses its edge in many applications. Mesh networking may be this technology, but I imagine that WiFi's range can be extended to a few miles without too much effort, and mesh networks, coupled with long-range WiFi might eliminate the need for WiMAX in areas where it is feasible to pepper your access points.

Go To Table of Contents | Go To Ad Index

Introducing a new composition — Excel Switching and Brooktrout Technology have become Cantata Technology.

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Defined as a rich musical composition in which talents converge to create something truly unique, a cantata is a work far more innovative, integrated, and engaging than the sum of its parts. Introducing Cantata Technology — a company born from combining Excel, a leading provider of carrier class IP and TDM enabling solutions, with Brooktrout Technology, a leading provider of IP fax and media processing solutions. For you this means access to unrivaled, proven platforms for deploying innovative communications solutions.

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State of the Industry

I have been on a trade show tour recently and I can't tell you how excited I am to have chosen the VoIP industry as my home. There are more new products and innovations being announced daily and, everywhere you look, there is boundless optimism. More importantly, we're seeing real sales and profit from not only the vendors to the VoIP market, but the customers themselves.

I am seeing a revival in the contact center industry as well and companies like Mitel and Inter-Tel are announcing new contact center initiatives. These companies weren't traditionally entrenched call center players, but they are increasingly getting into the space.

In addition, IMS is taking off. I recently attended an IMS Forum meeting and it is exciting to see the level of optimism that exists in this space. Some of the companies to watch for in IMS are Sonus, Nokia, and Nortel, who are all jockeying for leadership position.

Where Does The TMC Community Meet?

If you have a calendar handy, please mark down these events right now, as you won't want to miss them. Exhibitors and attendees keep telling me that TMC events are the place to go if you are looking to purchase products and services, and vendors tell me they move more product on the show floor of TMC events than any other. I expect this trend to continue forever; TMC events have always been about the best ROI. Our shows help companies make purchasing decisions in an unbiased and objective fashion. Exhibitors and attendees compliment TMC events continuously and we salute you all for being part of the TMC communications community!

VoIP Demo (http://voip-demo.com) will take place August 8–10, 2006 at the Hyatt Regency in Santa Clara, CA. It will be a unique event in the world of IP communications. The highlight of the show will be live onstage demos of the industry's best products. In addition, exhibitors can exhibit in turnkey pedestals if they like.

You will be able to come to one event and see all the best products and services on the market. We expect many analysts and a heavy showing from the financial community. We have further teamed with Robins Consulting Group to put on the world's first IP Communications Business Summit. This event will bring the financial community and those looking to acquire with those looking to be acquired or to receive investment. For more information on being a part of this exciting new event, please contact Robins Consulting Group at 718-548-7245 or e-mail summitinfo@robinsconsult.com.

This is the first event of its kind, and is sorely needed to ensure that the best and brightest in our industry have access to the resources they need to grow. And the financial community can come together under a single roof to quickly and easily see the best companies in which to invest.

The above event will take place on the same dates and location as the VoIP Developer Conference (http://voipdeveloper.com), the world's only event focused on IP Communications Development. Avaya, Intel, and Texas Instruments are a few notable sponsors of this event and we are thrilled to be putting on the third successful iteration of this show.

I was just in San Diego and had a chance to see the exhibit hall for the upcoming Internet Telephony Conference & EXPO, October 10–13, 2006. The San Diego Convention Center is an impressive facility and I am astounded by all there is to do in San Diego within walking distance of the convention center.

In addition to this event, we will be co-locating the world's first IMS Expo in San Diego. Expect it to be very well attended.

IT EXPO has always been the only show in the world to devote a full day to education on VoIP peering. We have just completed three successful VoIP Peering Summits in a row. At the next IT EXPO, we will have a VoIP peering event, which will be much bigger than the traditional peering summits we have offered in the past. We will be teaming with the VPF and other peering vendors to educate you on this topic like never before. Please check my blog frequently at tehrani.com for details.

The San Diego Convention Center is an impressive facility and I am astounded by all there is to do within walking distance of the convention center.

We will also be launching Call Center 2.0 at this show. This event will focus on the next generation in contact center technology from IP contact centers to VoIP recording and more. There has never been a call center event like it! IT

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All hail the new guy.

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SAMSUNG

AT&T/BellSouth/Cingular Mega-Merger Is All About IMS

News Analysis By Robert Liu
TMCnet Wireless and Technology Columnist

The importance of the IP Multimedia Subsystem (IMS) architecture has never been more abundantly clear than when AT&T recently disclosed its mega-merger plans to combine forces with BellSouth and Cingular Wireless. Many analysts, in fact, think the prime motivator for the $67 billion deal was the promise of convergence (i.e., wireless bundling, integrated offerings, etc.) as opposed to the billions of dollars in potential savings that could be squeezed out in operating efficiencies.

"The reason that this deal was done and done now was Cingular. Cost effectiveness is a big benefit, but the main reason is Cingular. It's to create a vision for the customer," said Jeff Kagan, noted telecom analyst.

And those sentiments were echoed even in the executive suites of AT&T (news - alert) and BellSouth (news - alert) right on up to the front office, as evidenced by the March 6 conference call following the news.

"I believe when you look at our industry's development and at our industry's future, the merger we've announced is a very logical next step," declared AT&T Chairman and CEO Ed Whitacre. "It will improve our growth profile with increased exposure to wireless. It will create a strong national and global competitor better positioned to innovate and deliver new services to both businesses and consumers. It will give us a single unified ownership of Cingular Wireless with the industry's best combined wireless and wireline reach. And these factors will put us in a position to speed development of next-generation services that integrate wireless and wireline."

The appeal of IMS, a series of specifications outlined by the 3GPP cellular governing body, stems from the fact that, for the first time, the IT world can play under the same rules of the so-called "Walled Garden" model of the cellular realm by using a new common session control layer to control IP-based applications and services.

"This merger will help us accelerate technology evolution. We're on a migration path to converge to IP-based services. That's true in both consumer and business markets. And it's a migration that encompasses both wireline and wireless," explained Randall Stephenson, COO, AT&T. "We think there is significant opportunities in converged services, which allows customers to access content and applications across any of their three screens: wireless, CT or TV. This merger paves the way for faster progress in this key area."

From a service provider's perspective, IMS isn't simply a platform to deploy a suite of applications, no matter how "killer" the application might be. In fact, if network operators were to take on more of a tactical approach looking for particular instances to trial the platform, then perhaps AT&T could afford to rest on its laurels and possibly stall the deployment of IMS for the rest of the industry by sitting on its proverbial hands. But, as evidenced by Stephenson's opening remarks from the conference call, AT&T already has a full-scale strategy in place for the deployment of next-generation IP-based services.

"If you believe and embrace a strategic motive behind IMS, can you afford to wait? No. There are too many benefits for one to remain sidelined," explained Ronald Gruia, Program Leader of Emerging Communications Solutions at Frost & Sullivan.

In fact, AT&T, BellSouth, and countless others have already tried the one-off approach to bundling. Even by their own admission, those attempts have failed.

"I think, to date, an awful lot of the benefit of bundling has come in a single bill, simplifying the relationship. But, in terms of truly simplified integration of the functionality of the two products, with the exception of integrated voicemail and some of those kinds of things, it has not been that dramatic," said Mark Feidler, president and chief operating officer of BellSouth.

"And here again I think as we move to a more IP-based world facilitated with an IMS platform in place, you really do have the opportunity to give people the experience that a lot of companies have been talking about, which is

Go To Table of Contents | Go To Ad Index

"If you believe and embrace a strategic motive behind IMS, can you afford to wait? No. There are too many benefits for one to remain sidelined."

the benefit of any network, any device, any place kind of functionality in a simple way for the customer. And the combined assets of these three companies, I think, will be enormously well positioned to fulfill that promise that's been out there for a long time and, today, quite honestly, nobody's done a great job. I think this company is very well positioned to be the one that steps up and does that," Feidler added on the conference call.

AT&T's migration into IMS was inevitable due to a confluence of circumstances. VoIP and cellular penetration continues to accelerate access line erosion and eat away at the local and long distance revenue base. "All of this wouldn't have happened if the cable companies didn't move into telephone," Kagan told *INTERNET TELEPHONY*.

Yet, they did. Consequently, all of the incumbents have been forced to counter that assault by pinning their hopes on future technologies, like IMS.

"What AT&T wants to become is the link to your brain. They don't only want to be your communications company. They want to be your entertainment company," said Steve Dietch, worldwide marketing director of the OpenCall Business Unit at HP.

But analysts and industry participants concur that AT&T's entrance into IMS services isn't necessarily a bad thing. In fact, if one enormous buyer could influence deployments schemas, the rest of the industry could benefit by avoiding the fractionalization of semi-proprietary "flavors" of the IMS architecture.

"If there's one thing that's easy to forecast, it's vendor behavior in the sense of their appetite for introducing proprietary technology. They need to make their products more competitive. There's going to be a lot of SIP extensions. This is going to create havoc in the developer community because they will need to bone up on the different flavors," Frost & Sullivan's Gruia said.

"IMS will benefit down the road, because you don't have a fragmented approach to it," Dietch told *INTERNET TELEPHONY*. He serves as the HP's primary spokesman for IMS-related issues, adding that, "A lot of operators went with a semi-proprietary approach to their trial for IMS and will circle back for a standards approach down the road."

Based on Feidler's remarks, AT&T is taking no chances and is employing the unified approach.

"It's clear that all three companies have been exploring the possibility of using IMS as the fundamental platform for provision of services on their own network. And we, as three separate companies, were working on how we could integrate our IMS platforms to provide integrated services between the companies. The standards are pretty well established now. Fortunately, we had similar thoughts about how to utilize IMS. And the fact that we will all be on the same backbone network, the same instance of IMS, following the closing of the transaction, will just really simplify the process because we won't have to make multiple IMS platforms communicate with each other. Essentially we can do that all on a single platform," Feidler said.

To be sure, IMS also could also represent a double-edged sword for AT&T by opening a new can of worms in the form of increased competition. For example, Orange Wireless recently announced the rollout of business-class fixed-line service in the United Kingdom, going head-to-head with BT.

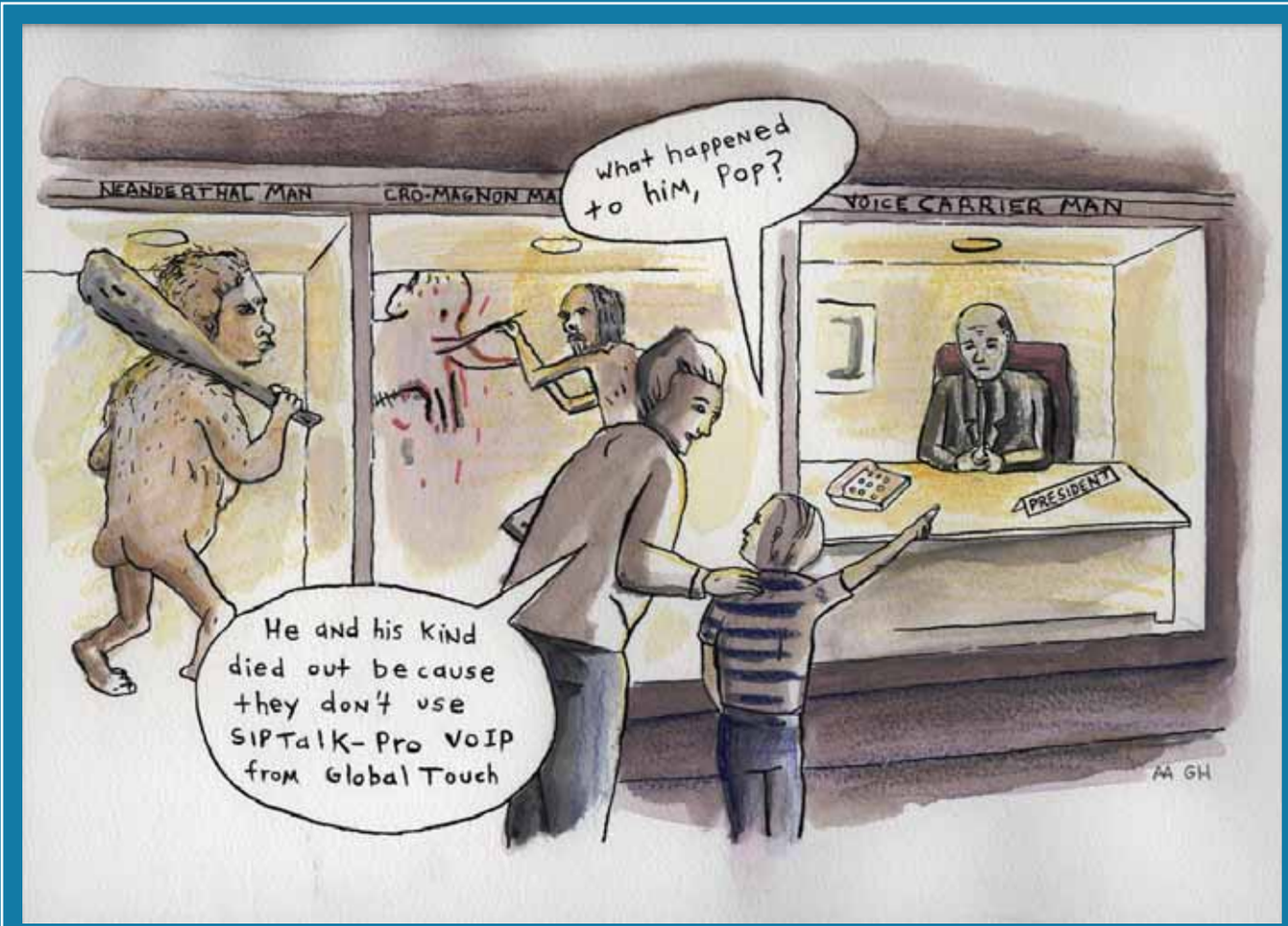
"From an IP perspective, it's once again a threat and an opportunity. By creating an IP infrastructure, you open yourself up to competition that wasn't previously there," HP's Dietch said.

However, not everyone agrees, as analysts like Gruia still see AT&T with the upper hand. "They are not relinquishing full control over their network. Fear that service providers will relinquish all control of their networks is a little bit exaggerated. There'll be some more control, more intelligence that comes from the endpoint, but it's not going to be a dumb network," he said.

While it remains too early to predict which ISV or service provider will ultimately win out, one clear winner has emerged: Lucent Technologies. Tim Horan, analyst at CIBC World Markets, believes AT&T's unified approach to IMS could mean additional work for the equipment vendor, which has already been contracted by all three companies to supply comprehensive IMS solutions. IT

Robert Liu is Executive Editor at TMCnet. Previously, he was Executive Editor at Jupitermedia and has also written for CNN, A&E, Dow Jones and Bloomberg. For more articles, please visit Robert Liu's columnist page.

Go To Table of Contents | Go To Ad Index



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Allworx Unleashes Key System Killer

By Greg Galitzine

Allworx (news - alert) has announced the newest member of its product line, the Allworx 6X. Targeted at the small to mid-size business community, the 6X is a multi-faceted business communications tool designed to support up to 25 users. The company seems very keen on positioning the product as a true "key system killer."

Various studies have shown that the smaller end of the SMB market has been underserved for years. Allworx is trying to amend that oversight by targeting this new product squarely at this market. And it appears they're seeing some early success.

Mark Rogers is a Sales Engineer for Tri-Tech International. Rogers had an old key system and needed to upgrade his phone system. Today, Tri-Tech is using a pair of Allworx 6X's at two different sites and has them networked together. When asked to explain why Tri-Tech chose the Allworx solution, Rogers told INTERNET TELEPHONY®, "We're a small multi-location sales organization and we were in desperate need of an updated phone system. The Allworx 6X was the best solution in terms of size, features, cost, and expandability."

The new offering from Allworx is actually three distinct tools rolled into one. The 6X comprises a full-featured phone system, a network server, and the Allworx message center.

The system was designed to be easy to use and administer, so busy entrepreneurs can focus on running their businesses — not managing their phone system. Furthermore, the resellers who are tasked with installing the 6X can take advantage of a wizard-based installation process that enables them to install the system and get their customers up and running in a matter of hours, not days.

Another element of the launch that Allworx pointed out to me is the pricing. Allworx claims to offer the lowest installed cost of any fully-featured VoIP system and PC network, and at a $400–$435 per user installation cost — including all hardware and installation — they may just be on to something. The pre-market literature I saw showcases a litany of cost-related savings for the customer:

- No additional hidden charges for connection to VoIP, site-to-site and remote user connections, unified messaging, or any other VoIP features.
- One time unlimited user license fee no matter regardless of how many users are added at a later date.
- No third-party hosting fees for Web site.
- No per user license fees for software.
- No limitations on voicemail access when you use the external hard drive.
- No additional charges for firewall, e-mail server, file server, and PC network server.
- Use most of your existing phones so you can save money by not buying everything new.
- Easy connection to Internet Service Providers (ITSPs) so you can immediately

Go To Table of Contents | Go To Ad Index

save on long-distance calls anywhere.

Regarding the features of the phone system, the 6X offers all the usual PBX and key system features in addition to support for analog and IP phones at the same time. The Allworx solution offers the following key features:

- **VoIP** — Save money on long distance calling.
- **Site-to-site calling** — Eliminate inter-office call charges and keep up to 100 remote/branch sites connected.
- **Voicemail** — Virtually unlimited message storage; up to 16 people can access messages simultaneously.
- **DID** — Direct inward dialing allows each extension to have a direct number.
- **Call routing** — Customized call routing allows users to route their calls to follow them or forward to another extension.
- **Presence Management** — Seven unique states makes sure coworkers and callers alike know your status and availability.
- **Unified Messaging** — All messages (voicemail, e-mail, meeting requests) can be viewed form a single unified inbox. Additional text to speech functionality lets users review and respond to voice messages via e-mail.

Other features include the remote user functionality, customizable dialing plans, auto attendant, call tracking, conference calling for up to three, three-way conferences using analog phones (IP phones can each support up to eight seats in a conference bridge), call queues, and more.

The network server combines a full suite of networking needs into the product, including LAN network server, WAN/Internet access, Firewall, E-mail server, Full VPN support, Spam blocker, Fax support, as well as several other business networking functions.

The Allworx Message Center was designed to be a group calendaring application featuring contact management and information sharing applications. The 6X is TAPI-compliant, which instantly makes the Allworx solution compliant with any number of contact management solutions. Users can receive e-mail and voicemail and check them through a single unified interface. The system is compatible with Microsoft Outlook and Outlook Express.

Rogers explained how the Allworx product has helped Tri-Tech achieve their business objectives. “[the decision]… has allowed us to seamlessly link our customers and suppliers with our various sales offices at a very affordable price,” he said. “We’re very satisfied with our decision to deploy Allworx.”

Allworx is following up its release of the Allworx 6X by pre-announcing the June availability of the Allworx Call Assistant software add-on for the 6x. The Allworx Call Assistant is a live answering position that works in conjunction with any Allworx phones. The software price for this option is currently set at $320 for the 6X and is based on a one-time fee per system for unlimited number of users (no per seat license charges).

http://www.allworx.com

Quintum, Intel Empower ISVs, OEMs with Gateway Bundle

By Michelle Pasquerello

VoIP gateway provider Quintum Technologies (news - alert) has empowered service providers with a cost-efficient way to bridge legacy telephony systems with next-generation networks that can support a myriad of new applications with the recent introduction of its Gateway bundle, tied to Intel NetStructure Host Media Processing (HMP) software.

The bundle, introduced earlier this month, is comprised of Quintum's Tenor AS and BX lines of gateways and switches as well as Intel's NetStructure platform. Targeted towards independent software vendors (ISVs) and original equipment manufacturers (OEMs), the bundled offering is available through value-added resellers such as Paracon.

The bottom line with HMP technology is flexibility, Quintum officials said. By utilizing HMP technology, developers put forward services that are not only cost-effective, but scalable for developing applications. The combination of Intel HMP software with Quintum's switches and gateways helps complete the line of network access solutions.

"Utilizing the HMP platform and connecting into both future and legacy networks really provides the opportunity for a lot of applications to be developed," Chuck Rutledge, vice president of marketing for Quintum Technologies told TMCnet in an interview. "What HMP brings to the table is that ability to have these pre-packaged modules of telephony functions that can be assembled very quickly in a relatively inexpensive way. It provides an environment that people can be creative with."

HMP software from Intel performs media processing tasks on a general-purpose computing architecture without the use of specialized hardware. When installed on a system, the software acts like an Intel Dialogic board with DM3 architecture to the customer application.

"The real benefit is that the HMP platform provides a flexible platform for developing applications. Together, the pair can provide a very flexible platform because the Quintum Tenor is designed as a multipath switch as opposed to a gateway. The HMP can leverage the strength of the Tenor to really enhance the overall applications that can be created on that platform," said Rutledge.

According to the company's release, ISVs and OEMs will profit by using Quintum's switches and gateways with HMP software by rapid product development. Between the different scales of servers and the different sizes of Quintum devices, developers can address a wide range of applications: IP-PBX, Contact/Call Center Applications, Messaging, IVR Services, Conferencing, and SMS Services.

"Quintum has such a broad range of increments. We go from 2 to 48 in relatively nice increments and 48 is certainly the top of what you can find in terms of capacity on an analog VoIP device. One great aspect about HMP is I just have to scale up my server for more capacity," noted Rutledge.

In terms of convergence, the real value is in applications. With a broad range of applications offerings, providers gain competitive edge over the market and enhance the productivity of their workforce.

"The function that we provide at the edge of the network is the complete aspect of addressing the concerns that any kind of converged application is going to face at the edge of the network. It's going to need to be able to provide productivity to all of the legacy equipment inside, out to the PSTN," concluded Rutledge.

http://www.quintum.com

Go To Table of Contents | Go To Ad Index

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Whaleback's VoBB Managed Service for SMBs

Whaleback Systems (news - alert) announced its managed business phone service expressly designed for the needs of Small and Medium Businesses (SMBs). Whaleback offers the CrystalBlue Voice Service that provides SMBs with access to rich VoIP functionality that businesses can leverage via a simple broadband cable or DSL connection.

Whaleback's all-inclusive, flat-priced service package makes the most advanced business telephony technology immediately affordable for small and midsized businesses — without the operational hassles of maintaining equipment. Whaleback has leveraged cutting-edge technologies and the latest industry standards to engineer a simple, yet powerful and feature-rich business phone system that transports voice signals over a broadband connection.

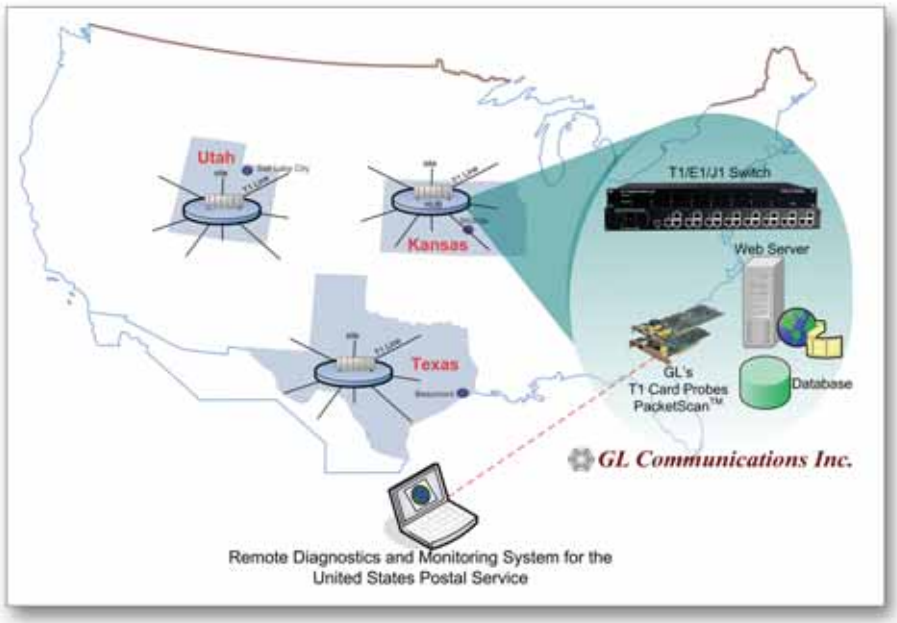
The Whaleback SMB 1500 is the cornerstone of the service. It transports voice signals over broadband connections via native SIP trunks to drive down recurring bandwidth charges. Unlike IP Centrex and alternative PBX solutions, the SMB 1500 is premises-based and software-driven to simplify system management, enhance call quality and optimize network performance. It is deployed at an SMB's location and connected to an SMB's Ethernet network. The SMB 1500 offers linear, pay-as-you-grow scalability so SMBs can support up to 1,500 phone stations.

http://www.whalebacksystems.com

GL Communications begins Deployment for the USPS

GL Communications Inc., (news - alert) a leading provider of test and measurement solutions for TDM, VoIP, and Wireless networks, announced the start of a nationwide deployment of a Digital (T1) Line Monitoring, Test, and Diagnostic System for the United States Postal Service (USPS).

GL's solution for USPS features an instant overall view of the health of the entire network with the ability to successively drill down to individual T1 lines. Maintenance engineers can securely access the network view from literally "anywhere" that Internet access is available. They can also monitor, diagnose, and troubleshoot any T1 line remotely with simple to use scripts. The system can also monitor USPS's "Ethernet" traffic at all USPS hub locations.



Other features of the T1 Line Monitoring, Test, and Diagnostic System include fail-safe operation during power disruptions or element failure, a central database for historical performance data, USB controlled passive / intrusive T1 switches, T1 probes for monitoring and intrusive testing, TCP/IP communication to a central collection station, and a secured database and Web server accessible via the Web. Any authorized PC with an Internet browser can access the Web server to obtain status of USPS's network or perform diagnostics on T1 lines — all remotely.

http://www.gl.com

Go To Table of Contents | Go To Ad Index

U of Miami Chooses Interactive Intelligence's Communité

By Mae Kowalke

University of Miami announced that it chose Interactive Intelligence's (news - alert)Communité PBX software package to manage its campus communications system because of the software's ability to manage a hybrid VoIP and TDM PBX system.

Using Communité, the school has been able to increase the productivity of its staff, and reduce costs associated with running a campus-wide communications system.

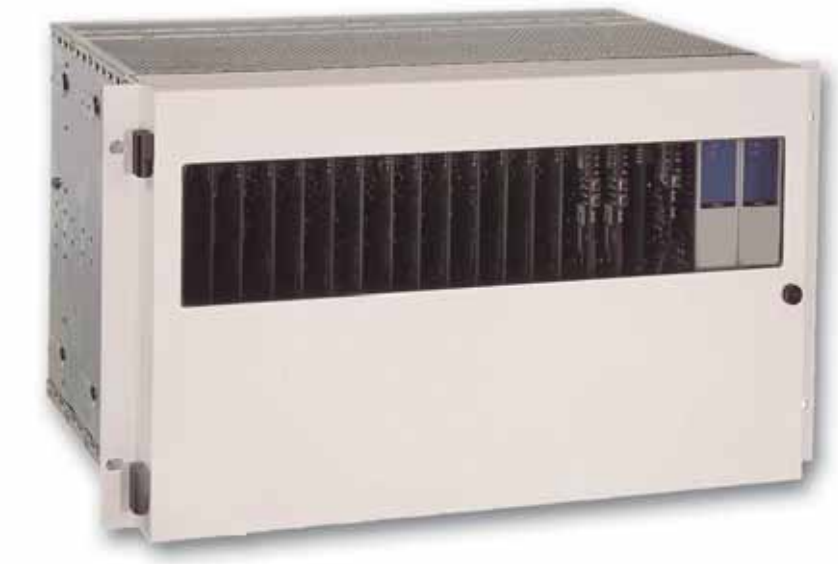
With Communité, the school manages about 10,000 voice mail boxes used by administrative, hospital and clinical staff, and faculty, among others. Those boxes now include unified messages functions, including the ability to view and listen to messages using a Web browser.

http://www.inin.com

Teledata Networks' Introduces All-IP Version of BroadAccess

By Patrick Barnard

Teledata Networks (news - alert) introduced an all-IP version of its BroadAccess Multiservice Access Gateway for delivery of triple play services over Ethernet architecture. The new gateway enables service providers to make a smooth transition to next generation services while maintaining their existing infrastructure.



"The new release of BroadAccess was crafted to help today's service providers cope with the dilemma of rebuilding or leveraging their legacy networks to accommodate the new technologies," said Eli Lotan, CTO, VP R&D, Teledata Networks. "With BroadAccess, they can easily and cost-effectively migrate to IP and generate new revenue channels."

Teledata Networks is an established global provider of innovative Access Network solutions that enable smooth migration to Next Generation Networks (NGN) and delivery of triple play services. The company tailors unique solutions for telecom operators and services providers in accordance with their needs, to enhance their competitive edge.

http://www.teledata-networks.cn

ADTRAN Enters IP PBX Market

ADTRAN, Inc., (news - alert) a supplier of IP-based networking solutions announced that the company is expanding its Voice over IP portfolio by entering the customer premises-based IP PBX market with the launch of the NetVanta 7100.

ADTRAN's initial IP PBX offering will consist of the NetVanta 7100, a unique VoIP "office-in-a-box" solution that integrates voice, data, high-speed Internet, and security functionality in a single, compact platform. This solution will be complemented by a full line of phones, including desktop, attendant consoles, and conference models as well as an IP SoftPhone for laptop/computer telecommuters and other accessories. Future plans include expanding this product offering to address larger enterprise customers, globalization of the product line, and the introduction of additional advanced features.

http://www.adtran.com

Ingate Intros Firewall 1900 and SIParator 90

By Johanne Torres

Ingate Systems (news - alert) introduced the Ingate Firewall 1900 and Ingate SIParator 90. The products are a are designed for large corporations wanting complete support for IP communications based on SIP, including VoIP, IM, and video applications. They solve the Network Address Translation (NAT) traversal issues inherent in SIP communications, and allow for both far and near-end NAT traversal to extend the SIP capabilities within the corporate network to remote workers.

Both products feature Ingate's SIP proxy technology, which delivers control over SIP signaling, traffic and network security, creating a converged network for both data and VoIP. With Ingate products, enterprises can use VoIP and other live communications on the LAN and globally over the Internet or private IP networks.

Both the Ingate Firewall 1900 and SIParator 90 have eight interfaces. Two of these are mini Gbic that can be used for fiber optic interfaces giving greater flexibility and offer 2600 Mbit/s throughput. The new products are capable of handling 1200 concurrent VoIP calls (e.g. RTP sessions).

http://www.ingate.com

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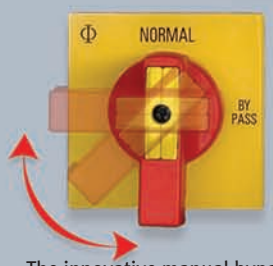

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Sphere Announces Release 5 Sphericall for IP PBX

By Michelle Pasquerello

IP PBX software provider Sphere Communications (news - alert) announced the general availability of its Release 5 Sphericall, the latest installment of its next-gen software for IP PBXs.

Offered as an open, enterprise softswitch application, the Sphericall IP PBX is a fully distributed software solution that scales up to 30,000 ports across multiple locations. The new Sphericall release features communications Web Services for business application software integration, SIP trunking and expanded SIP device support, software-based call recording and Assured Services.

"Now, applications developers, ISVs and OEMs can very easily embed communications functions into critical business processes without the need for extensive telecommunications expertise," says Todd Landry, Sr. Vice President, Sphere Communications. "Rather than brute force, application-to-application integration through cumbersome telephony API's, Sphericall Web Services offer a dramatically easier and more flexible integration process that aligns with enterprise software development standards and Service Oriented Architecture initiatives."

Release 5 SphericallT is currently available at $199 per access license.

http://www.spherecom.com

Newport Networks and MetaSwitch Deliver Interoperable, Future-proof IMS Solutions

Newport Networks' (news - alert)1460 Session Border Controller has been certified as interoperable with MetaSwitch's (news - alert)next-generation Class 4/5 softswitch and applications solutions following jointly conducted interoperability testing. Both vendors' platforms support the IP Multimedia Subsystem (IMS) architecture for future-proof wireline and wireless network solutions.

MetaSwitch's Class 4/5 Softswitch delivers unparalleled calling features and routing capabilities in a true carrier-class platform. Ranging from a rapidly-deployable single-chassis switch up to a fully distributed 500,000-subscriber network, MetaSwitch scales to fit service provider networks of every size.

Newport Networks' 1460 Session Border Controller provides industry-leading capacity and scalability, comprehensive security, regulatory compliance and extensive Quality of Service (QoS). The companies share a focus on enabling profitable migration to infrastructures based on the evolving IMS standards.

Within the IMS network architecture, MetaSwitch's solutions implement Serving Call Session Control Function (S-CSCF), SIP Application Server (SIP-AS), Multimedia Resource Function (MRF), Media Gateway Control Function (MGCF), Media Gateway (MGW), and Signaling Gateway (SGW).

At the subscriber edge of the core network, the Newport Networks 1460 Session Border Controller provides the IMS Proxy Call Session Control Function (P-CSCF), TISPAN Service Policy Decision Function (SPDF) and the TISPAN Interconnect Border Control Function (IBCF).

http://www.newport-networks.com
http://www.metaswitch.com

NEC Unified Solutions Expands Services Offerings

NEC Unified Solutions, Inc. (NEC) (news - alert) announced the availability of two new managed services offerings: NEC Secure Remote Management Services and NEC Secure Threat Management Services. Designed for the small-to-medium business (SMB) and enterprise markets, these solutions improve network management and reliability while mitigating security risks and bolstering customers' network security posture.

Together, NEC's latest offerings ensure application and hardware availability by taking proactive measures to monitor and assess potential network issues and threats and enable NEC to assist customers throughout all phases of the IP migration process. The new services provide end-to-end assistance through the assessment, provisioning and integration, monitoring and proactive management and issue resolution for network and security events that occur in any organizations' business-critical voice and data networks.

NEC's Remote Management Service enhances network performance and availability by monitoring each component of an organization's infrastructure including devices, servers and applications. The offering eliminates the need for businesses to increase capital expenditures all while reducing operational costs and offloading maintenance and upgrades.

NEC's Threat Management Services effectively extends the security capabilities of customers' IT staffs through continuous monitoring of routers, security devices and Internet data traffic.

http://www.necunified.com

Sonus Unveils Strategy For FMC

Sonus Networks, Inc. (news - alert) unveiled its standards-based solution for enabling subscriber roaming between wireline and wireless environments (Fixed/Mobile Convergence or FMC). The Sonus FMC solution allows network operators globally to deliver a seamless, consistent and portable experience for end users.

Taking advantage of the penetration of WLANs, Sonus' FMC solution allows network operators to provide secure and personalized mobile broadband services, including voice, video, data and other multimedia services over a converged network that leverages the advantages of both mobile networks and WLAN hotspots.

The Sonus FMC solution is based on the emerging standard protocols as defined by the 3GPP and includes a combination of its IMS-ready architecture and elements from its partner program, the Open Services Partner Alliance (OSPA). The Sonus FMC solution will support the delivery of advanced voice and data applications, which will allow operators to offer services to enterprises across wireline or wireless, narrowband, wideband or broadband, business or personal network connections. The Sonus FMC solution will be interoperable with second-generation (2G) and third-generation (3G) mobile networks and enable a smooth migration to IMS compliance and an all-IP architecture.

http://www.sonusnet.com

MetaSolv Launches Mediation 5 to Support 3G, IMS, and Triple Play

MetaSolv Software, Inc., (news - alert) a global leader in comprehensive operational support system solutions for next-generation communications service providers, announced the release of Mediation 5, MetaSolv's carrier-class mediation application designed for multi-service 3G wireless, IP, VoIP and traditional voice networks.

Mediation 5 provides the ability to support service provider's revenue assurance processes-enabling the detection, correction and assurance that all billable activities are accurately captured, rated and billed. Mediation 5 also provides significant capability to support IMS deployments — a critical component in enabling next-generation IP services and fixed/mobile convergence. MetaSolv's mediation solution is embedded as part of a major network equipment manufacturer's IMS solution offering and is currently in trial with a Tier 1 mobile service provider.

MetaSolv mediation enables multi-service revenue generation over both fixed and mobile networks supporting a variety of services including voice, VoIP, data and IPTV. This solution provides productized support for leading hardware and application vendors including Cisco, Ericsson, Nortel and Microsoft and is deployed at over 30 communications services providers worldwide including tier one operators such as mobilkom, O2 and T-Mobile.

http://www.metasolv.com

Go To Table of Contents | Go To Ad Index

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Both executives and IT management have come to rely on Microsoft solutions for managing their business applications and corporate data. Their objectives for a phone system, however, have historically been limited to a choice of proprietary systems, completely separated from their Microsoft business platform.

But now there's a 100% Microsoft-based IP Telephony solution that gives business executives what they want...and IT directors what they've been waiting for. Finally.

Enterprise Interaction Center® (EIC) is a fully pre-integrated, IP phone system that converges voice on the Microsoft Windows Server Platform, including Exchange Server for unified messaging, an Outlook® Telephony Console, and complete integrations with Microsoft® Business Solutions, such as Great Plains® and Microsoft CRM.

EIC's integrated Windows®-based solution for converged voice and data makes your decision for a new phone system easy.

- Executives get a solution that lowers costs, optimizes employee productivity, provides integrated communications for their mobile workforce, enhances their Microsoft investment, and helps them gain that all-important "competitive advantage."
- IT Managers simply get a solution that relieves headaches associated with separate proprietary voice and data networks. EIC is a complete Voice over IP communications solution based on Windows Server, using open SIP standards, with out-of-the-box business application integrations, and centrally administered with familiar Windows-based administration tools. *"Finally!"*

Enterprise Interaction Center. All communications.
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Vonexus is a wholly-owned subsidiary of Interactive Intelligence Inc.®

BroadSoft Mobile PBX Application Powers Mobile Offerings

BroadSoft, Inc., (news - alert) the leading provider of VoIP application software, announced that new deployments of the BroadWorks Mobile PBX application give major mobile operators around the world the ability to deliver an enterprise communications solution. BroadSoft's Mobile PBX application is unlocking the enterprise market for its mobile operator customers and trial deployments.

Mobile operators using the Mobile PBX application increase value to end users, thereby increasing minutes used on the mobile network and ARPU across the enterprise. Major service providers in Europe, North America, and Asia are using the Mobile PBX application to offer new productivity and mobility communications services to enterprises. Mobile operators are deploying BroadSoft to enter the largely untapped mobile enterprise market through BroadSoft's strong channel relationships for IMS solutions.

http://www.broadsoft.com

Thomson Launches Mobile IP Centrex Application for its Cirpack Softswitch

Thomson (news - alert) announced the launch of Fixed/Mobile Convergence capabilities for its Cirpack (news - alert) VoIP softswitch and IP Centrex platforms. Telecom service providers can now promote innovative telephony including the best of fixed and mobile services, to create new opportunities for increased revenues from enterprise sales.

Mobile operators using Thomson's Cirpack IP Centrex platform can start marketing global telephony solutions, offering all the features of hosted PBX solutions, without forcing users to change their mobile handsets. The result is a single service with one phone number and one voicemail box shared by the customer's cellular and broadband IP phones. Subscribers can now enjoy a rich set of features across both devices, including simultaneous ring, call filtering, extension dialling, multiparty conferencing, hunt groups, and more.

Thomson's Cirpack platform is a highly modular and scalable public telephony switch, incorporating all the software and hardware components required to connect to and interwork with the legacy telephony systems telecom service providers are operating. It has native support for protocols used in GSM infrastructures, enabling seamless integration with existing HLR, MSC and Intelligent Network platforms to ease the introduction of innovative services that also leverage Cirpack's VoIP and IP Centrex capabilities.

http://www.cirpack.com
http://www.thomson.net

Go To Table of Contents | Go To Ad Index

XO Communications Expands Business VoIP Services Bundle

XO Communications, Inc. (news - alert) announced enhancements to XOptions Flex, its VoIP services bundle, that enable small and medium-sized businesses with larger offices to take advantage of the cost-savings and flexibility of VoIP.

XOptions Flex is a VoIP services bundle for businesses that combines unlimited local and long distance calling, dedicated Internet access, and Web hosting for a flat monthly price. XOptions Flex leverages the latest in VoIP technology to provide customers with advanced capabilities such as unlimited voice calling, dynamic bandwidth allocation, voice virtual private networking (VPN), and a simple Administrative Web Portal.

The new enhancements expand the market for XOptions Flex by extending its availability to include businesses with up to 160 employees at each location — a market that spans more than four million businesses nationwide with an annual telecommunications spend of $50 billion. Mid-sized companies can now utilize XOptions Flex with their existing private branch exchange (PBX) or digital key systems that are connected to an Integrated Digital Services Network (ISDN) Primary Rate Interface (PRI) or digital trunk, allowing customers to take full advantage of XOptions Flex's IP-enabled capabilities and features without having to replace their existing phone systems.

http://www.xo.com

Triton Technologies Brings Broadband VoIP to its Customers

By Patrick Barnard

Michigan-based Triton Technologies (news - alert) has launched TritonVoice, its VoIP service for its broadband customers.

"The phone service of the future is here, today," said Dennis Gramza, Triton's VP of sales and marketing. "The lower cost, plus the multitude of features should be attractive to everybody. This new technology allows anyone with a broadband Internet connection to save a lot of money by dropping their traditional 'land line' phone service. I like the fact there are no irritating taxes and fees on our phone service. Far too many times people have switched phone companies for what appeared to be a lower price, only to discover all those hidden charges when the first bill comes in. The price you see with us is the price you get."

Triton Voice requires a cable, DSL, or T-1 Internet connection. Users can also keep their current phone number and phone equipment.

http://www.tritonvoice.com

Panasonic Users Can Walk, Talk, and Watch TV

By Erik Linask

Panasonic (news - alert) has begun delivery of its FOMA P901iTV mobile handsets to NTT DoCoMo, Inc. (news - alert) The P901iTV is the first mobile handset to receive terrestrial digital broadcasting signals in addition to conventional analog signals.

The handset's main display is a 2.5-inch widescreen LCD. It can provide approximately three hours of continuous digital TV viewing before requiring recharging — it can provide about one hour of analog viewing. The P901iTV allows users to enjoy services that blend mobile communications and broadcastings. For instance, when watching a TV program, users can go to Web sites related to the TV program simply by clicking the URL on the display.

The P901iTV focused on user-friendly features that customers value the most. By turning the highly flexible antenna towards the right angle, users can enjoy watching TV programs. It can also let you watch TV both vertical and horizontal angles. Depending on the handset angles, the P901iTV display screen automatically rearrange its direction.

The unit also comes with a built-in 2.02 megapixel digital still camera, and is ompatible with a variety of interchangeable faceplates. Fashion-conscious users can download display images and graphics coordinated to match the faceplates.

http://www.panasonic.com
http://www.nttdocomo.com

IBC Launches VoIP

By Cindy Waxer

IVI Communications' subsidiary Internet Business Consulting has entered today's increasingly crowded VoIP market with the launch of its own VoIP service. Residences and businesses with a high-speed Internet connection can now place unlimited local and domestic long distance phone calls in a variety of domestic and international locations for one flat rate.

According to Charlie Roodenburg, IVI Communications' CFO, "ISPs wishing to resell IBC's (news - alert) VOIP product and service offerings can do so immediately. There is no capital expense required. We offer free customer equipment with setup. This program has significant promise as a revenue generator and profit center for the overall company."

http://www.ibconsulting.com

Secure enough to deploy VoIP?

Yes or know.

As you evolve to an IP telephony environment, you need to know how to mitigate the unique security risks it poses—without sacrificing voice quality. NetIQ's end-to-end VoIP Management is the answer. By approaching VoIP as an integrated service, NetIQ's solutions manage the overall performance, availability and security of your VoIP environment so everything works together smoothly and effectively. As a leader in systems and security management, NetIQ is uniquely qualified to show you the way forward with VoIP.

Knowing is everything.™

netiq

www.netiq.com/VoIP

Y-Tel and 5G Agree to Terms for WiFi Deployment

By Erik Linask

Y-Tel International, Inc. (news - alert) announced it has finalized its deal with 5G Wireless Communications, Inc. (news - alert) for the deployment of Y-Tel's Wireless Broadband Internet network. This is important because Y-Tel is a telecommunications, VoIP, and WiFi services provider with a stated goal of becoming one of the leading providers of WiFi Internet Services and VoIP calling solutions within the next few years

Y-Tel has tested a mesh network previously and concluded that a better option is an NLOS (non-line of sight) technology utilizing the 2.4 GHz wireless range. Which is why Y-Tel selected 5G Wireless Communications, Inc. — its newly developed G Force technology. Specifically, G Force utilizes NLOS technology, including the use of base stations along with proprietary high gain antenna technology using an industry standard WiFi platform.

The advantages of G Force include:

- Decreased networking complexity;
- Reduction in cabling and electrical drops;
- Minimal channel management problems and interference.

Y-Tel, which is currently generating revenues from customers in the Caribbean, Central and South America, and APAC — because these regions are underserved yet growing telecom markets — is planning to launch its first Wi-Fi Internet Service network in the next few months.

http://www.ytelwifi.com
http://www.5gwireless.com

Magnet Entertainment to Deliver IPTV in Europe Using Ruckus' 'Smart WiFi'

By Patrick Barnard

Magnet Entertainment, (news - alert) a provider of broadband services in Ireland, has reportedly selected Ruckus Wireless' "smart WiFi" technology to deliver IPTV in Europe.

The Ruckus Wireless (news - alert) system allows customers to enjoy IPTV and other next generation services without installing additional cabling in their homes. Ruckus claims the "plug and play" system takes only minutes to install. Users simply connect a Ruckus adapter to their Amino set top box using an Ethernet cable. The Ruckus adapter automatically registers with the Ruckus access point — and the system then "self-tunes" based on the given wireless environment.

Ruckus claims its smart WiFi system is the only carrier-class platform built to provide simultaneous support for IPTV, digital voice, and data over 802.11g technology. The system identifies and prioritizes different types of traffic and then finds and uses the best WiFi signal path for transmission. If any interference is detected, the system can automatically steer the WiFi beam around the interference to ensure the highest reliability of each transmission.

http://www.ruckuswireless.com
http://www.magnet.ie

Go To Table of Contents | Go To Ad Index

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T-Mobile Germany Offers Seamless Mobile BB with Nortel Wireless Solutions

Nortel (quote - news - alert) has been selected to expand T-Mobile's wireless (news - alert) core network with new capabilities designed to bridge the operator's commercial UMTS wireless network with WiFi networks to provide seamless communications for subscribers. This is expected to be the first commercial deployment that supports seamless broadband mobility across 3G, EDGE, GPRS and WiFi networks in Europe.

T-Mobile will offer the new service to customers using laptops and dual mode PDAs, such as the T-Mobile MDA Pro, beginning Summer 2006.

With this deployment, enterprise customers can enjoy "Always Best Connected" access to new data and multimedia/SIP-based services beyond voice, including video calling, video conferencing, short messaging service, instant messaging, e-mail, Web access — all from one device and one phone number — with no interruption to their communication session. It will also enable T-Mobile to better manage customer billing information across networks so that end users can receive one, consolidated bill.

The new capability is made possible through the integration of existing Nortel's Gateway GPRS Support Node (GGSN) with Azaire Networks' IP Converged Network Platform (IP-CNP). Azaire's IP-CNP provides an integrated hybrid network by extending the services from the existing 3G and GSM core network investments over new access technologies like WiFi and WiMax.

http://www.t-mobile.com
http://www.nortel.com

Bring Your VoIP Phone Number with You

By Patrick Barnard

A partnership between D2 Technologies (news - alert) and Accton Technology (news - alert) has resulted in the first portable WiFi router with VoIP capabilities.

By integrating D2 Technologies' vPort VoIP software into Accton's VG2211i Wireless Personal Gateway, the two companies claim to have created the first gateway which lets you travel and take your VoIP phone number with you wherever you go.

Accton's portable gateway is the first of its kind to be based on softDSP VoIP technology. The vPort software runs on a MIPS4Kc-based WiFi router SoC (System on a Chip), which is the functional heart of the gateway. By integrating a VoIP Analog Telephone Adapter (ATA) into the gateway, users can take along their VoIP phones and "plug in" whenever, and wherever, they want.

Traditional VoIP gateways incorporate a DSP chip or core for voice processing functions, however, D2's vPort softDSP implementations enable the voice functions to run on a MIPS or ARM RISC processor, removing the need to add a DSP chip or core when VoIP functionality must be added to a device.

http://www.d2tech.com
http://www.accton.com

Thalys launches WiFi onboard high-speed trains

(news - alert) After an eight-month trial by 21Net and Colubris Networks, WiFi Internet access will become available on Thalys high-speed trains.

21Net, a satellite Internet access operator, and equipment supplier Colubris Networks are providing the network and equipment for the service. European rail operator Thalys connects France, Belgium, the Netherlands and Germany.

The solution, which is claimed to enable Internet access at ADSL speeds, was installed onboard a pilot Thalys train from April to December.

In the trial, the 21Net satellite antenna connected to the Colubris wireless LAN, enabling passengers to send and receive emails as well as access corporate networks securely using encrypted WiFi access points. The system also allowed passengers to watch films and services such as the news.

http://www.thalys.com

AT&T Expands McDonald's WiFi Service in Austin

By Johanne Torres

AT&T Inc.'s (news - alert) WiFi service is now available for subscribers, including non-AT&T customers who register for a WiFi membership package, at more than 40 McDonald's restaurant locations in Austin.

The AT&T WiFi coverage area includes thousands of McDonald's restaurants nationwide, now totaling more than 40 in Austin and more than 360 across Texas. Additional AT&T deployment efforts have enabled WiFi service at Barnes & Noble bookstores, coffee shops, Avis rental car locations, The UPS Store and Mail Boxes Etc., airports, hotels, convention centers, state parks and entertainment arenas.

http://www.att.com

Go To Table of Contents | Go To Ad Index

Tadiran's Coral IPx Office.™

You can survive VoIP with a smart solution.

For the last 40 years Tadiran Telecom has been quietly solving the telecommunication needs of the world's largest organizations. The Coral IPx Office™ is designed to provide flexible voice and data in a single box. Perfect for a 100-user corporate office or a 5-user branch office. Use your favorite SIP phone or Tadiran's FlexIP feature phone. Survive the migration to IP.

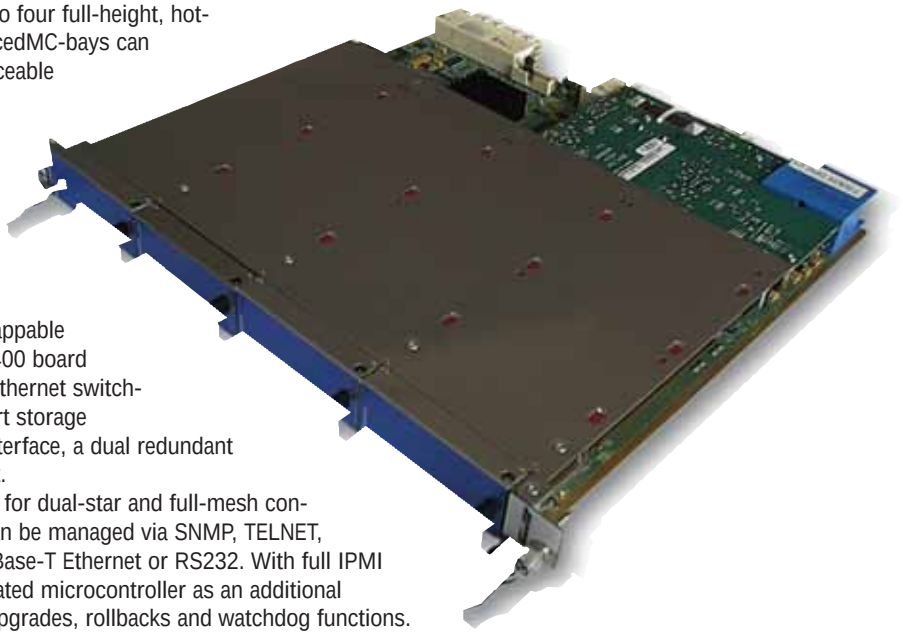
For a free "IP Survivability" T-shirt and more information on Tadiran Telecom solutions, call us at 866-595-4900 or visit us online at:

TadiranAmerica

www.tadiranamerica.com

Kontron Rolls Out Highly Anticipated AdvancedTCA Carrier Board

Kontron (news - alert) introduced the availability of the AT8400, an AdvancedTCA carrier board that supports up to four full-height, hot-swappable AdvancedMC modules. The AdvancedMC-bays can be populated with a wide variety of field-replaceable modules, such as Processor-AMCs, Storage-AMCs and telecom specific I/O-AMCs. With this flexibility, the AT8400 significantly simplifies and expands the design options available to telecom and network equipment manufacturers planning to design systems using open modular communications platforms.

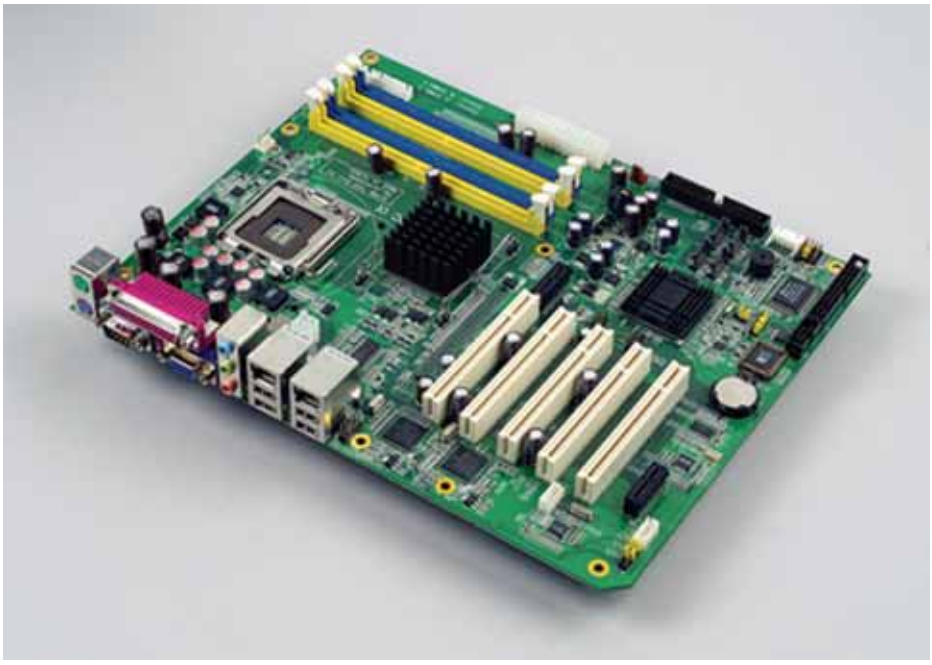


In order to support a wide range of hot-swappable AdvancedMC module configurations, the AT8400 board features an entire PCI-Express and a Gigabit Ethernet switching infrastructure, an SAS controller to support storage AdvancedMCs, as well as a redundant base interface, a dual redundant fabric interface, and a telco clock for each slot.

Fully hot-swappable, the AT8400 is suitable for dual-star and full-mesh configurations in 14- and 16-slot systems, and can be managed via SNMP, TELNET, CLI, either In-band or out-of-band via 10/100Base-T Ethernet or RS232. With full IPMI 1.5 support, the AT8400 also features a dedicated microcontroller as an additional Firmware Update Manager (FWUM) for field upgrades, rollbacks and watchdog functions.
http://www.kontron.com

Advantech ATX Motherboard AIMB-760 Brings Superior Computing Capability

Advantech (news - alert) unveiled a new Intel Pentium 4 processor-based industrial ATX motherboard, AIMB-760. Built-on Intel LGA775 architecture, the AIMB-760 features optimal computing speed up to 3.8 GHz and supports high capacity dual channel DDRII 400/533 memory. It also comes with advanced I/O capabilities such as dual PCI Express Gigabit Ethernet, four Serial-ATA devices, and eight USB ports. With flexibility for card expansions and long term support, the AIMB-760 is best fit for customers who are using off-the-shelf products but require industrial features for data intensive business applications.



To satisfy expansion capacity requirements for industrial applications, the AIMB-760 comes with five 32-bit, 33-MHz PCI slots and one PCI Express slot for legacy or advanced add-on cards. The AIMB-760 provides an exciting intensive industrial network solution that implements PCI Express host interfaces for dual Gigabit LANs. Each PCI Express x1 bus offers up to bandwidth of 500 MB/sec which eliminates bottleneck of network data flow and incorporates Gigabit Ethernet to operate at 1000 Mbps. In addition, the AIMB-760 has multiple high performance onboard I/O capabilities, such as eight USB 2.0 ports and four Serial ATA ports with the high-speed data transfers at 150MB/s.
http://www.advantech.com

Go To Table of Contents | Go To Ad Index

Spirent Communications Launches Data Throughput Tester for HSDPA User Equipment

Spirent Communications (news - alert) announced the latest member of its WCDMA testing solution family of products. Spirent's User Equipment (UE) Performance Tester is designed to accelerate the successful deployment of next generation, high-speed wireless technology. Spirent is a worldwide provider of integrated performance analysis and service assurance systems for next-generation network technologies.

Spirent's UE Performance Tester offers a complete platform to evaluate all aspects of data throughput for HSDPA and R99, from the physical layer to the application layer. The platform can emulate complex wideband radio channel characteristics so that data throughput can be credibly assessed under realistic RF conditions and carriers can gain a realistic view of how they will perform on the live network. It offers network operators and device manufacturers a new and effective way to evaluate wireless devices in terms of data throughput efficiency and the user experience, which heavily affects both customer satisfaction and the efficient use of network resources.

The UE Performance Tester platform configuration consists of Spirent's AirAccess WCDMA-HS Network Emulator, the SR5500 Wireless Channel Emulator, Test Drive software and the Data Throughput Test Pack.

http://www.spirent.com

Topex Launches Carrier Class Softswitch

By Patrick Barnard

Topex (news - alert) has announced availability of its new carrier class softswitch, which enables service providers to offer enhanced IP based telephony services. Designed for small and medium size service providers and carriers, Topex's next generation platform allows for an "easy and scalable" transition from legacy-based infrastructures to optimized IP based networks.

The Topex softswitch supports multiple applications such as packet toll, packet tandem access, voice off load, mobile switching trunking and IP-based enhanced services trunking — as well as a variety of supplementary services. It provides telecom quality platforms that can "strategically fit into existing core infrastructures."

Supporting multi service, multi access, multi media and mobility applications, the Topex softswitch architecture offers support for all TDM signaling protocols; simultaneous any-to-any SIP, H323, SS7, ISDN calls; build-in, trans-coding, RTP proxy; wide range of packet voice technologies; compatibility for a wide range of feature servers; and easy deployment and operation with comprehensive tools, statistics and management interfaces.

The solution is scalable starting from hundreds, increasing up to hundreds of thousands of users.

http://www.topex.ro

Extreme Networks Introduces Carrier Ethernet Switch

Extreme Networks, Inc., (news - alert) a leader in open converged networks, announced its new carrier switch, the BlackDiamond 12K.

Extreme Networks' Multidimensional Ethernet helps carriers expand their customer base, support guaranteed data connections and deliver valuable IPTV and VoIP services. Multidimensional Ethernet also allows service providers to optimize their network infrastructure with improvements in Quality of Service and subscriber scaling.

To help achieve a carrier Ethernet network with service control, scalable subscriber management and prioritized bandwidth, Extreme Networks' Multidimensional Ethernet and BlackDiamond 12K switch provides carriers with:

• Guaranteed services with three-tier hierarchical QoS — Enhanced QoS capabilities can support up to tens of thousands of subscribers per line card with eight QoS service levels for each subscriber.

• An Ethernet Cross Connect for simple access to various content networks — Service providers can connect subscribers to a growing number of content networks using a Layer 2 approach that is both simple and cost-effective to deploy.

• Network scaling using Ethernet Virtual Private Networks (VPN) —Extreme Networks implements standards-based MAC in MAC technology, a breakthrough capability utilizing standards-based Ethernet to vastly increase the number of Ethernet VPNs per network.

http://www.extremenetworks.com

TI's VoIP System-on-Chip, Software Puts Customers on Fast Track to Residential Apps

Texas Instruments Incorporated (TI) (quote - news - alert) announced its latest VoIP system on a chip, the TNETV1061, providing advanced VoIP and data routing features for the rapidly growing VoIP market. The DSP-based solution is ideal for residential applications where voice quality, scalability, low cost and reliability are essential for service provider deployments. Manufacturers will benefit from an optimized solution that significantly reduces the bill of materials, while providing a significant improvement in performance and a full suite of advanced VoIP call features.

TI's newest residential VoIP solution integrates the company's market-leading Telogy Software™ for high-quality VoIP with the strength of TI DSPs for real-time signal processing. The complete software and silicon solution is anchored by the TNETV1061's dual processor architecture, ideal for simultaneous real-time voice processing and data traffic under heavy load conditions. Whether designing an analog terminal adapter, VoIP gateway/router, VoIP-enabled 802.11b/g access point/router or broadband cordless phone, the TNETV1061 solution provides the processing power and offers the software features demanded by both service providers and consumers.
http://www.ti.com

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Metreos Offers SIP Support

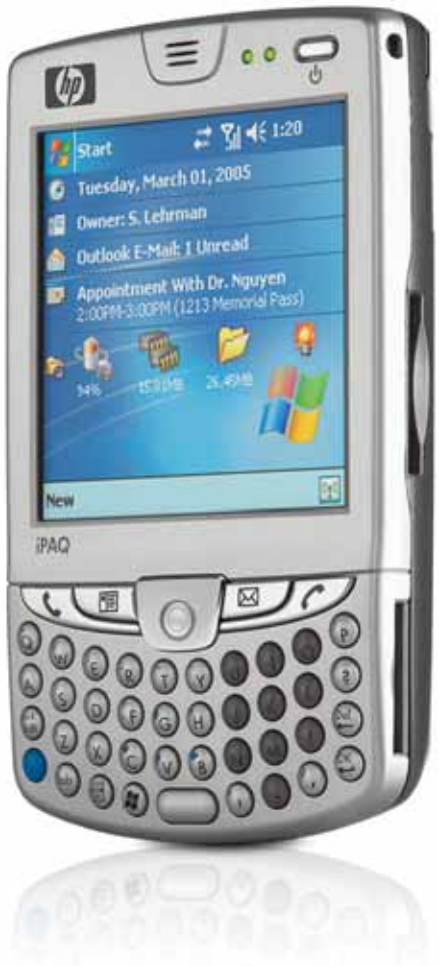
By Cindy Waxer

Metreos Corporation, (news - alert) a Texas-based VoIP provider announced the release of a major upgrade to its flagship Metreos 2400 VoIP application environment. The new version adds support for Session Initiation Protocol (SIP) to the environment and enables the development of a VoIP application ecosystem for the SIP standards-based VoIP infrastructure market. What's more, SIP is entirely abstracted for the developer and interoperates seamlessly with all applications built to run on the Metreos platform.

"We are excited about the promise of SIP to enable applications to seamlessly run across heterogeneous IP telephony environments. This new release of our platform delivers the industry's only complete VoIP application environment with full SIP support," said Joel Fontenot, CEO of Metreos.

The SIP standard has won plenty of enthusiasts throughout the IP telephony market because it offers a single signaling and event notification protocol that converges voice, video, and messaging communications. At the same time, it offers an open standards-based approach that allows applications and services to run on multiple platforms from different vendors across disparate networks.

http://www.metreos.com



SIPquest Announces Enhanced Version Mobile Console 2.0

SIPquest (news - alert) announced the latest version of its mobile VoIP application for PDAs and Smartphone: Mobile Console 2.0.

Mobile Console, a software application residing in mobile handsets, delivers personal command and control of communications services over WiFi or WiFi and GSM or WiFi and CDMA network interfaces. Its single GUI and support for unified numbering consolidates both WiFi and cellular identities to provide a seamless end-user experience. The "Network Aware" feature detects and recommends network connectivity to allow users to place and receive a call over the best available network — WiFi or cellular — optimizing for lowest cost, highest call quality or user preference.

Enterprise workers can use the new features in Mobile Console 2.0 to check the availability of co-workers, sort through the corporate directory, enable three-way or four-way conference calls, sort through call logs of their desktop phone and have the IP PBX deliver calls to a temporary number.

According to David Hattey, president and CEO of SIPquest, "Mobile Console 2.0 is a major step toward the fulfillment of our vision of giving corporate user complete personal command and control of their communications capabilities — regardless of whether they are in the enterprise or a public setting."

http://www.sipquest.com

Go To Table of Contents | Go To Ad Index

Nokia and Telenor R&D Tinker with Converged Services

By Johanne Torres

Nokia (quote - news - alert) and Telenor (news - alert) R&D announced on Thursday that they are trialing services for fixed and mobile environments using Fixed/Mobile Convergence technologies. The results of the research and development collaboration include the ability to deliver IP Multimedia Subsystem (IMS) services over Nokia's D500 DSLAM multiservice broadband platform; VoIP calls between mobile and fixed SIP (Session Initiation Protocol) clients; and establishing test capabilities for gaming and video sharing on a converged platform.

Nokia and Telenor began this project last year by seeking to assess how different IP services can be delivered over multiple access technologies like WLAN/DSL, GSM and WCDMA to a multiradio device such as the Nokia E60. The Fixed-Mobile Convergence architecture is based on SIP technology and the Nokia IMS system.

With converged IP services, users will be able to get their hands on a device that will integrate voice, video, text, content sharing and presence in a single communications session, regardless of the access network. This seems to be a great benefit for users because they will be able to place VoIP calls over both a fixed network and WLAN (Wireless LAN) using IMS. The joint project will continue until end of 2006.

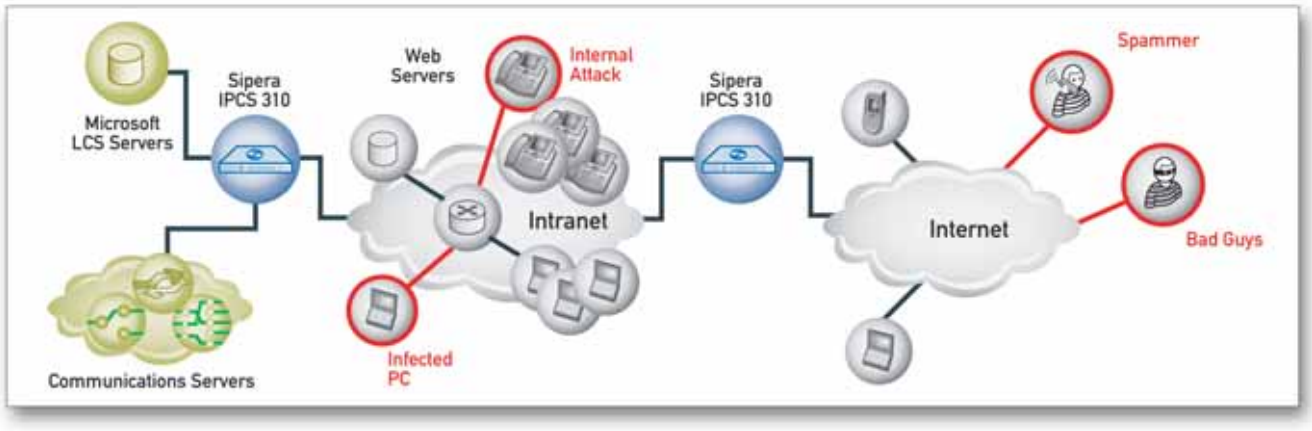
http://www.nokia.com
http://www.telenor.com

Sipera Launches Comprehensive VoIP Security System

Sipera Systems, (news - alert) a provider of pure security for VoIP, mobile, and multimedia communications, debuted its Sipera IPCS 310 system for comprehensive IP Communications Security. The Sipera IPCS products intelligently and transparently monitor VoIP traffic, detect anomalies in traffic and call patterns, and identify threats, to protect end-user devices and network infrastructures against attacks, misuse and service abuse.

Sipera IPCS products can be deployed in any existing VoIP infrastructure with no need for on-site interoperability testing, due to Sipera's close development and integration work with leading VoIP infrastructure manufacturers. The Sipera IPCS 310 product is not a point-of-failure in the network and is not subject to attack, as it is deployed without an IP address as a bump in the wire with no network configuration changes — preserving network integrity and user uptime, for fast ROI.

http://www.sipera.com



Cox Chooses Cisco's IP Contact Center Solution

By Anuradha Shukla

Becoming Cisco's (quote - news - alert) 3000th IP Contact Center customer, Cox Communications (news - alert) will be standardizing its contact center operations using Cisco's IPCC solution.

The Enterprise Edition of Cisco's IPCC solution delivers intelligent contact routing, call treatment, network-to-desktop computer telephony integration, and multi-channel contact management over an IP infrastructure.

Cisco's standards-based IP software will enable Cox to transform business processes by centrally managing its distributed contact centers, resulting in reduced operational costs. Cox plans to use IPCC, along with Cisco's Customer Voice Portal and Outbound products, in 19 contact centers. The company will use these products, which provide a unified view of service and support processes, to manage call routing from one location.

http://www.cisco.com
http://www.cox.com

Crutchfield Selects the Virtual Observer to Assure Call Center Quality

By Susan J. Campbell

Electronic cataloger Crutchfield Inc. has selected Coordinated Systems, Inc.'s (CSI) (news - alert) Virtual Observer as the quality assurance product that will help develop consistency in phone staff interactions, increase phone sales, eliminate the need for manual recording, and train new agents.

In addition to being the least expensive, the Virtual Observer offered all of the critical features like call recording, evaluation, extensive reporting, ease of use, and compatibility with their phone systems.

Virtual Observer helps team members see, hear, and feel their calls and allows them to pinpoint things they can improve upon. Reviewing a recorded virtual observer event is like reliving the call, which is a great coaching tool.

http://www.csiworld.com

FrontRange Solutions Unveils GoldMine IP Voice Suite

GoldMine IP Voice Suite, a new customer communications product from FrontRange Solutions, (news - alert) combines two powerful business technologies: IP Telephony and Customer Relationship Management (CRM) systems. The offering delivers an enterprise-class VoIP telephony application that includes full integration to GoldMine Corporate Edition CRM to help companies elevate the quality of interactions with their customers, which in turn boosts sales, increases customer loyalty and raises the productivity of service teams.

The new product includes an advanced, software-based IP telephony system (FrontRange IP Office) with Unified Messaging, Auto Attendant, inbound and outbound productivity applications, as well as easy to use management tools. For example, as calls ring into service employees, GoldMine IP Voice Suite triggers screen pops of customer records from the GoldMine database. For outbound calling campaigns, users can click to dial from customer records, as well as other productivity-enhancing features such as preview dialing, calling scripts and campaign status reporting.

"A lot of vendors are talking about convergence technology. FrontRange is delivering it," said Ken Landoline, a Principal Analyst at Saddletree Research. "The greatest benefit of combining CRM and advanced phone system functionality is that implementations of VoIP telephony technologies, integrated with CRM, is making a traditionally complex and expensive process now easy and affordable, which greatly accelerates the return on investment."

http://www.frontrange.com

Aspect Software Partners with CTSoft for Contact Center Solution Expansion

By Michelle Pasquerello

Contact center solutions provider CTSoft recently signed an agreement with Aspect Software (news - alert) to distribute Aspect products in Middle East and Africa.

The United Arab Emirates-based CTSoft will issue many of Aspect's contact center solutions, including Aspect EnsemblePro and AspectSpectrum ACD, in an effort to assist companies achieve customer service and marketing objectives.

CTSoft will also make available Aspect Unison Predictive Dialer and Aspect Conversations Predictive Dialer from the Aspect Signature product line, as well as AspectRightForce Workforce Management from the Aspect Performance Optimization product line.

CTSoft maintains a customer base in core verticals like banking and telecom and in sunrise verticals, including utilities, retail and transportation.

http://www.aspect.com

Go To Table of Contents | Go To Ad Index

Verizon Business Adds VoIP to Contact Center Service Suite

By Johanne Torres

In a move to enable businesses to communicate with their customers via both legacy and IP-based communications, Verizon (quote - news - alert)Business announced it has added VoIP capabilities to its Verizon Web Center service.

Verizon Web Center and Verizon VoIP now share the same network infrastructure and customer premise equipment, so Verizon Business can activate a range of IP telephony services, including IP Web Center, Hosted IP Centrex, IP Integrated Access, IP Flexible T-1 and IP Trunking, at a customer's location.

Customer service agents can personalize their voicemail greetings to enhance caller interactions with IP Web Center. Agents also have access to more info about a caller's history and can supervise call transfers to speed caller support. Customers can now use IP technology to give its agents mobility and local presence with Web Center's inbound and outbound call handling capability.

http://www.verizonbusiness.com

Avaya and Samsung Form Strategic Alliance

Avaya Inc., (quote - news - alert) a global provider of business communications applications, systems and services, and Samsung Electronics, (news - alert) a global producer of telecommunication systems and handsets, announced a strategic alliance to collaborate on the joint development and marketing of Internet protocol (IP) communications solutions to businesses globally. This collaboration will drive the delivery of enhanced IP convergence products and mobility solutions that integrate both companies' technologies, and offer enterprises greater choice in IP-based network services. The resulting solutions will help businesses drive greater productivity from an increasingly mobile workforce, enhance customer service, and improve business results through enterprise communications.

Under the agreement, Samsung and Avaya will co-develop and market products for IP-based solutions that serve the voice, video, and data convergence market.

At the initial stage, Samsung will market and resell Avaya's contact center and IP telephony solutions in Korea. The alliance will also drive the co-development of technologies that will enhance Avaya's IP-based mobility and convergence solutions. These solutions will be either co-branded or individually branded, and sold through Avaya's global sales channels.

http://www.avaya.com.
http://www.samsung.com

Cisco Systems Completes Scientific-Atlanta Acquisition

By Anuradha Shukla

Cisco Systems, Inc., (quote - news - alert) a worldwide provider of networking for the Internet, formally announced that it completed its acquisition of Lawrenceville, Georgia-based Scientific-Atlanta, producer of set-top boxes, end-to-end video distribution networks, and video systems integration.

Cisco's acquisition of Scientific-Atlanta will enable the networking giant to offer a world class, end-to-end data, voice, video, and mobility solution for carrier networks and the digital home.

With the addition of Scientific-Atlanta technologies, (news - alert) the Cisco IP Next Generation Network architecture offers providers an open platform for service differentiation, allowing them to move beyond digital video/IPTV to develop and deliver a variety of integrated media services in the connected home.

http://www.cisco.com
http://www.scientificatlanta.com

Nortel announces new SMB program

By Anuradha Shukla

Nortel, (quote - news - alert) provider of communications capabilities with business operations in more than 150 countries has launched the addition of a small and medium size business program to its new Accelerate>> partner initiative.

The new SMB program has been created for new and existing partners who sell to companies with a work force up to 250 people. The program is designed to accelerate the profitability of these partners and to increase the adoption of Nortel technology in the SMB sector throughout EMEA.

Accelerate>> is Nortel's enhanced and simplified partner program representing the next step in the Company's EMEA Channel Strategy. It builds on Nortel's existing partner program framework, allowing its enterprise and SMB partners to continue to build on their investment in Nortel solutions accreditation and infrastructure and to work together in growing top-line revenues, expanding technology portfolio opportunities and offering margin-rich returns on business.

http://www.nortel.com

Go To Table of Contents | Go To Ad Index

3Com and NUVO Partner to Provide Managed IP Telephony Service

By Susan J. Campbell

3Com Corporation, (quote - news - alert) a provider of secure, converged voice and data networking solutions and NUVO Network Management Inc., (news - alert) a remote IT infrastructure management and protection company, have announced and agreement, whereby NUVO will deliver managed services, such as performance monitoring, reporting, change management, inventory management and problem-targeting services, to help ensure the availability and performance of the converged networks of 3Com voice over IP (VoIP) customers.

3Com is set to offer NUVO's managed services as part of its expanding suite of service solutions for its VCX™ and NBX™ convergence platforms as part of the agreement. 3Com will work with NUVO as the delivery partner to provide the service.

The new offering will provide 3Com's customers with world-class managed services for 24x7 uptime and availability of their converged voice/data networks. NUVO's Web-based IT portal is included in the solution to provide system-wide visibility and decision-support analytics, with real-time reporting, system management and IT performance analysis.

http://www.3com.com
http://www.nuvo.com

Covad Signs Distribution Deal with Intelisys

By Cindy Waxer

Covad Communications Group, (news - alert) a provider of integrated voice and data communications, has joined forces with Intelisys, a distributor of business telecommunications services. The deal allows Intelisys' distribution network of more than 450 independent sales partners to sell Covad's VoIP and broadband products to small businesses.

Intelisys (news - alert) also has deployed Covad's vPBX hosted VoIP solution throughout its organization. Covad vPBX voice service delivers feature-rich, integrated local, long distance, and high-speed Internet access communications all over one fully managed network connection.

By signing a deal with Intelisys, Covad gains access to a nationwide network that includes telecom consultants and value added resellers. The union also allows Covad to better serve its customers by providing contact between Intelisys sales partners and Covad channel representatives specialized in delivering integrated communication solutions.

http://www.covad.com
http://www.intelisyscorp.com

Intrado Partners with Location Determination Vendors

By Johanne Torres

E911 technology provider Intrado Inc. (news - alert) announced it has partnered with technology vendors Rosum Corporation, S5 Wireless Inc., and Skyhook Wireless Inc. Intrado will work with these companies to demo a range of location determination systems and their ability to integrate into Intrado V9-1-1 Services.

"As VoIP moves towards fixed/mobile convergence, location determination will become a fundamental component within the IP-enabled communications market," said Stephen Meer, Intrado chief technology officer and co-founder. "Intrado continues to anticipate the needs of the VoIP E9-1-1 market and to make sure that we have the necessary solutions in place. The framework we are developing supports the continued progression of a more mobile-oriented VoIP solution that can be deployed with any device, in any location at any time."

Intrado V9-1-1 Services allows VoIP service providers to support their mobile subscribers. Intrado can enable subscribers to self provision their location info and instead create an environment where communication devices can automatically determine their location for 9-1-1 call routing purposes.

http://www.intrado.com

By Marc Robins

The Voice-Enabled Web Gets Its Groove On

In my January column, "All Together Now: The Embedding of Real-Time Communications," I maintained that the time was ripe for new applications and services that would telephony-enable the plethora of Web sites on the Net — especially community and social-networking sites like Myspace and its ilk — and that, in essence, we were on the cusp of a golden age of Web telephony. Since then, a number of new products and services, from both new and familiar names, have come on the scene that promise to make this dream a reality.

Skype, (news - alert) no stranger to the headlines, recently announced SkypeWeb, a Web presence feature that integrates Skype seamlessly into any Web site and allows people to see Skype users' online status and call or chat with them from any Web site as well as ring any phone from any site with the simple click of a mouse. With SkypeWeb, Web administrators can easily enable all site visitors to talk for free over the Internet.

With SkypeWeb, users can easily make their Skype status available on the Web simply by opting in using Skype's tools menu, then creating their own presence button by copying and pasting a few lines of HTML and script from skype.com/share/buttons/.

In fact, SkypeWeb is already integrated into more than 50 Web sites in 20 countries around the world. Salesforce.com, a leader in on-demand CRM, has made SkypeWeb available on its AppExchange platform, enabling customers to deploy it directly within their salesforce.com implementation. In addition to free Skype voice calls, the SkypeWeb presence feature gives salesforce.com subscribers the ability to know when their contacts and colleagues are available and online — all directly from the salesforce.com site.

Other SkypeWeb adopters include Bebo, the largest social networking site in the U.K. and Ireland, which has integrated SkypeWeb to enable all Beboers to IM, talk, and video chat. DBA.DK (Den Blå Avis), the number one Danish classifieds portal, is using SkypeWeb to show the Skype status of people who have posted classified ads. Lunarstorm, a Swedish/British community Web site, is integrating SkypeWeb to allow users to display their Skype name and status in profiles. Onet.plb, Poland's leading Internet portal, offers SkypeWeb to enable more than a million bloggers and Webmasters to show their status. And TOM.com is using SkypeWeb in its customer service offering to display Skype user presence information for its customer service representatives.

Another exciting new addition to the Web telephony arena is from Voice Commerce Group (http://www.voice-commerce.com), a New Jersey-based company founded by WorldPay founder and Voice Commerce Group's president Nick Ogden. Voice Commerce's new Whitephone (http://www.whitephone.com) is billed as the world's first fully brandable voice integrated browser, and enables any online business to create a fully branded VoIP service that offers voice, text and video communications for customers as well as sophisticated revenue generation opportunities through the latest broadcasting and click-to-talk technologies.

The Whitephone is designed to wrap around any existing Web site, and provides a white label voice-enabled browser with feature-rich communications functionalities, including 'CastAlive' for broadcasting text, audio, and video to opt in groups, and 'click to talk' functionality to allow end users to click to call a sales representative directly before they buy, for example.

The goal for Voice Commerce Group and Whitephone is to provide local and national media groups, Internet portals, special interest groups, consumer brands, educational portals, and e-businesses with the tools to deploy their own branded integrated communications portal. With an offer like Whitephone, these companies will be able to market new forms of advertising including click to talk and video broadcasts (using CastAlive).

According to Nick, "Our aim at Voice Commerce is to provide the tools that help build advanced e-businesses by incorporating voice into the browser and into existing Web content. We want to turn the Internet into a completely natural communication environment that not only creates a richer Web experience for end users, but also provides the tools for brands to market to potential customers in a sophisticated and personalized manner."

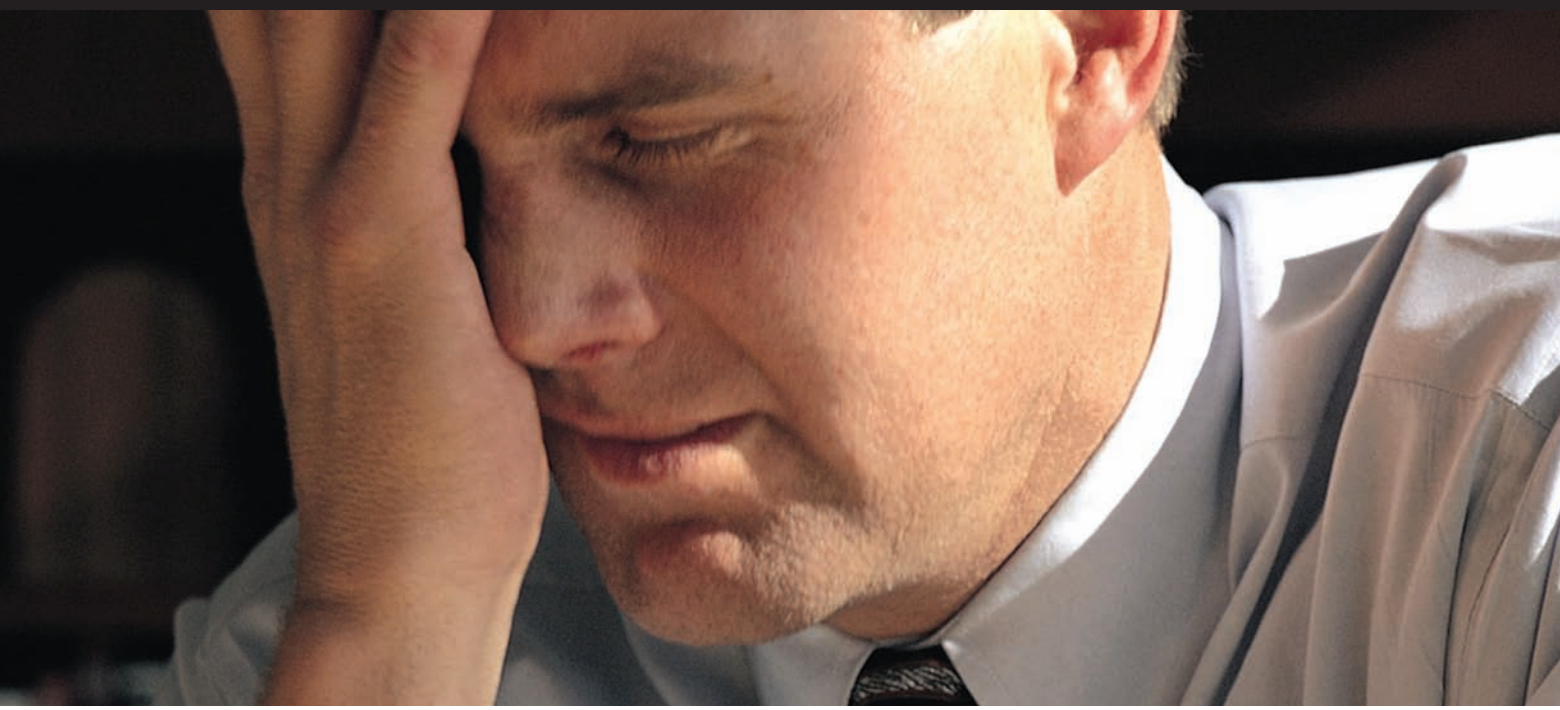
Voice enablement is the most significant growth opportunity on the Internet.

He adds that, "Voice enablement is the most significant growth opportunity on the Internet, and voice commerce is set to transform our e-commerce experiences and change the way the Internet is used for communication, advertising, information search, and retrieval."

To that, I say, "Amen." IT

Marc is Chief Evangelism Officer of RCG (Robins Consulting Group), a marketing intelligence company dedicated to the needs of the IP communications industry. Marc has been involved in the telecommunications industry as a reporter, analyst, trade show producer and publisher, and marketing executive for more than 25 years. Contact RCG at 718.548.7254 or info@robinsconsult.com for more information.

Don't Make a Million Dollar Voice Messaging Mistake



How much money can you expect to spend if you change to a new family of messaging systems? Our customers tell us that it's twice as expensive to purchase a new messaging system versus upgrading their current system!

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- Users resist learning new user interfaces, and get little help from confused employees and overwhelmed help desks.
- Database conversions can be more complicated than anticipated.

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If you're considering a messaging product from your PBX vendor, is their experience limited to just integrating their own messaging system to their own phone system? What if you need to integrate with other PBX's, e-mail or Presence servers, Speech Recognition, IVR or other Voice Messaging platforms?
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www.communitechservices.com

By Tony Rybczynski

Secure Branch Routing: Business Not As Usual

Enterprises differ in the business role of remote sites. Some are customer-centric, while others are employee-centric; some are highly dependent on the head office; while others are more autonomous. In either case, your branch/remote office networking solution may have been established in preparation for Y2K and it may be time for a refresh. At the same time, new levels of security are required, traffic has increased and VoIP has become a reality. What should you do?

The Implications of IP Telephony on the WAN

IP telephony is not just another application on IP. IP telephony cannot tolerate packet loss, since there is no time to retransmit. End-to-end Quality of Service is required to ensure delays are kept below 150msec delay so that the interactive nature of human communications is not impacted. WAN bandwidth needs to be engineered appropriately with as much as 80Kbps required per voice call and typically 100–200Kbps for desktop video. Service management capabilities are needed to provide proactive voice quality management solving quality problems before the user reports them. Security mechanisms need to be made aware of multimedia protocols and not introduce performance impairments that will affect the user quality of experience.

Unfortunately, branch routers that have evolved from a multi-protocol best effort data networking world may not be able to deliver the functionality, security, and performance required, or may significantly degrade in capacity when faced with voice traffic. But we are getting ahead of ourselves.

Branch and Remote Office Converged Branch Options

In looking to renew your branch and remote office environment, you need to consider whether your operation is more aligned with loosely versus tightly coupled operation with respect to the head office and the corporate data center. Tightly coupled branches rely on most intelligence being in the data center, including Internet firewalls and VPN (define - news - alert) gateways for remote employee access, contact center servers, and even centralized IP Telephony servers. Because of increased centralization, WAN reliability is particularly critical, driving the need for multi-link technologies over the last mile and route diversity.

Loosely coupled remote offices interoperate with the head office but are generally more independent, including on-site provisioning of contact centers, unified messaging, and Internet firewalls.

Meeting regulatory compliance and security requirements are table stakes.

Technology Considerations

General purpose Swiss army knife branch routers may not be well suited to meet reliability and performance needs of voice and multimedia. The fact that the packetization processes for voice, aimed at minimizing latency, create very short IP packets is a significant challenge for these routers, particularly when various security mechanisms, such as firewalls, VPNs, and Access Control Lists are activated. In fact, in most router architectures, turning on security functions and handling short voice packets results in a drop of up to 80 percent in packet handling capacity. Independent Tolly Group testing has demonstrated that secure router products, which incorporate routing, VPN and firewall functionality, can excel at the low-latency, small packet throughput demanded by real-time voice and multimedia applications. In fact, they showed these as capable of delivering two to seven times the throughput of equivalent routers from the leading router vendor, even when running integrated VPN acceleration, secure dynamic routing and stateful packet inspection.

Business Considerations

There are a number of procurement strategies you can follow. You can go with a single vendor for your branch and regional/HQ sites. There are two major proven vendors that can deliver end-to-end converged networks: Cisco and Nortel. Alternatively, you can go with one vendor for your branch network and another for your backbone/core network. Multivendor data networks are the norm across the Internet, and have been implemented in many enterprise networks, leveraging Ethernet and IP networking standards. Risk can be minimized by maintaining your backbone/core and going with a best in class solution at the edge of the network. Key criteria include WAN optimization and reliability capabilities (including multilink) and rigorous routing standards compliance; the ability to minimize latency and maximize throughput for (short) voice packets, while

Go To Table of Contents | Go To Ad Index

delivering wire-speed layered defense functionality; simplified installation and configuration, and centralized operations, a critical factor for remote sites; and the vendor's ability to deliver rich telephony features without compromise, while providing evolution at your own pace to multimedia collaboration and mobility.

CXO's are faced with three high level business realities that represent key challenges in branch and remote office renewal.

• The rules of the game have changed: meeting regulatory compliance and security requirements are table stakes.

• Time to X is the key metric: reducing time to decision, time to service and time to revenues is the path to the real-time enterprise.

• You have to do more with less: too much money and resources on day-to-day operation!

Reducing time to decision, time to service and time to revenues is the path to the real-time enterprise.

Blindly sticking to a single vendor without considering alternatives is not responsible action, particularly given security vulnerabilities and high costs associated with some vendor's router products. CXOs should carefully evaluate the roadmap to convergence in their environments, the new requirements that convergence brings to their branch networks, and vendor partnerships for maximum competitive advantage. IT

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

By William B. Wilhelm, Jr. & Ronald W. Del Sesto, Jr.

The Network Neutrality Debate and the Future of the Internet

The debate over "network neutrality" will gain importance in 2006 with the Federal Communications Commission (FCC) and in Congress. AT&T's announcement of its plans to acquire BellSouth will force the FCC to revisit the issue. Meanwhile, Congress will consider network neutrality as it grapples with a rewrite of the Communications Act and attempts to determine how to preserve consumer welfare and to promote the continued deployment of broadband networks.

The term "network neutrality" has become the phrase encapsulating the idea that consumers should be able to access the content of their choice and use any device they desire with their broadband Internet connection. Today, consumers can browse Web sites and subscribe to all sorts of services distributed over the Internet without restriction. Proponents of network neutrality argue that consumers should continue to have unfettered access.

But the builders of the on-ramps to the information superhighway, including regional bell operating companies, like AT&T (quote - news - alert), Verizon (quote - news - alert), and Bell South (quote - news - alert), counter that someone must pay for the new infrastructure needed to gain access to high-speed services and content. Facing costly capital investment in upgrading existing broadband connections, network operators argue that their investment and costs must be recouped from those that want to reach consumers through their facilities.

The FCC has partially weighed in on this debate by defining what constitutes unacceptable conduct on the part of network operators. The FCC became formally involved in the network neutrality debate in February, 2005 when a VoIP provider filed a complaint with the FCC that its communications were being blocked by a regional telephone company. The matter was quickly resolved by the FCC and the telephone company entering into a consent decree providing that the telephone company would not block such communications for a period going forward. Following the consent decree, the FCC adopted an Internet policy statement in late September, 2005. The unenforceable policy statement affirmed that consumers should be able to access content, connect equipment, and run applications of their choice over their Internet connections. The policy statement also provided that consumers should be entitled to competition among network, application, service, and content providers. The policy statement later became a merger condition to the combinations of SBC and AT&T, as well as Verizon and MCI. The FCC has not addressed whether network operators can require content providers to pay for faster access or for a certain quality of service when distributing content to consumers via the Internet and the operators' facilities.

Congress is now becoming actively involved in the network neutrality debate and is considering whether legislation is needed to preserve consumer welfare. During network neutrality hearings held by the Senate in early February, 2006, representatives from trade associations of telephone companies and cable operators stated that they would not block, impair, or degrade content, applications, or services that traverse their networks. The debate over network neutrality has since evolved away from arguments that network operators have the right to block or otherwise degrade the performance of services carried over their facilities. Instead, the issue has become whether network operators should have the freedom to tier access to the Internet. In addition, questions have arisen regarding whether network operators must continue to peer with each other or whether larger providers can discontinue service to those network operators that remain unwilling to pay a fee for delivery. In the view of some, in order to ensure continued investment in broadband infrastructure, Web site operators, Internet application service providers, and other network operators should be required to pay a fee in addition to what consumers pay for their broadband access. Some further argue that consumers should be required to pay fees based on the type of applications they choose to run over their Internet access connection. The FCC's policy statement has left these important matters unanswered.

Network neutrality is a watershed moment in the evolution of the Internet.

Recent legislation authored by Senator Wyden aims at preserving network neutrality in its broadest sense. Among other things, the draft legislation would prohibit network operators from blocking, impairing, or altering any bits, content, application, or service transmitted over a network operators' facilities and would bar network operators from restricting the type

Go To Table of Contents | Go To Ad Index

of equipment that can be attached to devices used to deliver high-speed Internet access. The draft bill would also forbid network operators from discriminating in favor of themselves by reserving bandwidth or in transmitting content or applications to consumers. Furthermore, Senator Wyden's proposed legislation would proscribe network operators from charging companies that wish to provide content to consumers through network operators' Internet connections.

The debate over network neutrality will remain a high-profile issue this year on the Hill and at the FCC for myriad reasons. The United States' broadband penetration rate continues to decline as compared to other countries. A few years ago, the United States was ranked 11 in broadband penetration but recent studies place the United States at 16 with network operators arguing that they need additional revenue streams to spur broadband deployment while proponents of network neutrality highlight that free access to innovative applications increases the take-rate of high-speed Internet connections. Improving the rate of broadband penetration remains a top priority of the executive and legislative branches. As a result, the necessity of protecting network neutrality has arisen in the context of Congress's rewrite of communications laws. Does Congress need to legislate in this area or should the marketplace sort it out?

AT&T's plan to acquire BellSouth will no doubt renew the network neutrality debate in the context of the FCC's review of the planned mega-merger. Both AT&T and BellSouth executives have been vocal advocates about their intention to explore new revenue streams from their broadband Internet access facilities by introducing premium service for Internet content providers. Many believe that network neutrality is a watershed moment in the evolution of the Internet and whether content will remain free is vitally important to the future of the Internet as a force of innovation and economic success. IT

William B. Wilhelm is a partner and Ronald W. Del Sesto, Jr., is counsel at the global law firm of Bingham McCutchen LLP. For more iformation, please visit them online at http://www.bingham.com. (news - alert) The preceding represents the views of the authors only and does not necessarily represent the views of Bingham McCutchen LLP or its clients.

By Rick Gross

Why SIP Will Win

By now most of us in the telecommunications industry have heard all about the virtues of SIP from a wide variety of sources. The buzz has been going on for a number of years and has now reached a point that the discussion has evolved from a futuristic view reminiscent of science fiction to business-level applications that are being used in a variety of business applications today. SIP support is finding its way into communications servers (IP PBXs), IP client devices, gateways, applications, and firewalls. In fact, you might be using SIP every day and not even realize it. So, how will SIP (define - news - alert) impact converged enterprises and how is its adoption likely to change the telecommunications landscape.

If you look back at early Enterprise IP Telephony reports before 2000, they claimed that we would all have thrown out our PBX systems and replaced them with IP PBXs by now. But that process has occurred at about half the rate that was initially expected. Why is that? At least partially to blame was the H.323 "standard" (really a recommendation) that these systems were built on because it was defined broadly, such that virtually all vendors' products met the standard. Unfortunately, H.323 was not defined narrowly enough to ensure interoperability. As several more versions of H.323 came out over time to address the issues, the Internet generation grew hungrier for *their* Internet and wanted more than traditional telephony over IP, they wanted SIP. The Session Initiation Protocol developed by the IETF (Internet Engineering Task Force — the folks who brought us Internet standards) was built on Internet standards like HTTP (Hyper Text Transfer Protocol — commonly used for Internet Web pages) and SMTP (Simple Mail Transfer Protocol for Internet messaging) so, right away it was compatible with the Internet and supported a number of forms of communication such as voice, video, text, and chat.

While the H.323 systems added mobility and the ability to distribute IP Telephony systems across a LAN, MAN, and WAN, they basically delivered a similar feature set to traditional systems. SIP is bringing a whole new load of very compelling features such as instant messaging, single click video conferencing, chat rooms, Presence (the ability to share real-time status information between group members), collaboration, as well as an intelligent single number follow-me solution based on the device the user is logged in to — just to name a few. And features will continue to evolve quite quickly and easily since the end devices will have the intelligence. In other words, the network in the middle doesn't have to do much more than provide reliable connectivity. Relatively 'dumb' and relatively 'smart' endpoints will communicate by negotiating for the lowest common denominator of simple services. Or at the other end of the spectrum, groups of 'smart' endpoints can have multiple streams of video, images, multi-channel music, audio, text, chat — with full security between individuals or large groups.

Regarding cost savings, part of the benefit has been in being past the learning curve and having true factual cost data to work with. Where costs were often higher than expected initially, prices per port for IP phones (don't buy one that can't support SIP) have dropped and quality has risen as with anything that can be mass produced. With the advent of low-cost standard USB headsets and Web cams to take advantage of SIP applications — it is inexpensive, easy to use, and people love it. Consider how expensive and complicated ISDN video used to be. Now a person with a SIP client can make a voice call, a video call, or both in a matter of seconds over their IP network without any special configuring or multiple networks to support. In fact, if that user wants to add participants and have a multipoint videoconference they simply invite others by selecting them with their mouse.

The ubiquitous Internet in combination with VPN and SSL security allows SIP-equipped mobile workers to work from virtually any hotel, airport, or home office's wired or wireless connection. Productivity levels increase as they take all of their communications capabilities with them wherever they go.

And finally, SIP applications run on standard server platforms and are written in commonly used computer languages. Vendors have interoperability labs where the latest SIP applications and client devices can be tested and certified — in many ways due to the Internet climate in which SIP was created.

Will SIP become a success? In fact, there's a pretty good chance you used it today when you sent your boss an instant message to approve your travel voucher and then got one from your kid asking if a friend can come for dinner. If there is any pattern to successful technologies, SIP will be in every communication device you use in the next five years. IT

Rick Gross is with Nortel Multimedia Communications Solutions Marketing. For more information, please visit the company online at http://www.nortel.com. (quote - news - alert) For more information regarding the Enterprise Communications Association, please visit http://www.encomm.org. (news - alert)

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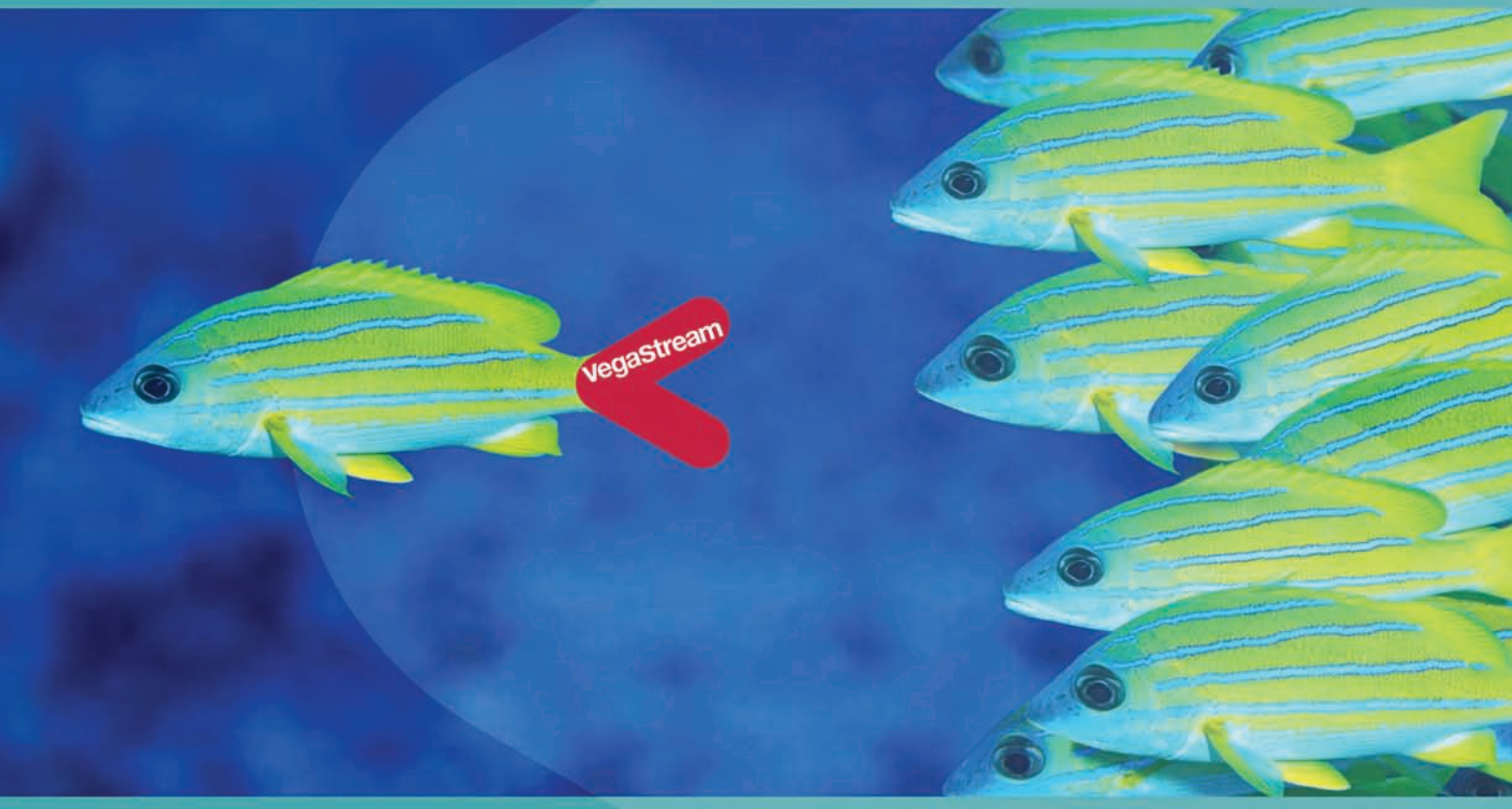

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By Hunter Newby

Here Come The Deals!

The growing legions of the VoIP Peering believers marched in to Fort Lauderdale in January to mark the first anniversary of the Summit, and it was standing room only. The mood was most certainly different from last year when there were more theories at work than practical applications. This time some of the VoIP Peering service providers that were relatively new to the game had something to show for their efforts — announced deals. One such innovator is XConnect/Kayote Networks. They recently announced that they were selected by a group of cable companies in the Netherlands to provide VoIP Peering services including call security and number mapping for PSTN bypass. This is a step in the right direction for many people and for many reasons.

This move by the MSO's is big for XConnect, so congratulations! As big as it is for them it is even bigger for VoIP Peering in general. Although there have been other announcements by carriers, MSO's and enterprises using number mapping this marks the first time a group of service providers came together to make a decision of this kind.

That action by the MSO's has several benefits. It shows that a group with common goals (a community of interest) can work together towards a technical achievement that's tied to an OPEX savings outcome. This step is not limited to MSO's. It can include many different service provider types as well as enterprises. Their collaboration also paves a road for others to follow in the actual technical steps they took. In the same way the CableLabs RFI outlined the questions several US MSO's wanted answers to, the Netherlands MSO's have gone that route and a step further to a decision. This saves the next group some time and creative thinking energy as it is always easier to follow what someone else actually did and raise the probability of being successful.

In addition to all of this, the physical network interconnection points and method they chose for the signaling and media sheds some light on how this will work in other parts of the world. The Netherlands is not a vast expanse of geography and this works in favor of networks there. The country naturally eliminates most of the potentially high costs to build networks by not being too large and this has helped the MSO's build their businesses in separate regions without spending a lot of capital. As a result, the MSO's chose to interconnect their networks at the Amsterdam Internet Exchange (AMS-IX) where they each already had a network presence. This was very logical. It's the meeting point.

The AMS-IX is one of the largest IP Peering facilities in Europe and the largest in the Netherlands. It is housed within and distributed between four physical sites. Two of them are University owned properties, known as SARA and Nikhef, and the other two are Global Switch and Telecity sites. They are major European colocation facility operators.

The reason why the AMS-IX is necessary is that the MSO's need a way to actually carry, or transport, the calls between each other, something XConnect does not provide. They also have the specific intention of not using the public Internet as the transport mechanism. The MSO's looked at using their existing connections in to the AMS-IX peering fabric because it made sense to use the infrastructure that was already carrying their other IP traffic. Since this particular application is VoIP it can be easily carried across the AMS-IX and, since all of the MSO's are in the Netherlands and bring their own access to the physical AMS-IX interconnection points, there were no network disparity issues that would have otherwise required local loops. The MSO's are now able to use the distributed Ethernet fabric to send calls between their switches from one end user origination point directly to another end user termination point. This replaces the incumbent telephone company, KPN, PSTN end to end. The Netherlands is becoming one big WAN.

The Netherlands is becoming one big WAN.

Interconnection sites like these have grown up over the years by accumulating the necessary and relevant fiber and access providers. Once critical mass is achieved there is really no going back. Now that the key sites around the world are established it is a matter of education and awareness to the community at large.

A significant investment on the part of dark fiber providers to build in to these common points was made because that is where the majority of the original fiber and copper in the respective major cities was predominantly located. This, in turn, built the business case and made it quite logical for the

carriers and cable companies in those regions to choose to put their equipment there as well. Once the first few took the initial steps it was much easier for the rest to follow. Today, there is no better place to go in these regions for peering connectivity.

This is a pattern that began to unfold in the physical layer over the past 15 years. When deregulation came to the major regions of the world, investment followed. The first round was facilities-based transport and TDM voice providers. Those newly funded carriers all needed a home for their networks. Common points make logical sense because they create beneficial proximity and eliminate the costs, time, and issues related to disparity. The next round was the ISP's and they followed a very similar pattern of seeking the common address in most parts of the world.

This same exact pattern is now unfolding with VoIP with an added twist on top of the physical address. That twist is that the next-gen transport world of Ethernet is ushering in the users of the melded legacy voice service now being delivered over IP and not necessarily over the Internet, such as the case at the AMS-IX. The technology is being efficiently combined in the place where it makes the most sense to do so, where everything else already is.

This process has been documented and it helps the next wave of users achieve their goals without having to reinvent the wheel. The faster everyone understands this and sees these places for what they truly are — marketplaces — the faster everyone will begin to appreciate VoIP Peering and the efficiencies that these service providers bring to the market. In the same way that the Carrier Hotels and the Internet Exchanges around the world bring the benefits of proximity, clarity and a defined process at layer 1, the VoIP Peering service providers do the same in the higher layers for the application of voice. These services are evolving at exactly the right place and time that they should be. Now it's time for VoIP networks operators to start to take advantage of them.

All in all, ITEXPO was once again an excellent event. Many relationships were fostered and a lot of good, accurate information was disseminated. For those believers of VoIP Peering out there it was a rewarding experience to begin to see acceptance of the concept in actual use. There is still a ways to go, but let's keep getting the word out! IT

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


By Rich Tehrani & Max Schroeder

Continuity Planning 101 — A Continuing Educational Series

The Compelling Case for the Reseller

The March CP 101 column focused on the short-term benefits of IP Communications (IPC) plus the role IPC can play in disaster preparedness. The column was based on a paper prepared for resellers by Forsythe Technology, Inc., a provider of continuity and recovery solutions. This month's column will present the case for using experienced vendors, resellers and consulting firms to create and implement your business continuity plan.

The Big Three

Reason #1 — Resources

Developing a quality business continuity plan for the first time can be a major task for a company of any size. However, small companies generally do not have the bandwidth to establish a "Business Continuity Planning Committee" that is also tasked to develop and implement the plan. Outsourcing this project will allow your company to stay focused on your core business.

Reason #2 — Experience

The saying "You never get a second chance to make a first impression" applies here also. If you do not maintain continuity on the first attempt, your plan has failed totally. Resellers specializing in business continuity will help your company develop a plan based on experience rather than theory.

Reason #3 — Cost savings

There are many choices to be made in developing and implementing a continuity plan. Experienced resellers will already have a library of information that your business continuity team would have to recreate by investing long hours in research. Simply guiding your company through choices like as "do we need a hot site and a cold site?" or "would managed services provide the best solution?" is a prime example of how experience can help to guide you to a reliable low-cost solution.

Where To Start?

Step 1 — Get Management Commitment

The most critical aspect of developing a business continuity plan is getting the commitment of top management.

Step 2 — Establish a Business Continuity Planning Committee.

In a small organization, this will be a part-time responsibility. One person should be designated as Recovery Coordinator or Contingency Planner. The title is not critical, but the job responsibilities are vital to the success of the project.

Step 3 — Operational priorities and risk assessment.

Not all business operations may be critical and may not require instant failover in the event of a contingency. For example, phone support for first responders is a critical area, but billing for those same services can be done at a later date. Even if your company does not expect to outsource the entire project, the assessment stage is where a reseller can be extremely valuable. An experienced partner can help you develop a professional assessment report and accelerate the entire evaluation process.

Subsequent columns will review additional steps required to implement your plan, but the above information provides a good starting point. However, one of the vital areas to be addressed initially is dealing with misconceptions. The coverage of the tsunami and the hurricanes in 2005 has distorted the public view of what defines a "contingency." Most failover or contingencies do not occur as a result of a major disaster but more commonplace events. In fact, the most likely event is loss of power followed by fires and hardware failures. A significant percent of companies that failover to a hot site generally require just 48–72 hours before resuming home operations. The FEMA 2005 disaster summary list (http://www.fema.gov/news/disasters.fema?year=2005) includes events such as severe local storms, flooding, fires, tornadoes, and snow that are more localized events, yet still large enough to be considered a disaster. Yet even this list does not include single building fires, power outages caused by a power line/motor vehicle encounter, disruption of phone services, and other everyday events that will interrupt your operations.

Another misconception is that a continuity plan will be expensive. Of course, that is possible, but very dependent on the size and scope of your company operations. Many plans can be implemented without a significant investment. This is also an area where an experienced reseller can provide case studies and other factual information to educate your top management and planning team on what to expect. Keep in

Go To Table of Contents | Go To Ad Index

Table 1.

3t Systems, Inc. http://www.3tsystems.com	Haines Brown Inc. billhaines@bellsouth.net
Brooktrout Technology http://www.brooktrout.com	Iwatsu America http://www.iwatsu.com
Cisco Systems http://www.cisco.com	Mortgage Systems International http://www.mtgsi.com
EarthNet Telecom http://www.earthnettelecom.com	Quintum Technologies, Inc. http://www.quintum.com
Enterprise Communications Association http://www.encomm.org	Sphere Communications Inc. http://www.spherecom.com
Faxcore, Inc. http://www.faxcore.com	Tadiran America http://www.tadiran-us.com
Forsythe Solutions Group http://www.forsythe.com	Telephony@Work, Inc. http://www.telephonyatwork.com
	Technology Marketing Corporation http://www.tmcnet.com

mind that if top management does not buy in on a plan, you don't have one.

Probably the most critical area for any business is communications.

Chuck Rutledge VP of Marketing for Quintum Technologies emphasizes:

"As VoIP moves into the mainstream market, enterprises are becoming more demanding. Not only are they looking to use convergence-based applications to save costs, improve productivity, and enhance customer satisfaction, they are demanding survivable solutions. Loss of communications is loss of business and productivity. Intelligent VoIP access products allow VoIP (define - news - alert) communications to be routed over various paths depending upon destination and network availability. Simple examples are phone calls that are routed to the PSTN if the IP is lost, or to another site for PSTN hop off if the PSTN is lost. Today's market is supported by a wide variety of vendors offering a broad spectrum of VoIP applications, and the integration of intelligent VoIP access can support survivability in these applications. The value-added resellers are currently the ones in the position of bringing various components together to support a total solution and implementing it to assure it is not susceptible to network failures."

Continuity planning is another reason on the long list that substantiates why your company's migration to VoIP should be implemented now. Not all good things are expensive. Some are just based on better technology.

The table accompanying this article is a list of the founders and current members (at date of printing) of the Disaster Preparedness Communications Forum (DPCF). The list comprises vendors, non-profit associations, service providers, contingency planners, and resellers focused on the enterprise market and willing to devote resources to this valuable initiative.

If your company is interested in business continuity planning please visit: http://www.tmcnet.com/channels/disaster-preparedness/ Also, the member Web sites listed in the table will have additional information and you can always contact Max Schroeder at the address listed below. IT

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

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

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.

By Mike Katz

The Cycle of Innovation and Evolution Continues

Almost eight years ago I penned a series of articles for a fledgling INTERNET TELEPHONY® under the moniker of "The Next Wave." Back then the articles were focused on the emergence of a new and untested technology — VoIP. The articles were mostly predictions of what could be done with the technology. It was this VoIP technology that in the beginning was in search of a market that started the big switch to an all IP telecom world. It has taken almost ten years, hundreds of companies, and thousands of people for VoIP to reach the mass market and achieve moderate acceptance. Chalk that up to market inertia. Back then we were pioneers talking up an unproven technology without a market and on the surface, a slim chance to succeed.

The VoIP Dream

Many in the telecom establishment decried VoIP as "just a toy," a fad that will pass. However a few stalwart souls stayed the course and a series of companies were formed, evolved, were absorbed by the big guys, or failed; but along the way they fundamentally changed the way we communicate. This all occurred against a backdrop of constant change in the telecom market, times which included the Internet boom and bust and the long, long telecom nuclear winter, the rise of the "dumb network" and now IMS, IP Multimedia Subsystem. Does the VoIP (define - news - alert) dream of 1997 resemble what we use as services today?

Interestingly enough, yes. We envisioned inexpensive, broadly available telecom with a global reach on your choice of device. Examples range from simple replacement voice services like Vonage and AT&T to truly innovative telecom like the emergence of presence (you can know whether you call will succeed before you place it), the use of wideband audio (vastly better sound than traditional telephony) and, perhaps, the integration of video. Skype and GoogleTalk are interesting because they've innovated. So why revisit the past to discuss the future? As experience has proven, past history can be an indicator of future events and history can provide insight to guide us smoothly through the next wave of innovation and evolution.

Broadband Demand is the Catalyst for Change

Fast forward to 2000, the broadband access boom that started then is now a startling 28 percent annual growth rate, according to a February 17, 2006 report on the Telecom Market from the Telecom Industry Association. This growth in broadband access, driven primarily by the consumers' desire for high-speed Internet access has enabled market conditions that favor consumers accessing new broadband rich services and content. Internet consumers naturally gravitate toward what OVUM/Point Topic analysts refer to as broadband value added services or BVAS. The growth in BVAS from 2004 to 2005 was modest at eight percent, but that's eight percent of the worldwide broadband access market of over $39B. These broadband value added services are both audio and visual in nature such as peer to peer sharing of CD audio and movies that take advantage of all the bandwidth and QoS that a service provider whether DSL, cable or mobile can deliver.

What is emerging along side of these base drivers are newer bandwidth consumptive services, which include traditional VoIP, Streaming Video, IPTV, PCD (personal content distribution; think Sling Media and Orb) and Video conferencing, just to name a few. An article or two could be devoted just to discussion of the market impact that these BVAS create, but that will have to wait 'til later.

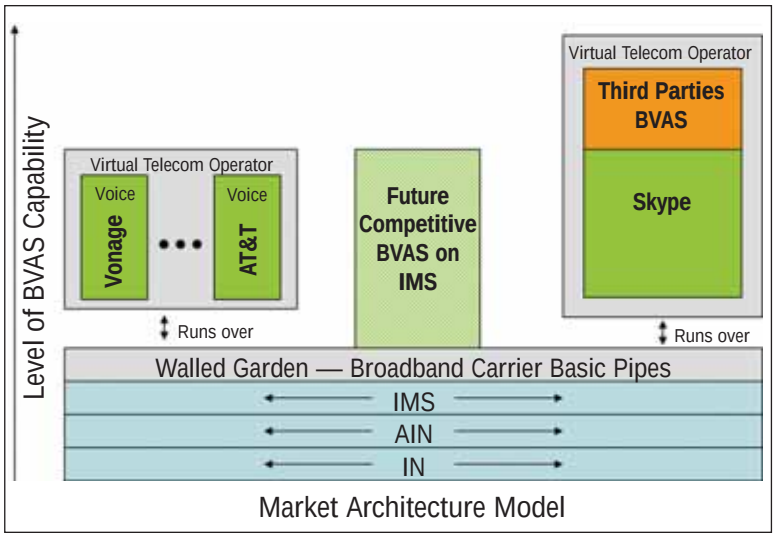
> The critical innovation of the Internet was creating option value for independent developers.

A Clash of the Titans? Or Symbiotic Entities?

All of this frenzy of multimedia content and value added services generate new revenues, revenues not necessarily shared with the broadband provider that enabled their creation. Is this free use of the DSL or cable broadband pipe an inequity that must be corrected or is it just an unintended consequence of market evolution? It is the customer demand for value added services that drives the IP telecom market opportunity. The truth is that the traditional centrist walled garden telecom provider and the emergent virtual telecom/Internet moguls both want to get all of the services revenues for themselves and not share the wealth with each other. Both have gone out of their way to create totally different end-to-end telecom architectures for offering broadband value added services (Figure 1).

Go To Table of Contents | Go To Ad Index

Figure 1. Market Architecture Model.



The quintessential examples are walled garden telecom approaches to application development and newer approaches like Skype. The critical innovation of the Internet was creating option value for independent developers, which is core to the end-to-end principal in the Internet's design. Option value here is the ability for any application developer of a broadband value added service to provide it in a consistent manner across a widest possible range of customers. That option value has produced Yahoo!, Google, Skype, Flickr, Myspace, Wikipedia, etc. It's independent of walled garden carriers and their emergent platforms like IMS, depending only on raw bandwidth and connectivity.

Yes, if you have monopoly or duopoly in access providers you may be subject to some form of arbitrary restriction, but that's a short-term phenomenon that will be cured by more access providers, including several forms of wireless access, such as WiMAX and High Speed Download Packet Access (HSDPA). From the walled garden side, they are promoting IMS — a broad, horizontal architecture that is migratory in nature providing a path from TDM toward an all IP architecture. IMS provides network management, a development environment, and a billing platform. IMS is essentially open. Successful deployment will depend on applications much more than on the actual technology. Operators who use their IMS infrastructure to enhance option value for independent developers are likely to succeed while operators who follow their historic closed garden approach are likely to only roll out fewer competitive services and risk being left in the dust by the Virtual Telecom operators (Google, Skype, et al.).

Skype is a vertically integrated proprietary solution, which is totally dependent on the availability of operator supplied bandwidth. Both claim to provide an open platform to enable BVAS. Under closer inspection one is dependent on the other, the analogy here is airlines to airports. Airlines do not own the terminals where they operate and airlines run flights only when the airport is open. Airports make money on the traffic that flows through them and on the leases with the Airlines. Without the broadband service provider (the airport) the Virtual Telcom operator (the airline) can not exist. Conversely without the Virtual Telcom operator (the Airline) there is no traffic (Airport revenue). So while a recent Moriana report states there will be a "clash of two titans," the Legacy Telcos versus the Internet Moguls, in the longer term the Internet Moguls/Virtual Telecom operator needs to either eliminate the dependency on walled garden bandwidth or come to financial terms with the Legacy Telcos. And, the Legacy Telco needs to evolve broadband value added services.

In the near term, the walled garden provider really provides only bandwidth and without enabling the value added services that the Virtual Telecom operators provide can not hope to keep and attract new broadband customers nor reap money for the sale of more and differing types of bandwidth. One recent proof point of the clash and its potential consequences is the November public statement by the CEO of SBC (now AT&T), Edward Whitacre asking for a two-tiered internet with classes of service, with different levels of QoS. End users and Virtual Telecom operators would have to pay the road tax for using walled garden pipes. Could this kill the Virtual Telcom operators and dampen consumer demand?

Winning By Increasing Option Value

For the future, the market needs an open architecture for broadband valued added services; one that is not "walled in" by the provider nor tied to a specific proprietary implementation. These architectures should increase option value not decrease it. Neither group has this perfected today. So who wins in the long run? Consumers want solutions. Application developers of broadband value added services who can most rapidly address the needs and service providers that can bring them to market effectively stand to win. We have seen this cycle of innovation and evolution before, remember the old Advanced Intelligent Network (AIN). All applications would be built using AIN standards, centrally deployed using intelligent peripherals. There were some deployments but the AIN world was complex and closely held. At the same time a parallel market event happened, Computer Telephony, an unintended consequence of the PC revolution. This revolution spawned hundreds of companies and billions of dollars providing services and applications that were connected to the network core and used its resources but lived out on the edge.

Did IN lose or were they just run over by a more open technology? Was it a technological/architecturally issue or was it simply market evolution? IN didn't lose and it didn't have a lock on the market. A la the walled garden pipes and the virtual telecom operators need for bandwidth, IN was overrun by the rate of change demanded by consumers in the market itself. The walled garden operators face the same risks today versus Virtual Telecom Operators. The cycle is happening over again, right now with consumers driving demand for broadband value added services, especially Internet-based VoIP (iVoIP), Video everything over IP, and IPTV. To maintain rapid market evolution, broadband value-added services depend on an open internet philosophy, broad option value, on unregulated, "dumb" bandwidth, and lots of it. This story is far from over so keep tuned in for more of the next wave.

Mike Katz is director of product marketing for NMS Communications. For more information, please visit the company online at http://www.nmscommunications.com. (news - alert)

VoIP Market Adoption Trends

Rich Tehrani's "Executive Suite" is a monthly feature in which leading executives in the Voice over IP/IP communications industry discuss the latest industry trends with TMC president Rich Tehrani as well providing insight and analysis on industry news. This month, Rich had the cance to speak with Deloitte & Touche's (news - alert) Phil Asmundson.

Phil is vice chairman and national managing partner for Deloitte & Touche's Technology, Media & Telecommunications practice (TMT). The TMT practice focuses on the business needs of these rapidly changing markets and brings together functional specialists addressing industry challenges. In his more than 24 years of experience with TMT clients, Mr. Asmundson has worked with virtually all segments of the communications industry including LECs, CLECs, Optic Networks, Wireless and Satellite. He is one of the firm's designated "thought leaders" and is an active speaker and author on industry trends, challenges and opportunities.

What do you think is the primary motivator for enterprises to move to VoIP? Describe what you expect will be the progression from digital to VoIP. Do you expect most companies will forklift to VoIP or do it gradually? What are you seeing among your clients?

Cost has been portrayed in press coverage as the major driver, but we believe that functionality will eventually drive adoption as cost differences even out. Regardless of the primary motivator, we're seeing that enterprises are most likely to adopt VoIP (define - news - alert) gradually, often deploying it by division or for specific call types.

What types of companies do you see emerging as the winners in delivering VoIP equipment and services (e.g., pure play, traditional telcos, cable companies)?

It's actually very fragmented right now. There are pure plays, cable companies, and traditional telcos all fighting for a piece of the VoIP marketplace. The challenge is in determining who the eventual winners will be. They each have different motivations for pushing VoIP. For the pure play and cable industries, VoIP represents an extended revenue stream, while for traditional telcos, it is both an opportunity and a threat. As a result, I think many see telcos as the enemy of VoIP, when, in reality, I think they are evaluating how to best leverage corporate assets for the benefit of their shareholders. Once VoIP takes off with the masses, I believe the telcos will continue as the dominant provider of voice-based services.

What do you see as the main benefits for enterprises moving to VoIP? What do you think they see as the main benefits?

A key benefit for enterprises moving to VoIP is that it takes advantage of the data networks they already have in place and simplifies IT/Telecom network management. Converged data/telecom networks open a world of possibilities, in terms of functionality and applications. I see this as being an application-driven market in the future. As I mentioned earlier, enterprises are still focusing on the cost side of the value equation, principally because this is easier to measure. However, as applications emerge that boost productivity through collaboration, functionality will become the dominate reason for VoIP deployment.

What are the downsides?

The downside, for now, is that there are still some issues with Quality of Service (QoS) and reliability. Companies should absolutely perform network assessments to ensure that their networks can handle their voice traffic.

Go To Table of Contents | Go To Ad Index

IT'S TIME TO GET SMART ABOUT YOUR VoIP BUSINESS.

It's time to call VoX.

If you are a voice service provider or reseller, you already know there is tremendous opportunity in the VoIP market. What you may not know is that despite similarities on the surface, not all VoIP partners are created equal. When it comes to the reputation and success of your business, it's what you can't see that really counts. That's where VoX stands out. We've united industry experts with some of the best engineers in the business to build a proprietary SIP-based architecture that is ultra-efficient and highly scalable, with no single point of failure. VoX's rock-solid solution provides superior quality—an advantage your customers will hear when they make a call.

The VoX team realizes there is more to a great partnership than great technology. Your expectations for a VoIP partner are high. We'll exceed them. You need competitive features, flexible back office management tools and aggressive prices. We've got them. Let us tell you more about our vision for the evolution of VoIP and why we are the smart choice to help grow your business.

Are you ready for the future of telecom? Let VoX help you maximize your VoIP opportunities.

Contact us today to learn more. 1-800-VoX-1699

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VOX
The Voice of Broadband

Upgrading and preparing the network for voice traffic can help mitigate potential issues like dropped calls. Many companies live and die by their voice communications, so dropped calls are a big issue. We are all used to having 24/7 telephone service, something that is hard to match 100 percent of the time on any data network. In addition, once data and voice are merged onto a single network, concerns about security protection from viruses will greatly increase, and they are likely to become boardroom issues.

Deloitte predicted that, by the end of 2005, more than two-thirds of Fortune 2000 companies would have deployed VoIP. Has this really happened? What is driving it?

VoIP is really happening, and here's why. Falling VoIP equipment prices make it more affordable and more attractive. Improvement in QoS means that call quality is no longer a big issue. Plus, even if the quality isn't what we're used to on digital phones, it is still better than cell phones. Fortune 2000 companies are deploying VoIP gradually to try it out. They are gaining experience and they like it. The only qualifier I have is that, in most cases, VoIP deployment is not universal, but rather being tested in trials.

What are the ways of implementing VoIP and what is the path most likely to be taken?

Most large enterprises will adopt VoIP incrementally, as it makes sense. There is still a degree of caution, such as perceived issues with reliability and voice quality, so they are trying VoIP where it makes sense within the enterprise and rolling it out gradually. Many enterprises will continue to rely on switched systems for some telephony needs, because it makes the most sense for them.

How about implementation? Will it be at the carrier level, at the gateway level, or at the desktop? What are the key drivers?

There are three main ways of implementing VoIP: at the carrier level, at the gateway level, or at the desktop. We believe that the desktop is the likely winner, as deploying VoIP end-to-end has the greatest impact for both the enterprise and for the service provider.

Cost reduction is always cited as an issue, although some say that with long distance costs falling, that cost savings is less of an issue to move to VoIP. Where do you still see cost reduction being an issue (e.g., internal calls, external calls, network management)?

Cost reduction is still a big issue. Some ways we're seeing our clients use VoIP to reduce costs are (from highest priority to lowest):

- Reduction in costs of external calls
- Reduction in network management costs
- Reduction in costs of internal calls
- Reduction in costs of adds/moves

At what point do you think the new functionalities possible with VoIP will overcome the issue of cost reduction in being a major driver? What VoIP capabilities do you think will drive that?

The possibilities are endless in terms of functionality. For example, specific functionality features that can drive adoption include:

- Improved calling handling and voice features
- Integration with desktop applications
- Instant workplace access, follow-me roaming
- Integration with enterprise applications

But even more than that is the issue of flexibility. VoIP gives enterprises the ability to do things any way they want to across the enterprise — by departments, and even down to the individual. This level of flexibility will be a key driver.

What are the major obstacles or challenges in moving to VoIP at the enterprise level? How about at the equipment and service provider levels?

Major barriers for deploying VoIP to the desktop include:

- Lower QoS for voice calls, although this is becoming less of an issue
- Cost of new VoIP CPE — converged systems or upgrades to add VoIP to an existing system can bridge the gap
- Quality of new VoIP CPE — enterprises need to go with a proven solution
- Weak business case — Not all enterprises need the benefits from VoIP

We're also seeing voice quality, reliability, security (viruses/SPAM), privacy, and network capacity as being major concerns to some enterprise users, but these are all issues that can be dealt with and solved. Again, a network assessment and ongoing network management is critical. Voice has different requirements than data. With data, you can drop a packet, and the message still gets through, but voice has to all go at once or you get a lot of cutting out. Making sure the network is and remains voice-

Go To Table of Contents | Go To Ad Index

compliant is the answer. Of course, we also see wireless competing head-on with VoIP.

There's a lot involved in making the VoIP decision. What do you advise your clients to be aware of?

In deciding to move to VoIP, we advise our enterprise clients to consider the following:

- Capital investment — What is the initial cost?
- Existing equipment — Can it be re-used or upgraded?
- Training needs — Will users need to be trained? At what pace?
- Infrastructure requirements — Does the network need upgrading?
- Software upgrades — What needs to be done so it all works?
- Regulation — Are there regulatory issues that impact the decision?
- Falling prices for traditional voice — Cost analysis vs. needs

What is the business case for enterprises moving to VoIP?

We look at four key areas to determine the business case for enterprises moving to VoIP:

- Benefits — What are the potential benefits?
- Costs — What are the real costs (CapEx and OpEx)?
- Risks — What are the real risks (technical and commercial)?
- What is the true opportunity (strategic benefits)?

Each of these areas needs to be fully vetted to reach an informed decision and drive value from a VoIP deployment.

How is VoIP changing the process of decision making for enterprise communications? What levels are involved today, CXO?

VoIP is an issue for the CXOs, not just the IT Department. It's important to note that the CEO, CFO, COO, and CIO all have different goals and issues with VoIP. In our research, we've found that:

- CEOs are most concerned with operating risks, roll-out plan and understanding the business case.
- CFOs are most concerned with costs, cost savings, depreciation/amortization, tax implications, and understanding the business case
- COOs are most concerned with operating risks, referencing sites, potential business improvements, roll-out plan, security threats, regulations, contingency plans, and understanding the business case
- CIOs are most concerned with costs, cost savings, business process improvement, rollout plan, security threats, network assessment, depreciation/amortization, selecting vendors/partners, contingency plan, and understanding the business case.

Understanding the business case is the only criterion that affects all CXOs.

What is your advice to companies thinking of moving to VoIP? What key things should they consider?

First, look beyond cost reduction — What can they expect to gain by moving to VoIP?

Second, before they do anything else, start with the network — Is it ready for VoIP? They need to check for interoperability, choose experienced partners, and do extensive testing. Third, they need to train their users so they can all use the system effectively. Fourth, they should move in stages, but quickly, so that a VoIP rollout is as smooth as possible.

Finally, they need to maintain good skills in both voice and data within the team that manages the network, and make sure the network is constantly checked for optimal voice performance.

What is your advice to the vendors? What key things should they consider?

Vendors need to realize that, while cost is important in talking to prospective customers, they need to keep it in perspective. The VoIP sale will ultimately be based on functionality and the ability of VoIP to transform enterprise communications. Vendors need to offer integrated solutions and partner, as needed, to enhance performance, so that they deliver turnkey solutions, including training. Probably most importantly, they need to sell to the C-Suite. VoIP is not just an IT decision.

Aggregate VoIP revenues are predicted to exceed $1 trillion between now and 2010. How is that so? What is the next generation for VoIP?

We at Deloitte expect a trillion dollar convergence industry to emerge from VoIP, enterprise collaboration software, mobile phone content, IP television, and networked games. In short, convergence will create new product categories and new markets. But, more importantly, in some cases, it will change the structure of existing industries, shifting the balance of power and altering the basis of competition. IT

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VoIP Billing: A Convergys Q&A

By Greg Galitzine

Today's VoIP (define - news - alert) market is enjoying levels of success that we haven't seen since the latter 1990's. VoIP's resurgence has made it one of the fastest growing sectors of the technology landscape, and through the marketing efforts of companies like Vonage and Packet8, it's fair to say that VoIP is hitting the mainstream.

Among the more unsung areas surrounding this technology is VoIP billing. Largely a behind the scenes practice, VoIP billing is assuming an increasingly important role as providers move away from offering all-you-can-eat bundles of minutes, to billing per transaction and billing for a plethora of new services that are being offered. And, as further advances and adoption of this technology come to fruition we will see heretofore untold new services and applications, with the concomitant need to bill for them.

I posed several questions to our friends at Convergys, a global provider of customer care, human resources, and billing services, and the subject matter experts there obliged me with some very thoughtful and insightful comments regarding the state of the market, the challenges companies and providers face when considering their billing needs, and the differences between traditional billing versus IP billing. The responses offer some good advice for providers and enterprises looking at this segment of the market.

What is the market opportunity for VoIP billing?

Voice over IP is a very active topic of conversation we have with our clients and our active deployments continue to show strong subscriber growth. Early market interest showed success from VoIP-only players.

This was accelerated over the past 18 months as cable providers moved in to provide VoIP as a key strategic element of their product offerings enabling them to solidify relationships and expand walletshare with existing customers. With the aggressive rollout and success of VoIP by cable providers, the RBOC market has begun to move into the space as well.

Whether leveraged together with traditional communication service offerings in a bundle or anchoring a platform for launching new, innovative IP-based solutions, VoIP has become a foundational service in the increasingly competitive communications market.

What are some of the challenges that need to be overcome?

- Don't underestimate the complex telephone regulatory issues. It is nothing like the video and data markets. Get educated quickly and set a strategy to stay on top of pending changes.
- Invest in enhanced customer service tools that assist the CSRs in answering the new voice service related support questions, as well as the added complexity associated with expanding bundles.
- Introduce a robust self-care offering that enables the end users to self manage their account from the initial order to ongoing changes and account maintenance.
- Eliminate all potential barriers for consumers to switch to your VoIP offering. For example, make the telephone number porting as automated and painless as possible.
- Focus on creating product differentiation in your voice offering, not just price. Specifically, look at ways to converge all the products in your bundle. This could include integrations such as caller ID on the television.
- Realize that customers don't care what technology is delivering the voice service. Focus on providing reliable service with the features and functions that customers want.
- Recognize that a single bill is a key element for bundling voice with legacy offering and new services. Consumers are increasingly demanding a single bill.

VoIP is a key element of bundling, therefore it is imperative to keep the following in mind:

- Any errors in pricing, billing, customer care, and the like, will have a negative long-term effect on the success of a provider's voice offering and overall ability to expand its menu of converged service bundles.
- Today, as many operators introduce new service bundles, they patch new processes and systems into their existing operational architecture, often relying heavily on manual intervention to accomplish convergence.
- This approach causes rework, drives up operating costs, and delays time-to-market, for a number of reasons:
  a. Disparate processes often cannot be automated, increasing the need for manual intervention, increasing time required to provision services, and the likelihood of error.
  b. Disparate systems interfaces lead to order fallout and mediation errors, accounting for up to 65% of an operator's revenue leakage problem, itself conservatively estimated at anywhere from 5% to 11% of total potential operator revenue in studies conducted by the world's leading telecom consulting companies.
  c. Multiple back-end systems require multiple front-end systems — it is not uncommon for a customer service representative to have more than 20 applications installed on their desktop, using 10-15 of them at any one time — driving the need for more highly trained, highly skilled CSRs subject to a higher rate of staff turnover.
  d. Multiple BSS systems raise risk, with more vendor relationships to manage, more points of failure, and longer down time, in an era where maintenance costs are high and associated labor costs are escalating.

What should these decision makers ask for when considering a new billing solution?

They should use the introduction of IP services as a catalyst to upgrade their BSS and OSS to convergent platforms that can support the rapid introduction of new services through configuration not customization. They should not wait until their legacy environments can no longer handle the scalability, reliability, billing, rating, and service management requirements. They should look for a modular system that allows a pain-free evolution for the BSS environment towards a convergent, real-time environment at their own pace with minimal risk. IT

Greg Galitzine is the editorial director of Internet Telephony.

VoIP: Challenges & Rewards

By Curt Champion

For the past six years, cable operators and other competitive broadband providers have been in a head-to-head competition with telephone companies battling over high-speed data in order to provide Internet access and advanced digital services. Cable and broadband providers who have been winning the high-speed data war are aggressively rolling out full-scale deployments of new IP-based services, such as VoIP, that strike right at the heart of the telephone companies' PSTN-based business. Traditional telcos have responded by launching initiatives aimed at providing IP-based television service to attack cable's traditional markets. As a result, fixed operators, either traditional cable or wireline telephony-based, are competing more and more across a bundle of "Triple Play" (voice, data, and video) services enabled across their networks. Offering this broad range of bundled services is not only critical in the competition between cable and telephony operators but also a key component for the fight back against cheap rate voice and VoIP single-service providers.

The rewards of winning this battle are considerable, but the challenges can be daunting. The truth is that providing these advanced IP-based services will only grow more complex in the future. Any false step in pricing, billing, packaging, customer/service management and bundling can have a long term effect on the success of an operator's voice offering and overall growth of convergent bundles. Delivering the right set of products and bundles quickly to market and supporting these offerings with efficient customer service is crucial.

Clearly, this places increased importance and emphasis on customer care and billing operations. Today, many operators have difficulty delivering advanced services to market in a timely manner due to their legacy systems. In addition, as many operators introduce new bundles, they typically patch new processes and systems into their existing operational architecture, often relying heavily on manual intervention to accomplish convergence. As a result, they end up with multiple stove-piped BSS/OSS systems, creating an environment of disparate processes, user interfaces, systems interfaces, and systems themselves that create additional problems, rather than solving them. Given the success of bundled service offerings, the scale and complexity of convergent services is sure to grow, further exacerbating the situation.

The Convergys Infinys solution offers comprehensive, convergent BSS software that assists operators in this competitive environment. Infinys uses a modular, pre-integrated approach to providing rating, billing, customer service management, order management, partner management, inventory management, activation management, and mediation management capabilities. This enables operators to implement a comprehensive BSS — or to choose a single application and evolve their BSS environment to a convergent environment with minimal risk. The flexibility and true convergence capabilities of Convergys' Infinys software greatly reduce time to market for advanced IP services, such as VoIP, as well as convergent bundled offerings.

In addition, the Infinys CSM application was built with significant knowledge from Convergys' unique experience managing more than 54,000 CSRs handling about 1.7 million interactions per day in 68 contact centers worldwide. The result is an application that provides significant call center efficiency for operators who are finding customer service more important than ever in an increasingly competitive environment. With more than 20 years of experience in billing and customer care, Convergys complements Infinys software with a broad portfolio of professional and consulting services and deep technical and operational expertise.

As a result, many traditional cable, telephony and alternative service providers have selected Convergys to support their business support systems (BSS) and many of their key operational support systems (OSS) requirements as they move to support VoIP and convergent bundles.

An example of this can be seen at Cox Communications. In less than a decade of being a telephone service provider, Cox has gained recognition for its success in expanding into new markets and growing its customer base. With over 1.4 million telephony customers, customers are seeing value in choosing Cox. The key differentiators provided by Cox are price, product bundle and overall system reliability. Specifically, the Cox bundling strategy has been effective in attracting and retaining telephony customers, with 24% of customers in the telephone markets subscribing to all three products (voice, video and data). Additionally, the bundle has provided significant improvement in churn reduction for Cox customers that have two and three products — with over a 50% decrease for customer with one versus three services.

Convergys is currently supporting all of Cox's 6+ million customers, across all products and lines of business. Initially, Cox deployed Convergys' ICOMS software — the industry-leading convergent voice, video, and high-speed data billing and subscriber management solution for cable and broadband service providers. In 2003, Cox and Convergys expanded its agreement to include Infinys. The advanced capabilities of Infinys will provide Cox the opportunity to broaden its multi-service bundling, pricing, and billing to support the company's rapidly expanding variety of voice, video, data and content.

Curt Champion is vice president of market and product strategy for Convergys Corporation's Information Management Group. For more information visit the company online at http://www.convergys.com.

Power Protection and Management Products & Solutions

In today's "always on, always available" world where businesses can't stop and downtime is measured in dollars, the unfortunate fact is that power quality is worse than ever. Indeed, there is data to suggest that a typical computer is subjected to more than 100 power problems each month. Research by Frost & Sullivan suggests that power interruptions results is financial losses of up to $50 billion each year for U.S. businesses.

What's worse is that power companies can do little to alleviate these issues because the power is subjected to numerous outside influences as it travels to the customer sites. The good news for the consumer, the enterprise, the service provider, the call center, the SMB, and the SOHO is that there are several firms marketing power protection devices that are designed to solve these very problems.

Uninterrupted Power Supply (UPS) Systems are designed to protect equipment from downtime, damage, and data loss due to power problems. However, which power protection/management solution to choose is complicated by the convergence of voice and data. New technologies such as ADSL broadband, VoIP, and PoE are expanding the range of possible applications for power protection.

In this month's product round-up, we have featured ten providers of power protection and management products and solutions. What you will read here is merely a snapshot of each firm's offerings. To find out more about any of these companies or to inquire about solutions tailored to your specific networks, we encourage you to contact these companies directly.

APC

http://www.apc.com

APC (news - alert) offers comprehensive AC and DC power solutions designed for both home and corporate environments to improve manageability, availability, and performance of sensitive electronic, network, communications, and industrial equipment. Wherever data is created, transmitted, or stored, for protection from laptops to high availability facilities — and everything in between — APC has a solution.

APC has solutions to protect an entire VoIP network, including protection for IP phones, access points, wiring closets to Intermediate Distribution Frames (IDFs), Main Distribution Frames (MDFs) and data centers.

APC Smart-UPS RT is a family of high-density, performance UPSs for voice and data networks, medical labs, and light industrial applications. Capable of supporting 10kVA in a 6U rack/tower convertible form, users can support power hungry blade servers or heavily loaded equipment racks. High power internal chargers allow virtually unlimited additional matching battery packs to comply with aggressive runtime demands of business-critical systems. Customers with harsh power environments looking for extremely tight voltage and frequency regulation, internal bypass, and input power factor correction typical of double conversion online topology will get them in the Smart-UPS RT

APC Smart-UPS protects critical data by supplying reliable, network-grade power in either traditional tower or rack-optimized form factors. High real power output, generous runtime, sine wave output, 16-segment LED visual display, and intelligent battery management make Smart-UPS a leading server class UPS. Included PowerChute management software provides IT administrators the comfort of safe system shutdown and advanced UPS management. Additional manageability is available through the SmartSlot, an internal accessory slot that allows installation of optional accessories to enhance the performance of your UPS.

Go To Table of Contents | Go To Ad Index

CyberPower Systems
http://www.cyberpowersystems.com

CyberPower's (news - alert) recently expanded line of products now includes both lower cost UPS units for the general consumer, as well as higher end units for applications needing automatic voltage regulation or pure sine wave output. This new product line fully complements its retail line of products and is capable of serving the reseller community in the SMB sector.

The new Reseller line includes: The Utility line, which is standby offline UPS, the Office line, consisting of line-interactive AVR UPS, and the Professional line, which is pure sine wave line-interactive AVR UPS. These units are produced in tower form factors and rack mounted versions in both 1U and 2U designs currently.

The Professional Series UPS are designed to protect office computers, corporate and departmental servers, computer workstations, phone lines, as well as peripherals. Automatic Voltage Regulation ensures that your sensitive electronic equipment receives only clean, consistent, regulated power. The UPS provides long-lasting pure sine wave backup power in the event of a power failure.

The PR3000 series UPS is designed to protect corporate and departmental servers, critical broadband network equipment, computer workstations, as well as today's power-hungry multimedia computer systems. Multiple serial ports allow for software control of multiple servers. Occupying only 4U of valuable rack space, the Professional Rack Mount series packs more VA capacity into smaller cabinets.

Eaton/PowerWare
http://www.powerware.com

Eaton (news - alert) is a global provider of comprehensive power quality and backup power management solutions, consistently delivering the high 9s of availability demanded by today's digital economy under the Powerware brand.

Powerware solutions include UPSs ranging from 300 VA to more than 4,000 kVA, as well as DC Power Systems to suit any application. Its software and connectivity devices incorporate all the features customer's need to proactively manage their systems, from basic monitoring and shutdown to predictive analysis and power management.

The new Powerware 9155 UPS delivers a genuine triple-play: the latest technology advances, a stylish and user-friendly design, and a budget-pleasing price. This double-conversion online UPS resolves all nine of the most common utility power quality problems and supplies clean, continuous power to all connected equipment. The innovative design of this UPS delivers the industry's best performance combination:

The cumulative result of these advancements is maximum economy, adaptability, and power performance.

A scalable architecture makes this an uncommonly versatile UPS. Choose from four models to match today's requirements, and upgrade kVA rating in increments as needed. Or, use the signature Powerware Hot Sync paralleling technology to simply upgrade from a single-module system to a multi-module system for added capacity or redundancy.

The UPS comes bundled with LanSafe power management software that protects data and system integrity through remote monitoring and management. Connectivity options enable secure, remote power management and alert/alarm notification via your existing LAN or the Web.

Liebert
http://www.liebert.com

Liebert (news - alert) provides online protection for network servers, bridges, hubs, routers, storage devices, and critical workstations. Most users of new IP telephony systems expect the same high level of telephone system availability they enjoyed with traditional systems. Uninterruptible power for

edge-of-network equipment is critical for achieving this level of service, and the new Liebert IP Telephony Availability System ensures it.

The Liebert IP Telephony Availability System brings data center-level power protection to network edge equipment in remote access points. Version 1.0 has met the Cisco AVVID Partner Program test criteria for interoperability with Cisco CallManager Express 3.1 and Cisco Unity Express, release 1.1.2. Local Liebert representatives can tailor the system to other equipment.

Combining IP telephony protection capabilities not found together in any other system, the Liebert IP Telephony Availability System includes:

• True online protection via a UPStation GXT2U double-conversion UPS, which provides protection far superior to that of traditional line-interactive UPS's.

• Power system monitoring, communications and remote control via a Liebert OpenComms Web card.

• Continuous power availability via a Liebert 2U POD that allows you to bypass the UPS for maintenance, and also provides power output distribution.

• System security via a Liebert Foundation wall-mount or free standing enclosure with a locking door and hinged back, providing both security and ease of maintenance.

• Longer uptime via an optional extended battery.

MGE UPS Systems

http://www.mgeups.com

MGE UPS SYSTEMS (news - alert) provides power solutions for PCs and enterprise-wide networks, mission-critical telecommunication systems, and industrial/manufacturing processes. It's comprehensive product offering includes Uninterruptible Power Supplies (UPSs), inverters, rectifiers, power management software, active harmonic conditioners, and surge suppressors that provide MGE's customers with end-to-end infrastructure solutions.

With its Total Quality Management and PowerServices programs, supported by a network of 900 service specialists in 170 centers worldwide, MGE's customers are promised the highest quality of service throughout the complete life-cycle of their installations.

MGE's Pulsar ellipse USBS is the UPS of choice to maximize the availability of PCs and workstations in small and home office environment. The new com port of Pulsar ellipse is designed for both USB and Serial communications. Their distinctive, compact and lightweight design is the result of MGE's heavy investment in R&D to provide users with the best combination of performance and size. This is a line that provides High-Density Power Protection for Servers, Storage Systems and Networking Equipment Pulsar Evolution Rack and Tower UPSs offer network administrators the high-availability power solution they need

Applying the same technology MGE uses in its high power data center UPS modules, it has developed the Galaxy 3000 to be an ultra-high availability solution for lower power ranges. The Galaxy 3000's feature-rich offering includes a power factor corrected input, internal batteries, maintenance bypass, and four color graphical user interface all standard making it a truly all-in-one compact solution.

Minuteman UPS

http://www.minutemanups.com

(news - alert) Enterprise networks encompass more than just servers and workstations — bridges, data switches, hubs, routers, and telephone systems all are part of an enterprise system requiring clean, continuous AC power to ensure data integrity, hardware stability, and maximum equipment life.

Go To Table of Contents | Go To Ad Index

Every Enterprise Series UPS produces a continuous, true sine wave output that these sensitive, mission-critical devices demand.

MINUTEMAN Enterprise Series models are available in various sizes and can be easily configured for use as a rack mount, wall mount, tower, or desktop unit. They are designed for harsh conditions and constrained locations and are 2U and 3U and only 16 inches deep — MINUTEMAN also has released its ENTERPRISE 1U Series.

When incoming utility power falters, MINUTEMAN's powerful Double Buck and Double Boost voltage regulators handle the majority of the line conditioning workload while MINUTEMAN's Independent Battery Bypass topology ensures that, even if the UPS battery becomes discharged or disconnected, the Enterprise UPS continues to condition the incoming AC power and correct every electrical anomaly, short of a complete power blackout — in which case units switch to battery backup in 1.8 milliseconds. Every Enterprise Series Battery Pack includes an internal, independent charger that can recharge the battery system in as little as two to five hours.

Each model also includes a serial communications cable and includes the MINUTEMAN SentryII power management and shutdown software. They also feature a plug-in expansion slot for MINUTEMAN's Computer Interface Card (CIC), which allows for remote monitoring.

Minuteman offers products for nearly any other type of implementation as well: SOHO, home use, SMB, Networking, Telecom, PoS, Education, and more.

OPTI-UPS

http://www.opti-ups.com

An OPTI-UPS (news - alert) is an advanced UPS consisting of a battery source, a converter, and control equipment. It is designed to prevent spikes, surges, sags, transients and blackout from reaching your equipment. When AC power is present, the UPS filters small fluctuations continuously. When AC power fails, the unit employs its internal maintenance-free battery to supply back-up power without interruption.

The OPTI-UPS family Durable Series B family offers ultimate performance and newly improved features and is designed to provide robust battery management system. The DS-B series provides true online power for servers, workstations, networking equipment, telecommunications systems, and other critical equipment. The double conversion online topology protects against all brownouts, blackouts, voltage fluctuations and surges. True sine wave output and zero transfer time ensure perfect protection.

The Durable Series B has 4 to 12 outlets, multi-lingual and multi-functional LCD display, built-in serial port that works with FREE OPTI-SAFE Xtreme software to manage all kinds of power information and problems. Moreover, it offers SNMP card and USB port interface for extra options in network management.

The PS1500B UPS is a solution for small offices and SMBs that require sine wave signal and high capacity power supply units with longer backup time. High UPS capacity, strong AVR, robust batteries and 8 power outlets split into 3 groups allow backup of Web, file, and mail servers, while leaving enough free outlets for other equipment like routers, modems, switches, which can be powered down or up separately either from a remote location or upon any programmable event.

Riello UPS

http://www.riello-ups.com

The Riello UPS (news - alert) range includes both line interactive and online systems. An online UPS, such as the Riello Dialog Plus or Dialog Dual, where the inverter constantly powers the load, is recommended for the protection of a PBX.

The Dialog Plus is an online UPS specifically designed to solve the power protection problems facing VoIP and PoE technologies. It is available in 700VA to 3000VA power modules and both floor standing and 19" rack mount formats to offer the maximum number of installation options. The UPS have been designed to occupy the smallest possible foot prints.

Dialog Plus is available with a standard internal battery, which typically will run for 13 minutes at full load. This can be extended using modular battery packs to over 7 hours. The modular battery packs can be recharged in less than 8 hours and automatic battery testing and management help to prolong their working life.

The new Multi Dialogs from Riello Galatrek are multi-mode UPSs specifically designed for call center type organizations deploying Multi-Channel Services and VoIP. They are 35% smaller than traditional transformer based systems making it easier to find them a space within compact computer and plant rooms. The UPS design is modular in approach with a Mean Time Between Failure (MTBF) greater than 250,000 hours.

The Riello UPS range also includes two ideal UPS products for domestic and small office environments — Plug Dialog and Win Dialog Plus. Both are line interactive UPS and use filters to suppress spikes and transients, and electrical noise that may be present on the incoming mains supply.

Tripp Lite
http://www.tripplite.com

Tripp Lite (news - alert) offers power protection equipment for nearly all implementations, including virtually any combination of: mission-critical servers, servers, workstations, small servers, PCs, home entertainment equipment, modems and other peripherals, and telecom applications.

In addition to maintaining power during an outage, as an added benefit, Tripp Lite UPS systems also protect against power surges and disruptive line noise. Tripp Lite has a UPS system to protect and support every computer and electronics application — standby, line-interactive and on-line models from 300 to 30,000VA. Tripp Lite also offers NEW 3-Phase UPS Systems.

Tripp Lite SmartOnline 3-Phase UPS Systems provide mission-critical equipment in computing, networking, telecommunications or industrial environments with the highest level of power protection available. Double-conversion online operation with zero transfer time to battery completely isolates sensitive equipment from every power problem on the AC line. True on-line operation completely isolates connected equipment from all power problems: blackouts, brownouts, surges, line noise, even harmonic distortion. Double-conversion operation continually converts incoming AC power into DC power, and then resynthesizes it back into normal AC power.

The SmartPro family of intelligent, line-interactive UPS systems are specially designed to provide mission-critical network, telecom, and server applications with a superior level of power protection and control. Long lasting battery backup supports up to four servers during blackouts. Automatic voltage regulation constantly monitors incoming voltage and “trims” or “boosts” the voltage to supply consistent power without draining batteries.

Powerful surge suppression safeguards against damage from spikes and line noise.

Every model includes award-winning PowerAlert Software to facilitate graceful unattended shutdown and unparalleled network management and control — including from wireless devices.

Valere Power
http://www.valerepower.com

Valere Power (news - alert) is a supplier of DC power systems to its customer base, which includes both wireless and wireline carriers. Its Mini DC power family are innovative, flexible, full-featured power systems with a current output of up to 400 amps. Power levels range from 500W to 10,000W. Advanced controller and battery back-up management capabilities are also available.

At only 1RU and 2RU, Valere’s Mini DC Power Systems offer an unprecedented combination of high-power and small size for telecommunications, embedded, datacenter or enterprise applications.

Valere’s Mini DC Power Systems provide the needed voltage for Blade servers, VoIP/PoE and other enterprise data center equipment with high reliability and 35% less heat emission. Its small footprint and 4X power density means the system can go where no other power system will fit and still leave room for other revenue generating equipment.

The deployment site of CPE is always a great unknown, and Valere’s Mini DC Power Systems provide the ultimate flexibility for these applications, with current levels that span from 10 to 400 amps. The Mini DC Power System’s multiple outputs — 12V, 24V, and 48V — provide a unique solution to powering multiple overlay networks, 2-way radio, and paging systems.

A powerful system controller and elegant product design make this a simple to install and understand system that is easily scalable — start with 10 amps and grow to 400A in a single system. IT

Go To Table of Contents | Go To Ad Index

AWARD WINNING VOIP SERVICES FOR INTERNET SERVICE PROVIDERS

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Why SMBs Need to Consider Hosted PBX

By Greg Galitzine

At some point in time, every business owner — regardless of the size of the company — is faced with the challenge of purchasing a phone system. In some cases, successful businesses simply outgrow their current solutions. In some cases, the existing solutions reach the end of their useful life. Of course, there are the "greenfield" opportunities that come about as new companies sprout from the pages of a business plan and need to consider the physical elements of starting a business, like location, office equipment, staffing, and communications.

Small and medium business (SMB) owners are faced with a multitude of choices when it comes to communications equipment manufacturers, and they need to ask themselves what features they want/need, how much they are willing to spend, how fast they expect to grow, in addition to considering the need to hire a specialist to deploy and manage the solution in-house.

Choosing between Hosted PBX (define - news -alert) technology and deploying a PBX at the customer location often comes down to a "religious" decision between deploying technology in-house with all the control and security that it implies versus letting your provider host services in their network, while you get to focus on your core business competencies. Let's face it, not everyone has the staff or technical expertise to manage their technology needs — these types of small businesses are the perfect candidates for hosted PBX services. These solutions allow the SMB to do what they do best, while the service provider handles their communications needs.

At the end of the day, the goal of a Hosted PBX solution is to simplify communications for the SMB while providing some of the must-have features of the online world (e-mail integration, Web-based management). For that reason, among others, SMB owners are increasingly looking to hosted PBX services to fulfill their communications needs.

Why? What are the benefits of hosted versus premise-based solutions? And, how does a hosted PBX give small companies a competitive advantage?

Traditionally, small business owners did not have as many choices nor did they have any "purchasing power" to sway manufacturers of phone systems to provide features and cost structure geared toward the SMB market. Hosted PBX technology enables small businesses to purchase connectivity and the features that they need at a price that is within their budget. In fact, they are able to deploy communications solutions that will make them appear to all the world as if they are a much larger enterprise.

One way to describe this is "Big business benefits on a small business budget."

Among further cost considerations, deploying a Hosted PBX solution means there is no significant up-front commitment to installation and maintenance, nor is there the commitment to what can be a steep learning curve regarding how to deploy and use the system. That translates to lower capital outlays on staffing and support infrastructure. Good service providers will provide 24/7 customer service and will often proactively manage the solution, so that if a problem occurs, they can begin addressing the issue long before the customer even realizes there's a problem.

And that's good news for the CFO who wants to know what the TCO of the communications solution will be. A largely fixed monthly cost, with service and software upgrades rolled in makes it an easier sell to those who hold the purse strings. And it should be mentioned that since we're discussing IP-based communications, the lower monthly costs of making phone calls will also go a long way to help make the CFO smile.

But it's the so-called soft benefits of moving to a completely IP-based system — especially one that is hosted by the service provider — that are driving the decision to adopt these solutions. IP-based solutions deliver increased efficiencies, with easier integration of voice into other existing business processes, such as integration with Microsoft Outlook for click to dial directly from the corporate directory or integrating your communications with back end customer databases for increased customer service or contact center functionality.

Moves, adds, and changes, that dreaded administration of new employees and employees changing physical locations, which used to cost a fortune — in time as well as money — become a simple matter of a mouse click or two. In fact, by taking advantage of a network-based Hosted PBX solution, whole remote offices can be brought online and re-configured in a matter of hours by a single remote user sitting at a computer. (Of course, this does not take into account the process of porting existing telephone numbers from the LEC, a process, which can take weeks; but in the case of new numbers it is a much faster process.) This is especially beneficial in the case of a business that has the need to set up temporary campaign-type situations or other transient work locations, or multiple locations (without skilled IT personnel on site).

Another benefit of the Hosted PBX has to do with disaster recovery. Nowadays, in a post-9/11, post-hurricane Katrina world, the need to prepare a business' communications systems for unexpected disasters has become table stakes. However in a traditional, premise equipment-based scenario, the costs of disaster preparedness are high, when one factors in the necessary levels of redundancy, failover, multiple site networking, etc. A network-based hosted PBX solution affords a much less expensive alternative. If a major disaster were to hit, you could simply have all your calls redirected to a temporary telephone number (such as a cell phone), send your employees home or relocate your equipment to another IP-enabled facility. Since all the call processing and features are tied to servers that sit in the network, all the features are tied to the "cloud" ensuring availability in the event of a disaster.

Another benefit of using a Hosted PBX is that I can increase employee productivity when they are mobile. Taking advantage of a softphone on a laptop computer, for example, an employee can log in from anywhere in the world, provided they have a broadband connection, and most of the features and functionality of the phone that sits on their desk back at headquarters is transferred to the softphone regardless of location. This makes the employees more responsive to calls, and the ability to transfer calls or bridge third parties into a conference from anywhere in the world speaks volumes

regarding increased productivity and a professional-looking response to customer needs. And again, it gives the small business an outward appearance of a large, competent, professional organization.

Lastly, since a hosted solution is not necessarily tied to a specific phone vendor, the SMB is free to choose phones based on their needs, be they cost, features, vendor preference, or the like. The increasing array of available endpoints means that SMBs are free to choose what works best for them.

If the SMB contracts for Hosted PBX services from a service provider, they would do well to consider a carrier that provides the broadband "pipe" as well as the Hosted PBX functionality. By choosing a vendor that provides the full package of connectivity and services, SMBs enjoy other benefits such as Quality of Service guarantees (and one provider to point the finger at if those levels are not met), a secure and reliable network that provides voice traffic priority, access to constant solution upgrades, and more.

As mentioned earlier, the decision to embrace a Hosted PBX solution often comes down to a religious debate. But as research and analysis from nearly every major analyst firm shows, enterprises of all sizes — particularly the small and medium sized business segment — are increasingly setting their sights on Hosted PBX as the communications solution of choice. The benefits are clear. IT

Greg Galitzine is the editorial director of Internet Telephony.

By Clive Jones

IP Telephony that Matches the Quality and Expectations of Traditional Telephony

The United Kingdom's Bedfordshire County, located about 40 miles north of London, has been inhabited for more than 5000 years. Reflecting its long history, the county is steeped in tradition and still has some quaint, rural features.

Despite its picturesque thatched roofed houses, the county's government is anything but old-fashioned. In fact, the Mid Beds District Council, the regional authority for one-third of Bedfordshire County, is at the forefront of using the latest IP technologies to deliver innovative solutions for its 150,000 households.

The Challenge

Like many other government entities, the District Council is under constraints — the need to deliver increasing levels of citizen services must be balanced with the need to hold the line on costs by delivering these services more efficiently.

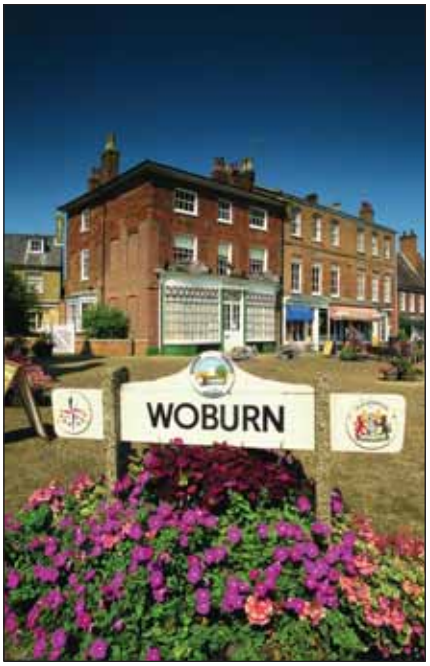
To meet these challenges, the Council has become one of the UK's leading proponents for switching to IP telephony and video communications to save money and improve its interaction with citizens.

Recently, the Council began an impressive project to update its existing offices with the latest telecommunications capabilities, create small branch offices and video kiosks to interact with local citizens, and prepare for the merger of its two main offices into a single central office.

The Solution

Although the existing Mitel PBXs were only four years old — and were fine for the current operations — the Council realized that the circuit-switched system could not handle the innovative services it wanted to add. In addition, the Council determined that it would be expensive and technically complex to adapt the old system for the structural changes required to move two offices into a single, new location.

To meet its management goals, the Council decided to replace its traditional voice system with an IP telephony system featuring a Cisco CallManager in each of its two main offices. At the same time, it selected XelorRate Service Quality Manager software to ensure the reliability, performance and quality of real-time communications over a converged Cisco IP network.



The installation of XelorRate software (news - alert) was a conscious part of our management plan, because the Council realized that the IP telephony system had to operate flawlessly for the plan to be successful. The process couldn't proceed without the assurance that the new system would consistently deliver real-time communications that were at least as good as the old-style circuit-switched system it was replacing.

Go To Table of Contents | Go To Ad Index

XelorRate is a Linux application for the Red Hat operating system that automatically integrates with the Council's data network and IP telephony system. The software leverages industry standards for quality of service (QoS) to deliver simplified network configuration, real-time automated packet prioritization and daily policy management.

With awareness of the network topology, knowledge of all authorized calls, and proactive management of prioritization, XelorRate software eliminates the common QoS problems that have plagued IP telephony deployments, such as packet loss, jitter and, competition between data and real-time applications.

XelorRate software simplifies the management of the converged network and automatically responds to changes in telecommunications layout. The automatic mapping of the IP telephony system is enormously helpful as new desktops are added and when the Council moves into its new offices.

The Results

The combination of Cisco IP telephony with XelorRate software allows the Mid Beds District Council to bring innovative government services to the district's citizens with high-quality voice and video communications over the converged network. In addition, the new system provides a number of financial benefits, including reduced infrastructure costs, lower ongoing communications expenses, and manpower savings through reduced technical complexity.

The IP telephony system will allow the Council to save £80,000 (approximately $144,000) in wiring costs alone as we prepare to move into new headquarters in July of 2006. The savings derive from running all building systems off a single network wire, instead of using multiple wires for data, telephony and building management.

In addition, the new system has already allowed the Council to reduce technical headcount and save £50,000 (approximately $90,000) in fully loaded staff costs by converging the telephony and data infrastructures and help desks. Formerly, two staffers were required just to support the Mitel phone system. Now, one person has been shifted over to the merged IT/telephony help desk and another

post has been freed. The change also has been more convenient for users because they can get all their phone and IT questions answered by a single organization.

XelorRate software delivers other savings with simplified network operations. By using SNMP to automatically discover the IP telephony network and topology and then configuring the network elements according to industry best practices and the network equipment provider's reference manual for QoS, the software has dramatically reduced the management headaches required for maintaining an effective real-time communications system.

Best of all, the resulting IP telephony network maps are accurate and always up to date. In most cases, IT managers don't create accurate IP telephony network maps and then continually update them with all the elements and endpoints. Without XelorRate software, it would be almost impossible to keep up with all the IP telephony network changes, especially in a situation where have employees frequently switch desks, work from remote locations, and even work from home on softphones.

By continuously reacting to changes in the network, XelorRate software allows the Council to provide significant flexibility for its employees and elected members. Because XelorRate software automatically re-maps the network to account for changing endpoints, the system can easily handle members and employees who use softphones from wherever they choose to work.

XelorRate software also allows for easy diagnosis of any problems with call quality. Before the installation of XelorRate software, there was no effective way to solve the occasional problem with words dropping from the conversation or the call dropping altogether, because the complaints were so anecdotal. It was impossible to tell if the drop was an issue caused by the IP network, an endpoint, a router, a PBX, an IP-to-mobile connection, or a mobile network provider.

XelorRate provides complete reports that allow pinpointing of any problems by searching the service logs for an event during a particular day and time. Although CallManager shows how many calls were attempted, it doesn't tell you how many were actually successful from a quality perspective. For the first time, it is possible understand which of the many possibilities require change to restore service quality.

Perhaps the most important benefit of XelorRate software is that it gives us the same feeling of confidence as traditional circuit-switched telephony. XelorRate gives tremendous peace of mind, because it determines the available priority capacity for the entire call path when it establishes the call and doesn't jeopardize existing calls when other demands are made on the network.

By implementing XelorRate software, dropped calls, voice quality issues, and management headaches that can otherwise occur with IP telephony deployments have been eliminated. It's a great

relief to know that the CEO will not be complaining that his phone failed while he was talking with an important newspaper editor or individual.

The Future

The Mid Beds District Council was one of the first of the UK's 388 district councils to migrate to IP telephony. Because of the early adoption, the Council rolled out the new system relatively slowly and methodically in order to work out any kinks before expanding. Now, with confidence that the system is working well and that XelorRate software can ensure circuit-quality communications, IP telephony is being extended to all 300 employees.

In closing, the Council's deployment architecture, strategies, and results will be used by other districts and serve as a national model for IP telephony. In fact, the Council are already sharing its results with the other two districts within New Bedfordshire County, and expects to submit them to the Office of the Deputy Prime Minister as an IP telephony migration strategy for other district councils. IT

Clive Jones is head of customer services and information technology for the Mid Beds District Council. Earlier in his career, he held a variety of positions with British Telecom. For more information on the technology that Mid Beds chose to configure, deploy and manage the quality of service for its converged network, please visit http://www.xelorsoftware.com. (news - alert)

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By Erik Linask

Government Certified VoIP

About Walter Reed

The Walter Reed Health Care System provides comprehensive health care for more than 150,000 soldiers, other service members, family members and retirees in the National Capital Area. The System's 6,000 staff are stretched across 10 major treatment facilities in three states — Virginia, Maryland, and Pennsylvania, as well as Washington, D.C. It holds status as a worldwide referral center for patients with the most complex and challenging illnesses, and is the Army's leading center of clinical research and innovation. Walter Reed Army Medical Center is one of the systems' facilities, located in Washington D.C. Certainly, it is expected that a top-notch medical facility would also have the latest in telephony technology.

The Objective

When Walter Reed Army Medical Center (WRAMC) decided to move to a Gigabit Ethernet backbone, and to adopt a single network IT system, it was also decided the incorporating Voice over IP was also the way to go. The decision to convert to VoIP, as opposed to some of the other solutions available, can certainly be attributed to cost savings — both in initial investment as well as minimizing long distance spending in the long run.

But there were other factors as well, which included the ease of mobility with a VoIP (define - news - alert) system. In a facility as geographically dispersed as WRAMC, it is a frequent necessity to move staff from one location to another, which means also having to move communications equipment. With a VoIP system, staff can, literally, pick up their phones, move them to a new location, and plug them into the network. Of course, as Arthur Doutt, Project Manager for Network Support Service for Walter Reed Army Medical Center, noted, that level of simplicity can lead to moves being made without the knowledge of the network administrators — but that dilemma is certainly better than the alternative, that moving locations is a difficult and time consuming process.

The VoIP Solution

So, between cost savings, a single network, and the ease of use factor, the decision to move to VoIP was reached. Then the question became which provider to choose, and that was narrowed to three options, of which Sphere Communications was the ultimate selection.

The facility chose Sphere's PBX because of its interoperability open system — other option WRAMC explored were proprietary systems that would have required additional expenditures, like running Power over Ethernet to the desktops, which the facility did not have at the time. Running a Foundry Gig-E backbone, Walter Reed needed a vendor that could guarantee voice quality over a third-party network, which is precisely what led to the decision to purchase Sphericall. Indeed, Sphere prides itself on its open approach to interconnecting with devices from various vendors.

Said Todd Landry, Senior Vice President at Sphere: "We have taken the approach consistently that these systems should be open, and that different components should interwork with one another to allow businesses and enterprises to make choices that are right for their businesses."

The cost of the Sphere PBX was also lower than other competitors'. What's more, according to Doutt, the service Walter Reed received from Sphere during the process was second to none. Sphere brought Walter Reed's personnel to Chicago for an initial demo, did a small-scale installation locally once they became one of the finalists, and also offered features, like video to the desktop, that other vendors were not offering at the time. What's more, Sphere was committed to the federal government space.

"One of the other things that was key to them was the ability to assemble ad hoc conference calls," noted Landry. "One of the ways they are able to do that via a set of conferencing bridges that become available right on the screen of your PC. You can assemble conferences very quickly — you can have people call in, you can drag and drop, you can text them and have them join, you can have private or public bridges."

Go To Table of Contents | Go To Ad Index

The Sphere Implementation

What Sphere provides for Walter Reed is a software platform. Sphericall provides the PBX functionality, the ability to switch media streams in the core network, as well as the feature set to the Polycom IP endpoints. (Polycom is one of about 30 endpoints, according to Landry, that Sphee has certified for interconnection with Sphericall.) Sphere also has installed a range of media gateways, conferencing bridges, and an interface to the PSTN — all of which runs on top of Walter Reed's choice of IP network's, the Foundry product, in this case.

The implementation began in 2002 as a proof of concept, with about 50 phones. It then was expanded to 160 phones, and then to 300 users by the beginning of 2004. Those 300 users were spread through three buildings on the campus and were planned for a one-year test period. This was not only to identify and resolve any network issues, but also to get the network administrators and engineers a chance to know the system before it became and enterprise solution. After a year had passed, the implementation was stretched to about 1,000 phones in six buildings.

At that point, the program ran into a roadblock — a "cease and desist order," as Doutt called it. The reason: a requirement that any IP PBX system deployed in any DoD environment that has a level of Command and Control must meet certain standards set by the Joint Interoperability Test Command (JITC). So, until Sphere received its PBX1 certification, no further deployment would be possible.

Sphere received its PBX1 certification — which covers such things as interoperability, information assurance, reliability of the system, security, resiliency to attacks on the system, and more — earlier this year, and is currently one of two vendors to have achieved that status. In that regard, Walter Reed's decision to user Sphere is already paying off.

The End Result

The Medical Center is rather pleased with the initial implementation of Sphere's IP PBX in conjunction with the Polycom IP phones, and not only because of the usual benefits of VoIP. Doutt explains that the IP phone network performs one other important task: It acts as a so-called "network sniffer." While network problems are never welcome, any network issues that arise are noticeable on the phones much sooner than they otherwise might be, which allows for quicker resolution.

The difficulty with the new phones, says Doutt, is that people are used to doing business one way the ISDN handsets, where they simply pick up a phone, push some numbers, and the call is completed. With the VoIP, there is a tremendous amount of additional that, for some people, is too much functionality. "When we started," he explained, "we had a couple of trouble tickets per month, where people had simply hit the DND button and not realized it — the phone would not ring and they did not realize that it was just a matter of pushing a button. It's little things that you learn as you're implementing VoIP."

But maybe the most important thing, according to Doutt, is that when seeting up a VoIP network, you have to be sure to stress to your engineers that any change they make to the network needs to involve the VoIP team. They must work in unison. The VoIP team should have complete knowledge of everything from a patch to a filter to a specific application that runs to a desktop, just so they can test it in the test lab to can see if there are any problems or complications with VoIP QoS.

In terms of the interaction with Sphere, Doutt says, "Sphere has bent over backwards for Walter Reed and we're very appreciative of that." He explains that, while there are still some tweaks to be made to the system, Sphere is dedicated to improving the overall system performance. Sphere regularly provides code updates, to ensure the system is performing at optimal efficiency. "One of the things that makes Sphere so successful in the federal government space is their dedication to the customer," added Doutt.

Next Phase

Now that Sphere has received its PBX1 certification, WRAMC can attempt to move ahead with further implementation of the VoIP system. What a larger deployment will entail is, as of yet, undetermined, but there are several options under consideration.

What Doutt sees as the best solution is to ultimately move over all lines except the Emergency Room and fixed clinical lines that are associated with systems that require 24-hour uptime. For all the benefits of VoIP, it has its pitfalls, he explains. Specifically, it requires power, so you run a certain risk in case of a power outage — even a UPS will not allow for unlimited talk time.

But in areas where it is implemented, Doutt sees it a tremendous advantage. For instance, he envisions is being implemented as part of the patient services in the hospital. With the new system, which has been developed but not approved, a patient will be able to dial the Nutrition Care Center by the push of a single button, and the nurse on the other end will be able to see nutrition information (such as allergies, diet restrictions, most recent meal time, etc.) on the monitor, along with menu choices available for that patient. So it will simplify things on both ends (currently, the same process is length, much more complicated, involves several people, and is generally done via paper and pencil).

So, Doutt agrees that the VoIP system is perfect for most areas of the facility, which is why he advocates expanding the system to all those areas gradually. According to Sphere's Todd Landry, the system is scalable to about 30,000 ports. In addition, regardless of how the facility chooses to expand, "the architecture of the system deployment is such that they will be able to add new phones and/or move phones from one facility to another without having to worry about hardware issues — they'll be able to scale with what they have," Landry says. IT

PBXtra

Fonality
6133 Bristol Parkway
Suite 150
Culver City, CA 90230
Ph: 877-FONALITY
Web site: http://www.fonality.com

Price: $995 for IP-PBX, under $3000 for PBXtra and 10 VoIP phones, $1,995 for Call Center Edition

Figure 1: User interface displaying IVR configuration.

Asterisk, the open source IP PBX has quite a loyal following amongst Linux geeks and techies — some might say downright "cultish." Unfortunately, not everyone is versed in the ways of Linux, but lots of customers want the power and flexibility of the Asterisk platform. Even those versed in Linux may be a little intimidated by Asterisk, since it doesn't offer a graphical administration tool requiring you to SSH into the Linux box and use the VI editor tool to make configuration changes. So what do customers with limited Linux expertise looking for an "easy to manage" IP PBX solution do if they want Asterisk?

The answer is deploy Fonality's PBXtra, (news - alert) which adds user-friendly browser-based administration to the Asterisk platform (See Figure 1). Fonality actually uses a hybrid hosted approach that uses the hosted model for adds/moves/changes, but they send an actual server containing Asterisk with the appropriate TDM (define - news - alert) cards (analog, T1/E1) to the customer. The changes made via a graphically rich browser interface are then pushed down to the local box. Thus, instead of the typical Asterisk text-based configuration file, both administrators and users gain access to the browser's rich graphical interface to configure ACDs, extensions, speed dials, look at call logs, etc.

Chris Lyman, CEO of Fonality professed his reasoning behind the "hosted ASP administrative interface" by stating, "It resides at our data center outside of your firewall so moves, adds, and changes can be done without opening up your firewall, without having a Web server running inside your business, without having an IT manager on board. It plugs in and just works."

He continued, "I sold my Web hosting company to a public telco in 2000. At that time, we had 600 dedicated UNIX servers and we had our software installed on every one of them. We faced a decreasing economy of scale. Every bug fix, every feature fix had to be installed 600 times and the servers had to be rebooted, which is when hardware fails. So, what I swore to myself was that I would do a 'write once, use many' in my next business model."

Chris gave an example of why he likes the ASP model when he told me, "Since January, we have pushed 13

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

Go To Table of Contents | Go To Ad Index

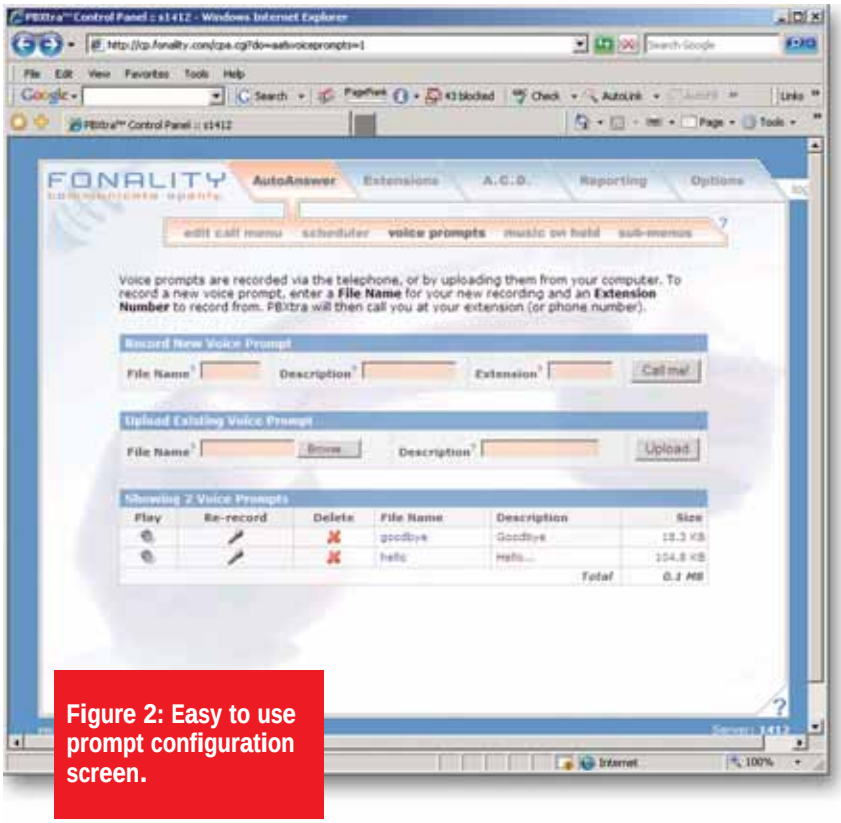

Figure 2: Easy to use prompt configuration screen.

versions of our software to our customers and nobody had to do a reboot or click a download button. In addition, 15% of our customers are telecommuters with dynamic IPs, and this model allows them to use Fonality as the proxy between their remote location and their headquarters PBX."

According to Fonality, they have had customers since October 2004 and now have more than 500 customers and 10,000 lines in 43 states and more than 11 countries. Targeting 10-200 seats, Fonality works with phones from Polycom, Cisco, Aastra, snom, and SwissVoice, as well as a customized softphone from CounterPath (formerly xten) based on their Eyebeam Pro build. They also feature Fonality Call Center Edition, which is $1000 more than the standard edition and gives you ACD functionality with six different call distribution strategies, call recording, skills-based routing, in-depth graphical reporting, real-time queue stats for managers (calls abandoned, calls in queue), and more.

Fonality has written 250,000+ lines of proprietary code to supplement the core Asterisk platform. Lyman told TMC Labs, "We have more lines of code developed than the version of Asterisk that we ship with. Most of this code is management software; the rest is under-the-hood code that helps PBXtra coexist with the SMB LAN."

Fonality shipped TMC Labs one of their servers for some real-world testing. One thing we noticed right off the bat is that Fonality has some solid features, including a sophisticated dialing plan with pattern matching that blends analog, T1, and VoIP to determine the best route. For instance, if dialing an international number, it will first try it over VoIP. If that fails, then it will try trunking out of, say, your L.A. office (least cost routing) and then, lastly, send it over a POTS line. Another interesting feature is support for SIP and AIX trunks built into the Web control panel so you can instantly connect PBXtra to popular VoIP providers, like VoicePulse, BroadVoice, and Cbeyond for SIP trunking or connecting to other Asterisk boxes.

The user interface for Fonality is what sets it apart from your typical Asterisk solution. Fonality's Web-based administration and user interface is very organized and has a very clean look. Navigating the user interface and making configuration changes was so easy, yet so powerful, it made us wonder why we ever thought editing the Asterisk text-based configuration file was cool.

Similarly, adding or editing voice prompts from the Web interface (See Figure 2) was equally easy. Sure, you could record your prompts on your local PC and then FTP your recordings to the Asterisk box, but Fonality also lets you record your prompts simply by clicking on the microphone icon (See Figure 2), which then pops up a window asking you to enter in your phone extension, or even your cell phone. Your phone rings and you are asked to record the prompt and then confirm you are happy with it or re-record it. It seems simple in the grand scheme of things, but if you're ever used native Asterisk, you know Fonality has made this procedure much easier.

PBXtra has some nifty features. For instance, PBXtra features an easy to use scheduler that lets you build a schedule for a different Call Menu during weekends, or have your sales calls go to a mobile phone after hours. We also liked the helpful colored tool tips (See Figure 3), which display any time your mouse hovers over a question mark near a particular item. They help explain each particular feature.

Another great feature is the Queues, which give you a real-time snapshot of your queues and agents. PBXtra also lets you perform call recording with the click of a mouse. You can record in

high or low compression on a per-user (agent) basis and listen to recorded calls right from the Web-based Control Panel or download them to your PC. PBXtra has very good reporting functionality, including the ability to create custom call reports, export to .csv, and even view the cost of each call if you are using Fonality's VoIP network. PBXtra's voicemail capabilities are excellent, offering you four ways to check your voicemail: via .wav attachments sent to your email, via your desk phone, from a remote phone, or via the Web interface.

We should also mention you can "link up" with other PBXtra boxes in other branch locations for a seamless 4-digit dialing plan. They also offer a feature rich softphone and chat client priced at $49, which includes a bundled Plantronics headset. PBXtra Softphone is excellent for telecommuters, remote call center agents, and such and, of course, it is able to perform free VoIP-based 4-digit dialing to any PBXtra extension. Finally, PBXtra has integration with Microsoft Outlook. Incoming calls pop to the screen based on your Outlook Contacts. You can even call people by clicking on their email in your Inbox.

Fonality has 10 hour per day customer service, and 24 hour per day emergency support available to its customers. This gives people the comfort of knowing that low cost Open Source can also come with parental supervision.

Room For Improvement

Fonality supports SIP, however, they haven't embraced the "bring your own SIP phone" mentality. They have very specific phones with very specific firmware and with very specific boot code with the extension pre-preprogrammed so the small business owner just simply plugs it in and it works.

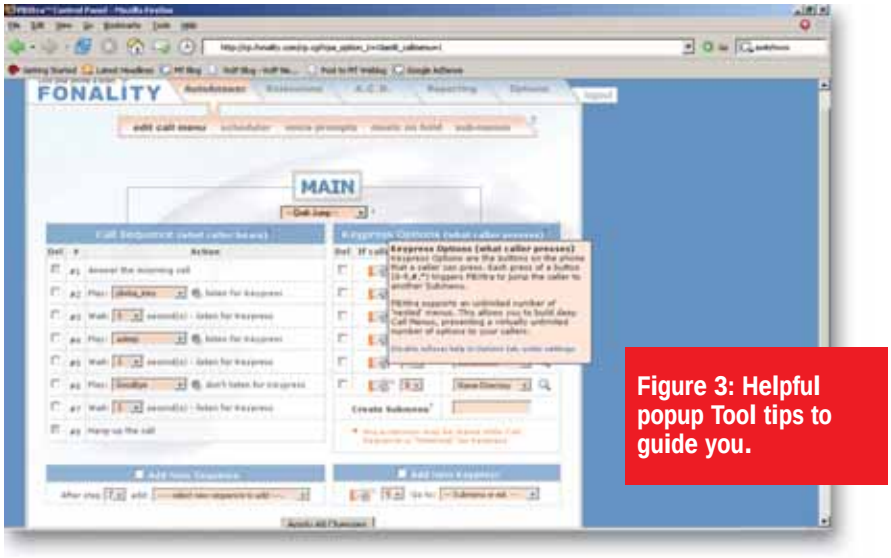

Figure 3: Helpful popup Tool tips to guide you.

This certainly makes sense for small businesses with minimal or no IT staff to set up the SIP configuration on a SIP phone. However, you will pay a slight premium on the pre-programmed phones. TMC Labs feels the customer should have a choice. But, considering the inexpensive price point of the Fonality system, we can't fault them too much for wanting to profit from the phones.

Fonality's CEO commented: "In the beginning, we played the bring-your-own-phone game. That was before we realized that properly configuring a SIP phone required a level of technical acumen that was beyond the scope of the majority of our customers. Systems started coming back like boomerangs. Therefore, we dropped the price of our software to below cost, and decided to make up the margin by selling perfectly configured phones."

Conclusion

We already know the power of the open source movement and the popularity and cultish status that Asterisk has been building in the tech community. Fonality builds on the popularity of Asterisk by performing a complete and total re-write of the front end to be aimed at the SMB (non-tech-savvy) business market. Fonality leverages the power and flexibility of the Asterisk platform, while simultaneously making it easy to manage and use. TMC Labs was very impressed with the Fonality IP PBX and would not hesitate to recommend it for anyone looking for a turnkey Asterisk solution with powerful Web administration tools. IT

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WAN Services for the Host-Your-Own-VoIP Enterprise

Select Carefully to Get the Most from Converged Services Networks

A number of sophisticated enterprise IT professionals have accepted the challenge of internally hosting Voice over Internet Protocol (VoIP) services instead of outsourcing IP PBX and enhanced feature servers to telecommunications service providers. These ambitious IT shops are managing VoIP (define - news - alert) hardware and software implementations themselves, rolling out sophisticated VoIP services to headquarters and branch offices across the enterprise and maintaining hands-on development of enhanced VoIP features.

In the course of this initiative, host-your-own-VoIP enterprises also must acquire reliable, secure, wide area network (WAN) local access and backbone transport to interconnect far-flung enterprise locations as well as provide connectivity to the public switched telephone network.

There are several technology criteria that IT managers need to consider when selecting WAN services, including the network's ability to provide security for enterprise communications as well as provide cost-efficient converged services for all voice, data, and video traffic. Management must also consider the WAN network's Quality of Service (QoS) capabilities and its ability to back them up with meaningful service level agreements. Finally, enterprises should insist on partnering with a WAN provider that fully leverages the latest standards to ensure interoperability, improve flexibility, and reduce cost.

Secure Data

One of the most significant developments in WAN services is the migration to Multi-Protocol Label Switched (MPLS) backbone technology. MPLS enables relatively easy provisioning of virtual private network (VPN) connections among enterprise locations as well as to partner and supplier locations.

For data applications, MPLS-based WAN service enables an enterprise to consolidate file sharing, daily point-of-sale transmissions, Internet access, storage, Web commerce, and other types of data traffic onto a single, enterprise-wide private network offered by a single provider.

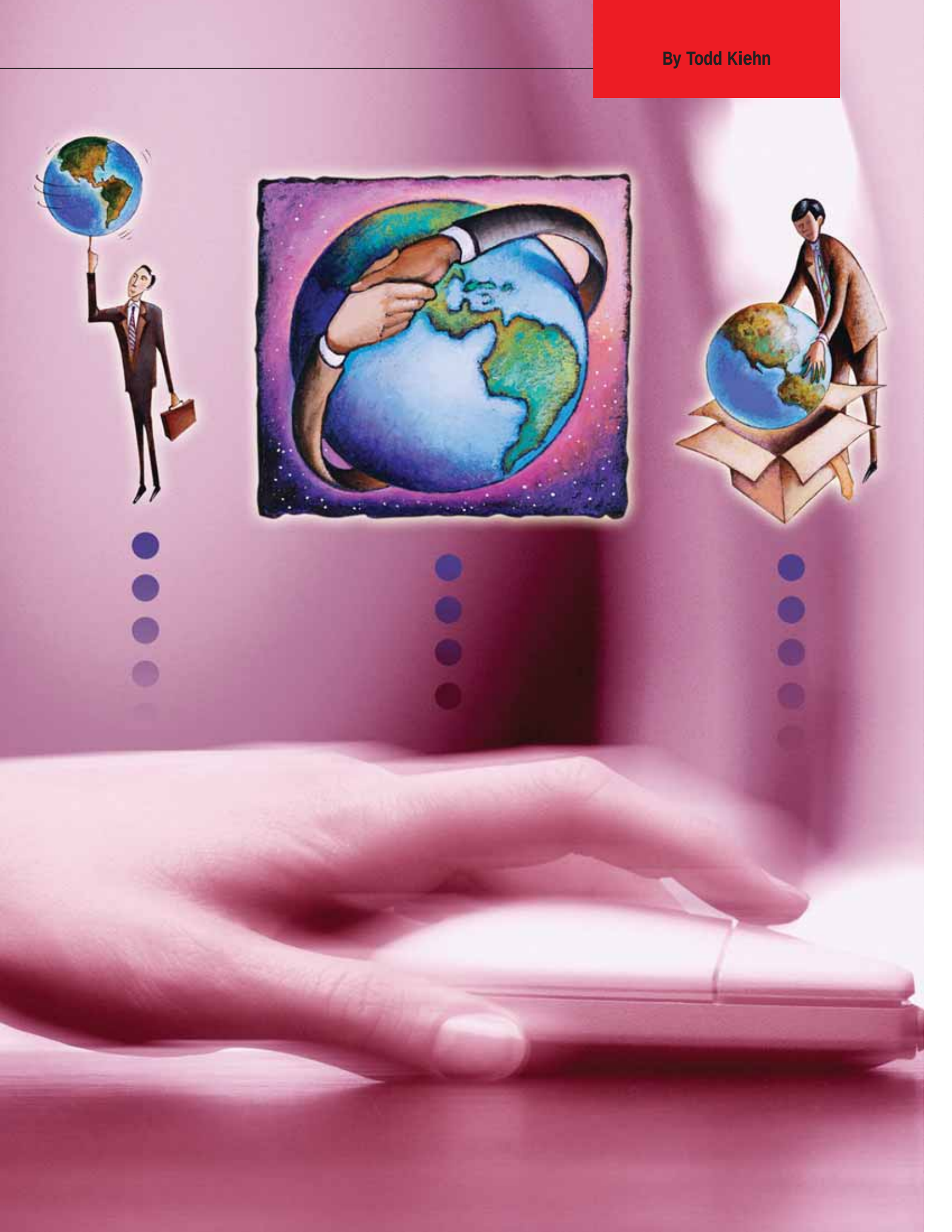
Although MPLS by itself provides some security, enterprises considering using an MPLS WAN for VoIP should also insist on a truly private MPLS network, isolated (or firewalled) from the public Internet. A private MPLS network provides service providers and enterprises with better capability to manage QoS and mitigate security risks.

Integrating Voice

Many of the most enterprising IT managers are pursuing "self hosted" VoIP services to eliminate the adminis-

Go To Table of Contents | Go To Ad Index

By Todd Kiehn



trative and capital costs of maintaining local PBXs at several offices, including the costs of local procurement and local staffing. They are also consolidating applications over a single service provider's MPLS backbone network to reduce overall network costs by eliminating expensive point-to-point links and increasing the enterprise's utilization of available network bandwidth.

However, until recently, voice communications has been conspicuously absent from the converged WAN services model, limiting the cost benefits of a multi-service network. With current VoIP implementations, enterprises typically run site-to-site traffic over the WAN, but access the PSTN via separate local voice connections from each site. This means IT managers have had to continue to manage numerous local voice circuits and multiple off-network vendors as well as wasting available WAN bandwidth.

Two key barriers have stood in the way of integrating voice with other applications in a converged network: signaling incompatibility between enterprise and service provider VoIP networks, and the lack of an ability to guarantee voice QoS and security on corporate WANs. These challenges have forced enterprises to continue to use TDM connections separate from their converged WANs to access the PSTN.

Now that these barriers are beginning to fall, thanks to efforts by enterprises, service providers, and equipment vendors to deploy IP-enabled PBXs and adopt common signaling protocols — and by service provider efforts to transform wholesale PSTN gateway services into integrated components of retail converged WAN access and transport services. Leading WAN service providers can now offer cost-efficient converged services access for all VoIP, data, and video traffic over a single multiservice access infrastructure

Hosted VoIP: It's Cheaper, It's Easier, It's The Future

By Bruce Chatterley

Small and medium-sized businesses (SMBs) are saying goodbye to cumbersome and costly communications systems and are quickly realizing the advantages of VoIP-based solutions. VoIP allows businesses to move away from traditional PBX systems and integrate their voice and data communication into a single converged IP network. Additionally, some vendors offer businesses both broadband and voice services and the consolidation greatly reduces IT headaches, improves efficiency and most importantly, saves money.

The VoIP market is predicted to grow as high as $3.3 billion worldwide by 2010 according to a recent Yankee Group study. Hosted VoIP is on pace to be the fastest-growing segment with $1.2 billion projected revenue by 2010 (from $233 million in 2005). The rise of VoIP over VPN (Virtual Private Network) is estimated to reach $1.25 billion by 2010 (from $268 million in 2005) and VoIP real-time QoS bandwidth is projected to reach $822 million in 2010 (from $338 million in 2005).

The popularity of Hosted VoIP service is especially on the rise because of its cost-saving attributes and advanced calling features. According to the Yankee Group, 70 percent of SMBs indicate they would prefer a Hosted VoIP solution to a premise-based hosted VoIP solution. Companies that couldn't fathom a large-scale PBX installation and maintenance are embracing Hosted VoIP because it gives them control and flexibility at a manageable price.

Hosted VoIP has many key attributes from investment and efficiency standpoints including:

- No equipment leases and maintenance agreements.
- Administration is Web-based which greatly reduces IT time.
- Businesses enjoy nationwide access between its offices without dedicated circuits.
- Unlimited long distance calling.

Pace International was looking for a more cost-effective and efficient way to maintain contact with its 100 employees spread across two states, as well as 11 nationwide warehouses and eight international offices. The company wanted a system that streamlined phone management by letting them outsource the headaches and keep control of the administration. They settled on a Hosted VoIP solution with a Web tool that simplified moves and also includes automated call routing, four-digit dialing between all of its offices and unlimited long distance. Pace's VoIP and broadband provider is Speakeasy, which assigns customers a single point of contact to assist them with their voice and data needs. This allows the customer to benefit from a dedicated communications specialist at no additional charge. This contributes to Pace International's estimated savings of 20 percent in IT time each month. More dramatically, the company predicts it will realize a $65,000 annual savings in long distance charges, conference calling and phone system connectivity costs, which represents approximately 25 percent of its communications budget.

Seattle game developer Flying Lab Software needed a phone system that could scale quickly as the company grew, but with minimal overhead. It too

Go To Table of Contents | Go To Ad Index

selected Hosted VoIP, which provided them with easy and fast management and configuration. Traditional cabling and wiring associated with moves/adds/changes were replaced with Web-based simplicity and new phone lines are now easily added as needed. This seamless solution allows them to accommodate employees who travel or work from remote locations. The features that came with their Hosted VoIP solution enables employees to stay connected as if they are in the office. For Flying Lab, it was important that key features were not tied to a desk phone. Their mobile employees use unified messaging, which delivers voice messages to their e-mail accounts, and a "find me/follow me" function, which ensures that calls always reach employees. Flying Lab reduced its monthly telecom bills by 27 percent, has nearly three times as many lines for almost a third less the cost of their old system and has predictable monthly bills.

Flying Lab founder Russell Williams is direct in his assessment of VoIP: "Business VoIP gives small companies like ours the capabilities of a PBX solution for just a small, up-front investment and none of the management headaches. There's no solution like it."

Simply, businesses are realizing that they can't afford *not* to consider Hosted VoIP solutions. By simplifying and consolidating resources, they can focus on the business that really matters: their own. IT

Bruce Chatterley is President and CEO of Speakeasy. For more information please visit the company online at http://www.speakeasy.net. (news - alert)

Session Initiation Protocol

One of the most critical criteria for selecting a VoIP service provider is its conformance to the Session Initiation Protocol (SIP), a VoIP signaling protocol which is enjoying rapid adoption by both enterprises and service providers.

In the enterprise, virtually all major IP PBX suppliers now offer SIP-based solutions. Enterprises are adopting SIP in great part for its compatibility with common Internet standards such as TCP/IP, DNS, and DHCP, allowing voice to fit seamlessly into existing routing and address schemes including IPv4 and IPv6. Further, because SIP is an application layer protocol, it presents a common session control mechanism not only for VoIP, but also for instant messaging, presence and a multitude of additional IP multimedia applications.

For these same reasons, the service provider community also is now largely committed to SIP as the signaling protocol of choice not only for VoIP, but also for IP Multimedia Subsystem (IMS) fixed/mobile convergence architectures. Traditional telephone companies have begun to deploy SIP at the core of their networks, using border elements such as signaling and media gateways to provide interworking with other protocols, including the PSTN's SS7.

Such widespread adoption of IP PBXs and SIP, both inside and outside the enterprise, is making seamless peering between enterprise and service provider VoIP networks possible. Using SIP-compliant IP PBXs, businesses can extend the reach and functionality of a single IP PBX across an entire geographically distributed enterprise via MPLS-based IP VPNs, without an expensive PSTN gateway card in every branch office router. The enterprise can migrate its internal voice communication to IP by routing intra-company voice traffic over a private WAN or managed MPLS network, allowing it to eliminate intra-company toll and tariff charges.

Differentiate! Technology Solutions That Make a Difference in Business and Human Lives

By Kevin Nethercott

New Orleans was flooded by the hurricane waters of Katrina. Thousands were killed by the rushing waves of an Asian tsunami.

The world is grimly aware of the need for advanced emergency warning methods. There's hardly a need to argue our traditional technology systems are ill equipped to provide us with enough life saving notification.

Now imagine an IP communications system tied to a buoy out at sea. The system can detect tsunami waves, estimate a zone of impact and call people in the region with instructions on how to quickly and safely evacuate. Such a tsunami warning application would certainly be helpful in detecting a catastrophe early enough to save countless lives.

At the individual level, imagine a hospital software solution that monitors a patient's health status and upon detecting a crisis, can instantly alert the nearest relevant doctor based on the patient's unique status and needs.

Such applications are not a stretch of the imagination. Voice-enabled applications and services are delivering on the long standing promise to truly change the way companies, governments, and humans interact. Furthermore, these solutions are giving service providers, solution providers and ISVs the ability to differentiate themselves from the competition by delivering such solutions.

Customizable Services at the Micro Level

Thanks to new hosted telephony products that are industry standards-based, Web service-oriented and powered by inexpensive Intel-based servers, pioneering service providers and ISVs can quickly and affordably build voice-enabled software and services that only existed in the conceptual realm just a year ago. Furthermore, the flexible development capabilities these solutions provide allow service providers to address very specific customer needs.

Hosted IP telephony service providers can customize services based on a given community's needs and easily add new value services as opportunities present themselves. Young communities can enjoy VoIP services tailored to the needs of families with children, linking playgrounds and swimming pools with the living room at home. Mature communities can be served by community voice and messaging applications that bring seniors together with neighbors, family and the bridge club at the community clubhouse or recreation center.

Even system integrators and resellers are recognizing that they can even host telephony services themselves as a profitable extension of their businesses. By leveraging existing customer bases, proven technical competencies, small capital investments and low operating expenses, any telecom reseller can become a hosted VoIP services wholesaler serving organizations of every description. Such a business could open up new and lucrative revenue streams for these companies.

Go To Table of Contents | Go To Ad Index

The ease with which the latest affordable, flexible VoIP solutions can be implemented — and the degree of innovation they allow for service providers — makes it realistic to envision a future where voice is a functionality within a variety of solutions rather than a stand-alone service, and where each solution provider competes not on price, but on the value their services deliver.

Innovative Developers Keep Productivity in Mind

By creating unique voice applications and integrating VoIP capabilities into familiar business applications, developers are building applications as diverse in nature as their imaginations are wide open.

For example, dental patients can be contacted by voice-enabled calendaring software to book and confirm appointments. If a client is unable to make an appointment, the software can check against the calendar and then dial from a client waiting list, rebooking the vacated opening. This process virtually ensures that the dentist's chair is never empty — a comfort to dentists for whom vacancies can cost as much as $1,500/hour.

IP telephony applications are enabling customers waiting in line at busy bank branches to use kiosk stations on site to be intelligently matched up to available tellers via an audio or visual interface. These tellers are not in the same branch — they could be across town. This ensures maximum efficiency and productivity from bank employees and significantly increases customer satisfaction.

CRM companies can differentiate themselves by integrating voice into their applications. These capabilities improve productivity by raising the number of calls made by each salesperson from 50 to a shocking 150 per day. Even more shocking, a CRM VoIP implementation that would have taken months to complete a year ago now takes a matter of weeks.

Whether developing VoIP applications for emergency warning systems, or delivering hosted services offerings through a variety of resellers, the remarkable flexibility now provided by next generation IP telephony development platforms give businesses the ability to not only better compete, but further innovate and thrive in rapidly evolving marketplaces that demand differentiation. For these businesses, the mantra "differentiate or die" is less a threat than a call to action and a future of possibilities. IT

Kevin Nethercott is Founder, President, and COO of LignUp. For more information, please visit the company online at http://www.lignup.com. (news - alert)

Further, off-net calls to the PSTN can be handed off to the service provider — via a logical "SIP trunk" between the enterprise IP PBX and carrier softswitch — enabling enterprises to create an IP connection to the PSTN and eliminate those separate connections to the PSTN at each office. Further solutions will enable enterprises and service providers to create SIP peering interconnections between communities of enterprises, further reducing toll charges and allowing shared private dial plans to enable extension dialing between companies.

The wide adoption of the SIP standard overcomes variances in interoperability between carrier and enterprise voice equipment as well as easing the task of troubleshooting problems.

QoS and Security

With several different types of communications traffic now able to run over a converged network, it becomes important to select a WAN service provider who supports hard, deterministic QoS for each type with strict priority queuing. This is in recognition that different types of enterprise communications traffic will have differing QoS requirements.

Voice and video applications require rigorous timing control and performance metrics. Priority data includes mission-critical business applications with lower delay sensitivity than voice/video applications, such as surveillance video and applications with flow-control capable transport layers, while standard data includes sporadic LAN-to-LAN traffic. Internet-class applications like e-mail and Web browsing have the lowest QoS requirements.

A fully converged WAN network should offer the enterprise customizable and controllable bandwidth per port. The enterprise need only purchase the bandwidth required, maximizing flexibility and cost-effectiveness.

Security is a growing consideration as well. Enterprises should look for service providers with private VoIP WANs not

directly exposed to the Internet. The VoIP WAN should have access to it controlled via session border controllers, which are essentially purpose-built VoIP firewalls to ensure that only authorized signaling and media packets reach the core VoIP network. This network arrangement helps to secure enterprise communications end-to-end from eavesdropping, denial of service, and other hacker attacks.

Retail PSTN Gateway Services 'In the Cloud'

Given broad adoption of SIP in the IP PBX realm, service providers are well positioned to turn wholesale PSTN gateway services into retail gateway services in support of SIP-based enterprise WANs.

On the service provider's side, on-net calls are sent over the enterprise's private IP or MPLS backbone, while off-net SIP calls to the PSTN ride the carrier IP network to a service provider owned SIP gateway that converts VoIP to TDM for calls to PSTN parties. The service providers' economies of scale have replaced a cost structure based on TDM gateways at every enterprise location with a handful of regional gateways interconnected by low-cost, high-quality IP circuits.

Such gateway services in the cloud are all the more efficient if the service provider operates both a national IP/MPLS network and a national TDM voice network complete with robust circuit switch support of E911, local number portability, and other vital telephony services.

This SIP-enabled scenario enables transport of all data and voice traffic over a single converged WAN connection and the centralization of all PSTN calling through a single VoIP connection to a national carrier.

In terms of capital and operating costs, on-net and off-net SIP voice connections remove the need for on-premise PSTN gateway equipment. The converged WAN connection removes the need to contract with a

Gaining Ground in Highly Regulated Mexican Telephony Marketplace

Alianza, a Utah-based hosted telephony provider to businesses worldwide, faced two debilitating challenges when entering the Mexican marketplace. First, Mexican laws so strictly regulated how American businesses operate in Mexico, that Alianza was prohibited from establishing a physical, or even a marketing presence in the country. And, second, the overwhelming 96 percent business telecom market share of Teléfonos de México (TelMex) guaranteed an incredibly steep uphill battle.

For their part, Mexican businesses were spending up to four times as much on basic phone service as their U.S. counterparts, and enduring costly technician visits for service changes as minor as the addition of phone extensions. The time was clearly ripe for a cost-effective and innovative IP telephony option.

"We knew there was a market opportunity to provide Mexican businesses with a service that addressed two of their top concerns: cost and control," says Brian Beutler, CEO of Alianza Global Communications. "We had that. The challenge was getting it to them."

LignUp Platform Delivers Impressive Flexibility

Alianza's first challenge was to find a way to deliver a powerful, cost-effective, and flexible service to Mexican businesses without opening an office in Mexico. To address this, Alianza opted to build the required hosted telephony service on the LignUp Communications Platform with a flexible software architecture and administration capabilities which allowed the company to deliver telephone service to Mexican businesses from the U.S. Calls from Mexico would be routed over the Internet to Alianza's facilities in Lindon, Utah where there they are then switched to analog systems into local markets. This solution allowed the company to offer five cents a minute on a call from Mexico to the U.S., compared to the traditional 30 to 50 cents a minute offered by alternative providers.

"We looked at a number of platforms from different companies such as Sylantro, Broadsoft, and SISMaster," said Beutler. "We chose not to use these platforms because we felt we weren't getting the personal attention we deserved when it came to questions of service and support. With LignUp, we were getting answers immediately. Most importantly, LignUp gave us a package we could build on and customize to our heart's content. The other platforms limited us far too much.

"The LignUp platform was ideal for Alianza's business model and services objectives," says Kevin Nethercott, President and COO, LignUp Corporation. "As is the case with most service providers, Alianza needed development capabilities to build service features that would set their offerings apart in the market place, as well as the administration and precision routing capabilities that met the needs of their global business model."

Alianza's second challenge was to market themselves to Mexican businesses, again, without spending so much as a penny on marketing the Alianza brand. To address this, Alianza formed alliances with Mexican resellers who marketed

Go To Table of Contents | Go To Ad Index

the Alianza service to the end users. Resellers provided businesses with all the equipment and integration support necessary to implement the solution, and simply connected these customers to Alianza's hosted service via broadband.

Alianza's third, and most daunting challenge, was establishing a foothold in a business phone service market dominated by TelMex. Fortunately for Alianza, this problem turned out to require the simplest solution. Alianza tackled this challenge with a three-pronged advantage.

The time was clearly ripe for a cost-effective and innovative IP telephony option.

First, implementation costs were kept in check as the software LignUp solution runs on standard, off-the-shelf Windows servers, thus eliminating the need for costly, proprietary hardware.

Second, the cost of IP telephony relative to POTS is markedly lower, thus instantly delivering an immediate cost savings. Third, and most pivotal, Alianza gave businesses complete control over their service through an intuitive, easy-to-use graphical user interface allowing users to add new extensions and incorporate value added services without incurring the time and labor charges inherent in the costly service technician visits of traditional providers.

"We took the great LignUp feature set and platform and we built a robust customer interface on top of it, so now the end user controls usability functions," says Beutler. "When our customers want to do anything from add new user accounts to increase functionality and services, all they have to do is log into the Web-based GUI we provide for them from anywhere in the world. It's an incredible power and now it's in the hands of the business."

Alianza's Rapid Growth

Thanks to Alianza's ability to offer its service remotely, and the benefits it imparts to customers in allowing them control over their phone service, Alianza's business is growing rapidly. In its first year in the Mexican telephony market, Alianza has accumulated over 1,000 business customers and realized subscription growth rates of up to 30 percent each month.

"The LignUp platform was the cornerstone to our level of serviceability," says Beutler. "Unlike other companies, LignUp gave us great scope for customization backed by amazing customer service. They are impressive." IT

local phone company in each market for local PRI lines to the PSTN, while also reducing toll charges to the PSTN for on-net long distance and local access calls that are now carried over the WAN. On top of this, nationwide pooling of VoIP ports allows enterprises to aggregate PSTN capacity on large circuits rather than manage channels on many different individual trunks, resulting in greater oversubscription, higher port utilization, and lower costs.

Additionally, data WAN access options, such as per-application QoS offerings, now also apply to VoIP as well as to any other WAN data application, thereby moving the enterprise toward a usage-based access and transport capacity model for voice. As a critical bonus, the SIP-based WAN positions the enterprise to exploit the coming integration of voice with IM, presence, multimedia conferencing, IP video and other SIP-based IP multimedia applications for enhanced enterprise mobility, productivity, and business agility.

A WAN to Match Your Enterprise-Hosted VoIP Network

Given the large investment enterprise IT managers are making in implementing hosted VoIP networks, it is important to take the next step and select a WAN service provider who can offer the best match in security, converged services, QoS, and network protocols. Only then will the enterprise gain the full benefits of IP communications technology. IT

Todd Kiehn is senior product manager of VoIP services at Broadwing. For more information, please visit the company online at http://www.broadwing.com. (news - alert)

Voice over WiFi:

Is Your Wireless LAN Up to the Task?

By now, we have all seen and experienced two inexorable trends in communications: 'cutting the cord' and 'convergence of voice and data.'

Cutting the cord means freedom, productivity, and convenience. Examples include the home cordless phone, the cellular phone, and the wireless laptop.

Convergence of voice and data promises efficiency and lower costs through multi-purpose infrastructure, with voice over IP (VoIP) as the poster child for this promise.

Now these two trends are, themselves, converging in the form of voice over wireless LAN (VoWLAN) — a.k.a. wireless VoIP, voice over WiFi, and a few other monikers. The basic idea is to enable the same WLAN to carry both voice and data communications. So what's to help or hinder this convergence? Plenty.

The WLAN, and the IEEE 802.11 specification it's based on, was conceived for bursty data communications, which are not real-time in nature and can withstand the instabilities in the wireless link that cause transmission retries, buffering, and other assorted delays, without the user noticing a performance impact. On the other hand, real-time applications, such as voice and streaming applications, are a completely different matter, requiring far greater wireless performance. So, whether you have an existing WLAN or are planning your first deployment, there are some key design considerations that you need to watch for as you proceed.

Top Five Design Considerations for VoWLAN

Building a WLAN to handle the rigors of voice requires close attention to five interrelated design traits.

Coverage

Compared to data users, voice users will ratchet up the coverage requirement in three ways: location, strength, and uplink stability. Users will naturally expect to hold conversations in locations where data communications are not normally needed — the hallway, the stairwell, even the bathroom. While coverage needs to be broadened, it must also be strengthened, so as to ensure toll-grade voice quality. Finally, the uplink (i.e., transmission from the phone to the infrastructure) needs to be far more stable and resistant to variations inherent in the radio signal. Who hasn't had a WiFi connection mysteriously drop temporarily, even while sitting at a desk surfing the Web? Such temporary disruptions will mean dropped calls and very annoyed users.

Capacity

VoWLAN is attractive to enterprises because it offers the possibility of extending the utility of the same WLAN system to both voice and data users. As one would expect, however, such expanded use will require increasing the overall capacity of the system. This is particularly critical in light of the fact that VoIP transmissions are burdened by high packet overhead, which constrains the number of concurrent voice calls that a channel might otherwise support. The stress of this increased load is further aggravated by the fact that most WiFi phones work only in the 802.11b mode, which uses a lower data rate than the newer 802.11g type, which is found in almost all laptops today.

Mobility

Once untethered, voice users will be mobile users. And since voice is a real-time application in which packets must be sent at regular and consistent time intervals, it will not tolerate packet processing delays that arise when a phone moves from one access point to another in traditional WLAN systems. So, a focus on seamless mobility will be critical to the success of VoWLAN. More about this later.

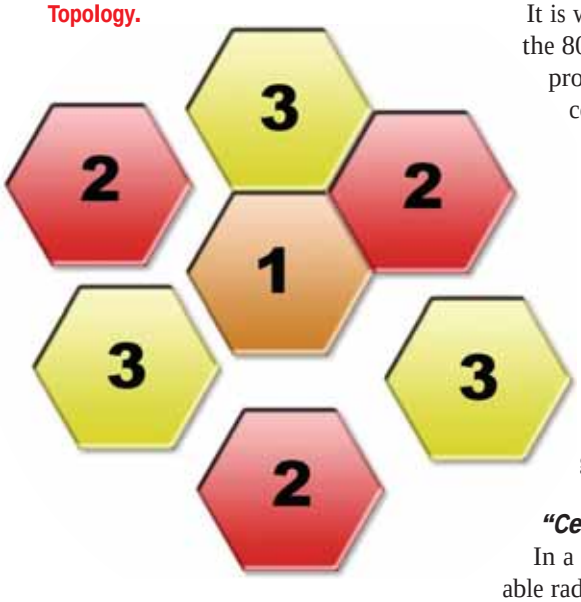
Quality of Service (QoS)

By definition, an 802.11 WLAN operates on a shared medium, in which all users must contend for access. Unmanaged contention between voice and data will degrade the system performance for all. In this context, QoS refers to the mechanisms that may be available to address the contention.

Go To Table of Contents | Go To Ad Index

By David Confalonieri

Figure 1. Cell Planning Topology.



Phone Battery Life

It is well known that the overhead of the 802.11 protocol is inherently problematic in causing handsets to consume more battery power than other wireless network protocols, such as cellular.

WLAN Architectures

How the above design considerations will be addressed depends on the WLAN architecture that is chosen for deployment. The market offers essentially two WLAN topologies to choose from.

"Cell Planning"

In a cell planning topology, the available radio channels are distributed among the WLAN access point (AP) (Figure 1). The diagram shows the 802.11b/g case, in which there are only three non-overlapping channels available. Each AP (represented by a hexagon) is assigned a specific radio channel, and then the APs are distributed to form a honeycomb coverage pattern. All the while, the designer must take care to provide sufficient physical separation between any two APs that use the same channel, so as to minimize the interference between them. This is the traditional topology that underpins data-centric WLAN systems.

"Channel Blanket"

The channel blanket topology is a recent architectural development. This topology creates extended zones of coverage for every available channel, by using each channel at every AP that is

controlled by a WLAN switch. The WLAN switch, in turn, tightly controls the RF channels to prevent the co-channel interference that otherwise plagues traditional WLAN systems. With this approach, radio channels are used to create overlapping channel blankets (Figure 2).

Comparing WLAN Architectures

So, how does each topology handle the five design challenges posed by voice over WiFi operation?

Coverage and Capacity

The objective is to maximize coverage and capacity by deploying APs as close together as possible. Closely spaced APs will ensure the strongest possible signal is received by all users, wherever they are, which makes the wireless link more dependable. Higher AP density also maximizes system capacity, since the closer a user is to an AP, the faster the transmission data rate, and therefore the higher the capacity of each channel.

AP density in a cell planning system is limited by the co-channel interference created by APs that use the same channel. Some vendor solutions vary the transmit power of each AP to try to mitigate the downlink co-channel interference. However, reducing the transmit power may create coverage holes in between the APs.

As the APs are brought closer together, the cell planning system begins to display another phenomenon — a drop in overall system capacity. Theoretically, each individual AP is supposed to provide the full bandwidth of its assigned channel. In reality, as two APs with the same channel get closer together, the co-channel interference effect causes them to look more and more like a single cell to the users, thereby actually providing one channel's worth of capacity (or less) instead of the theoretical two. The bottom line is that cell planning solutions require trade-off and fine tuning to ensure that capacity, coverage, and, if applicable, variable transmission control are balanced.

The channel blanket topology inherently avoids these tradeoffs. Since the switch avoids, not just reduces, co-channel interference, the system does not have to resort to transmission power control. As a result, APs can be placed as close together as needed to maximize both coverage and capacity. Without the limitations imposed by co-channel interference, deployment becomes dramatically easier, as APs are placed wherever is convenient and desirable, to achieve whatever grade of service the organization wants to deliver to its users.

In terms of capacity, as shown in Figure 2, the bandwidth of each channel is available to the entire service area that it covers, and the "stacking" of channel blankets results in three times the capacity, compared to the cell-planning solution for any specific location. Finally, by having every AP receive the same channel, an uplink diversity effect is created, enabling the uplink to be as robust as wireline systems today.

As an aside, consider the importance of a robust connection in the case of another highly-touted trend: WiFi to cellular convergence. This convergence proposes to use dual-mode (WiFi/cellular) handsets that will operate on the company's private WLAN whenever possible, instead of the cellular system, thereby reducing cellular airtime charges. In an ironic twist, early deployments of dual-mode handsets (WiFi/cellular) have actually resulted in an increase in cellular airtime, in large part because the WLAN system's connection was not robust enough to hold on to the phone and keep it from bouncing to the cellular network as the phone went in and out of WLAN reception.

Mobility

For voice, the design objective is to minimize or entirely eliminate the delays that are caused by the user "roaming" between APs.

Figure 2. Channel Blanket Topology.

In a cell planning topology, the user client is associated to one AP at any given time. When the client moves, a handoff from one AP to another must be performed, to enable the client to associate with the next AP. The real-time nature of voice communications demand that sophisticated mechanisms be used to make the handoff as efficient and fast as possible, or otherwise run the risk of experiencing unacceptable delays or even dropped calls as the user moves. Ironically, increasing coverage and capacity through denser AP deployment means that the handoff event occurs more frequently. This stresses the handoff mechanisms in the cell planning solution. In an attempt to mitigate this burden, the industry has been working on a new standard specification, 802.11r, which is to introduce "fast" roaming.

In contrast, the channel blanket approach eliminates roaming altogether. That's because the user device actually regards the entire coverage zone of each blanket as a single AP. In such a system, no re-association, handoff of communication or security, occurs. For real-time applications like voice, then, seamless mobility, as opposed to fast roaming, is achieved with zero latency and jitter, ensuring the highest possible quality and reliability of voice communications.

Quality of Service

As stated before, the characteristics of voice and data traffic are such that the two types of communications do not co-exist very well. The objective, then, is to determine how the performance-

Go To Table of Contents | Go To Ad Index

degrading contention between voice and data will be managed by the selected topology.

The cell planning system inherently requires each AP and each channel to be shared by all contending user types — voice versus data, 11b-mode versus 11g-mode, user roles, security levels, etc... To address the issue of voice and data contention, the industry has developed a new standard, 802.11e, which establishes a mechanism for prioritizing voice over data traffic on the same channel. This is a very recent specification, and requires new capabilities in the WLAN user devices, so it is important to determine which device types will support 802.11e and when. Even then, the 802.11e standard will only give a partial answer to this issue, due to the statistical nature of the solution.

The blanket topology can also use the 802.11e mechanism when there are users with data and voice Personal Digital Assistants (PDAs) sharing the same physical channel. The overlapping blanket configuration also enables an additional form of QoS mechanism — physical segregation of traffic by channel. In other words, each type of traffic (voice or data, .11g or .11b, high security or low security) can be assigned to a specific channel blanket, so that competing traffic types simply do not compete. This can be done today, with existing clients, with no changes or upgrades required.

Phone Battery Life

By now, it is well known that 802.11 WiFi handsets have dramatically shorter battery life between charges than their cellular counterparts. This is due mostly to the inherent characteristics of the 802.11 protocol. So, while efforts are under way to address this issue via the standards definition, and handset manufacturers strain to develop lower power-consuming chips and better batteries, what can be done on the infrastructure side to make things better today?

The simple answer is: maximize coverage to maximize the data rate at which the device will transmit. The higher the device's data rate, the shorter the transmission time for any given communication. Shorter transmission times will mean lower battery drain and longer battery life. As discussed before, the channel blanket topology will ultimately be more capable in this regard, since APs will be placed as densely as needed, without limitation, to create a solid, uninterrupted blanket of high bandwidth (i.e., high data rate) coverage.

Conclusion

The business case for VoWLAN is compelling, and it may be what finally moves WLAN adoption from limited "hot-spot" deployment to truly strategic, enterprise-wide use. But achieving the promise will require attention to fundamental design traits of the WLAN infrastructure. As we have seen, it is not wise to assume that WLAN system designed for transactional data communications will automatically support real-time applications "as-is" — this is true for both voice and streaming applications.

Coverage, capacity, and mobility are the three most critical performance dimensions that must be clearly understood and designed for. Quality of service and handset battery life are also important, but will be subordinate and dependant on the first three. Finally, depending on the topology that is selected, different mechanisms may come into play to address these performance criteria (Table 1). IT

David Confalonieri is Vice President, Corporate Marketing at Extricom. For more information on the company please visit http://www.extricom.com. (news - alert)

Table 1. Comparison of Cell Planning and Channel Blanket Topology.

	Cell Planning Approach	Channel Blanket Approach
Coverage	Coverage and capacity are constrained by the level of co-channel interference.	AP placement is not constrained by co-channel interference. Coverage and capacity are both maximized.
Capacity	Capacity is affected by the density of deployed APs. The greater the AP density, the higher the overlap of same-channel cells, and the lower the overall capacity.	Capacity is solely a function of coverage (i.e. AP density), without co-channel interference implications. "Stacking" channel blankets provides increased localized capacity.
Mobility	Roaming between APs introduces latency and jitter. Efficient and fast mechanism, possible based on 802.11r, is required to perform the "handoff" and attempt to reduce delays and dropped calls.	There is no roaming within the channel blanket, resulting in zero-latency mobility and seamless persistence of communications and security.
Quality of Service	QoS is affected by contention between voice and data users on the same channel/AP. 802.11e is proposed solution for prioritizing traffic type.	By separating different traffic types onto separate channel blankets, contention is inherently avoided. This applies to voice and data, as well as other contention cases such as .11b vs. .11g users, user roles, and security levels.
Handset Battery Life	The denser the coverage, the higher the client transmit data rate. The higher the data rate, the shorter the phone transmit time, inherently lengthening battery life.	

Making Voice Mobility Enterprise Class

Enterprises are always searching for options that give them the business "edge" over the competition to maximize customer service and responsiveness. A timely response to a customer or business associate in resolving a problem or responding to a sale opportunity is critical to a business' success in today's economic climate where selling on price or product availability alone is not enough. Typically, such interactions are not in written form (letter or e-mail), but rather voice: business-to-customer, business-to-vendor, or associate-to-associate. It is the person-to-person interaction that speeds business decisions.

Taking full advantage of direct person-to-person connections, however, is becoming more difficult in the enterprise because of the increasing mobility of employees in their jobs. In retail, healthcare, government, education, and other industries, more and more employees have less "desk time." This has been true of the "non-carpeted" areas of business — such as warehouses — for some time, but is now becoming more of a reality for the "carpeted" areas as well. Usually, this means that the chances for first-time person-to-person connections diminish and "telephone tag" ensues. This scenario becomes a problem for the enterprise trying to meet its responsiveness goal. What's the solution to this problem? Mobilize enterprise voice services to enable employees to answer their phones when away from their desks.

Technology "Gates" For Full Enterprise Voice Mobility

The ability to mobilize voice within an enterprise is much more realistic today than it was, say, four years ago. The enterprise adoption of two major technologies — VoIP and Wireless LANs — has paved the way for new voice mobility options. Major industry analysts, such as Infonetics and Gartner, have projected that by 2008 over 80 percent of enterprises will have deployed VoIP (define - news - alert) solutions and will be using WiFi as a wireless VoIP extension to meet campus voice mobility requirements. There are good solutions on the market today to meet the campus mobility requirements, but is this the ultimate flexibility that enterprises need? An enterprise-class mobile voice solution goes beyond support of wireless telephony on-campus access to include support for off-campus access and voice enabling of critical business applications.

Voice "connectedness" for corporate associates often goes beyond the campus and extends into the public areas where classic road warriors (sales and executives) and field service members still require some level of connectivity with the "home office." Off-campus mobile access usually means use of a cellular phone with inbound office calls being routed to the cellular phone, but without access to any PBX supplementary service (e.g., call transfer, park, etc.). Additionally, such associates now have the problem of managing two voice mail boxes: cellular and PBX voice mails. Cellular phones do meet most mobility/communication requirements when away from the office but are typically expensive and orthogonal to any voice service supported "on campus" by the enterprise.

Convergence is a word that is thrown around a lot these days and can mean many different things, depending on the context. With respect to understanding how mobile voice can evolve to meet the enterprise class requirements, convergence is a key consideration. Convergence will occur in multiple stages and through the collaboration of multiple vendors:

- Network Convergence — Unifying VoIP access across Ethernet and WLAN.
- Device Convergence — Dual-mode (WiFi/Cellular) devices making cross-network roaming possible.
- Local & Wide Area Convergence — Unifying VoIP access across IEEE 802 networks and Cellular networks — often referred to as "Fixed/Mobile

Go To Table of Contents | Go To Ad Index

By Richard Watson

Convergence" (FMC).

• Application Convergence — The final evolutionary step that promises to fulfill application mobility requirements and makes mobile voice truly enterprise-class.

There are enterprise benefits to be realized at each of these evolutionary stages that create its own market opportunities.

We are at Stage #1 with regard to current commercial offerings with campus mobile solutions being deployed with one vendor supplying the WLAN, one the WiFi handset, and one the PBX. This solution, while somewhat costly, satisfies the on-campus mobility requirements by bringing the PBX functionality to the point of action wherever the user may be within the enterprise.

Stage #2 of the mobile product evolution is just now coming about. Many enterprises have attempted to solve the mobility problem through use of cell phones, but with the advent of dual-mode devices (PDAs and handsets) the opportunity of always being connected (in-building through WiFi and out of building through cellular services) is viable. Early usage models of such devices treat the WiFi-VoIP capabilities and the cellular voice capabilities as non-integrated applications hosted on the same device. Such devices have a limited usefulness without an FMC solution, whereby a call can be sustained when traversing WLAN and cellular networks, extending the enterprise connection boundaries beyond their four walls of the office. Even the FMC technology, however, is not a complete solution for enterprises as it doesn't provide for integration into the enterprise application fabric.

Stage #3 is just on the horizon. Building on the base convergence of networks and devices is a new benefit: extension of important enterprise applications beyond the corporate campus. A prime example of such new enterprise-class mobile capabilities is the scenario where a dual-mode handset functions as an extension to the enterprise PBX regardless of the accessing network transport services — an "anywhere" office phone. Being able to dial enterprise associates via abbreviated numbers

An enterprise-class mobile voice solution goes beyond support of wireless telephony on-campus access.

or to transfer a call to an associate without consideration of location is a real value-add to the enterprise.
Additionally, many key enterprise business applications have a direct association with person-to-person communications and will benefit the enterprise by presenting a consistent voice service embedded in some of their standard business applications — marriage of voice-associated data context. From a CRM, for example, the user will be able to initiate a phone call or IM session with a target customer, while viewing pertinent customer information that is essential for that call.

Providing An Enterprise Class Voice Solution

With all the technological components (networks, handsets, and applications) readily available, what are the key design elements in providing mobile voice solutions that are truly enterprise class? There are several major criteria that must be met to provide a successful solution:

- The "mobility" component must be integrated inside the enterprise network domain.
- An application integration interface must be offered to project application features (such as PBX features) out beyond the scope of the campus network.
- The "mobility" component must be wireless transport agnostic.

Some popular FMC solutions require that the voice call control be controlled by the cellular operator and reside within the operator's network. While these solutions provide enhanced mobility, they don't offer enterprise system integration options, making such devices a mere adjunct to the corporate telephony solution with weak feature coupling. An enterprise-centric mobile voice product will offer seamless voice access to WiFi and cellular service but would need to use WiFi access (campus or hotspot) preferentially over the cellular services to maximize cost benefit. Enterprise-centric mobility solutions also are designed to allow the enterprise to maintain control over the use of their corporate WLAN assets, assurance of conformance to network security policies, and cost control over unbounded use of cellular minutes.

Optimum value-add for the enterprise for such products will be integration with critical corporate applications. Integration with the corporate (or site) PBX, for example, results in the dual-mode mobile device being an "anywhere" office phone. Having a single phone number and consistent features are characteristic of such devices, providing maximum "connectedness" to the enterprise, regardless of the location of the user. Other enterprise value-add options will be seen in the integration of applications such as CRM, SFA, ERP, and others. The mobile solution providers will expose simple APIs whereby successful vertical market application developers can integrate voice with little effort to make their application more mobile.

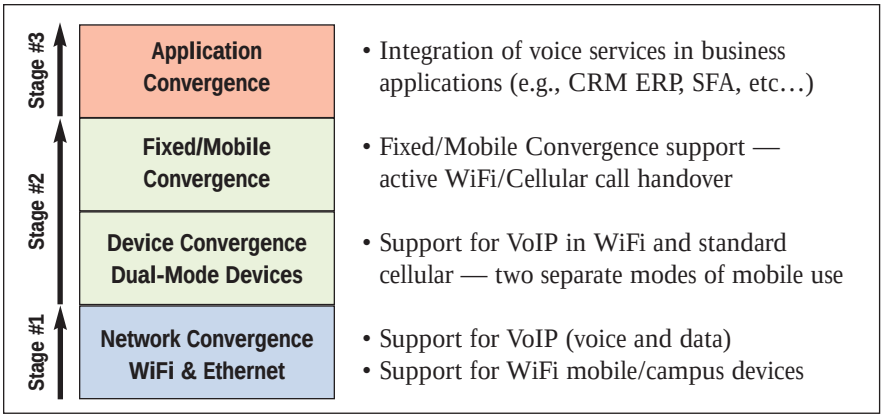
For deployment within a Global 2000 enterprise, mobile voice wireless agnostic solutions will win out over single carrier offerings. This is because the agnostic solutions allow the enterprise the flexibility to choose which cellular service best suits their needs for geographic coverage and cost. Such solutions provide a simplified vendor option for deployment with different mobile devices and WLAN providers.

Conclusion

The basic building blocks for enterprise-class mobile voice solutions are in place. What is missing are inexpensive dual-mode radio PDAs or smartphones and enterprise-centric mobility application solutions. Commercially available dual-mode devices are appearing on the market and the ASP will erode as sales volume pick up. By mid-2007, there will be a large number of mobile hardware devices available to meet almost any enterprises needs — from inexpensive (<$300) dual-mode handsets to ruggedized, multi-function PDAs (>$2,000). Such devices will be supported by a number of carrier-centric mobility products, but without the enterprise integration capability. The enterprise-centric mobility software (server and clients) are just now coming to the market and will mature over the next 12–24 months. Key decision points for an enterprise evaluation of these products will be:

1. Where is the application control point (enterprise or carrier)? and
2. What level of integration is afforded with existing enterprise applications? IT

Figure 1. The stages of convergence evolution.



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Go To Table of Contents | Go To Ad Index

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What WiMAX Means for the Enterprise

A few weeks ago, Forbes published a list of the top 10 technologies destined to change the way we live. Fuel cells, gene therapy, and haptics, a technology that enables users to interact with virtual objects, were just a few of the innovations making the list, so was VoIP. Rounding out the top 10 —— Worldwide Interoperability for Microwave Access, more commonly referred to as WiMAX — an emerging wireless standard that has seen a meteoric rise in global interest, across every geographic region and among all industry players in only a few short years.

In spite of its high profile, a considerable amount of confusion persists. Questions abound as to how WiMAX (define - news - alert) will fit in the world of wireless communications. Will it replace WiFi? Will it compete with 3G cellular systems? What kinds of providers will offer it? This last question brings some interesting scenarios to mind looking ahead at the type of competitive landscape WiMAX could help create. That is certainly worth exploring, but let's stay focused here on the end user, considering primarily the implications of WiMAX for enterprise users and what IT managers need to do to prepare for this revolutionary technology.

Internet Everywhere

Blackberry and other PDA devices take a subset of enterprise applications — like calendars, contact lists, e-mail, etc. — and deliver them beyond the enterprise's walls. Cellular phones long ago breached this barrier and now enable virtually all voice services through a network of public operators, and have thus blurred the line between office and personal communication services. WiMAX will take desktop computing and morph it into the mobile laptop and other devices yet to be introduced — enabling the Internet to be virtually anywhere and the laptop to be truly mobile as the cell phone is today.

As mobile professionals and consumers begin to see their computers as personal, mobile, ever-present devices akin to cell phones, they will change their behavior and demands, similar to what happened with the cellular evolution. Laptops will become dual-duty office/personal devices, blending public and private data communication services. IT managers will need to prepare for this virtualization of the boundary around their networks — a boundary that will soon be found "inside" their employees personal computing devices. Security, services, partnerships with infrastructure vendors and network operators, all will be impacted.

How WiMAX Works

WiMAX is designed to deliver broadband multimedia data ubiquitously over wireless links at several times the speed of traditional circuit-switched wireless systems, and over a far greater coverage area than today's proprietary wireless local network (WLAN) access solutions, such as 802.11 (WiFi) technology.

Where WiFi enables affordable broadband Internet access within short-range "hot spots," at distances measured in tens of meters, WiMAX is designed to deliver the same access at similar costs, but across tens of kilometers — and ultimately, with greater performance and higher speeds. In short, where WiFi provides high bandwidth but not distance, and current cellular systems provide distance, but not high bandwidth, WiMAX will provide both.

WiMAX will give users uninterrupted and untethered access to a rich variety of high-bandwidth services — not only around offices, homes, coffee shops, air-

Go To Table of Contents | Go To Ad Index

By Mark Whitton

ports, and hotels, but also as users roam in rural, suburban, and metropolitan areas.

What's more, with WiMAX, users will no longer perceive wireless Internet access as being inferior in quality compared with today's fixed DSL and cable access offers. Instead, WiMAX is expected to bring long-sought-after performance parity between wireless and wired Internet access.

These capabilities are possible because the standard upon which WiMAX technology is based — IEEE 802.16 — is being designed from the ground up to be truly broadband and packet based. A non-line-of-sight technology, IEEE 802.16e (the 'e' refers to the mobile version of the standard) is based on orthogonal frequency division multiplexing (OFDM) and OFDM with multiple access (OFDMA), a new air interface that brings significantly improved levels of spectral efficiency, data throughput, and capacity compared to previous generations of radio technologies. Moreover, when combined with multiple-input multiple-output (MIMO) antenna processing technology, the resulting OFDM-MIMO combination can boost capacity and performance even further.

Will WiMAX Replace WiFi?

WiMAX and WiFi are somewhat independent, addressing slightly different needs. WiMAX uses private, licensed spectrum and provides WiFi-like service with guaranteed performance to larger public areas, similar in coverage to cellular networks today. WiFi uses shared spectrum and operates at short distances, making it ideal for low-cost, private networks (where usage of the network is constrained to an office building or campus) or "free" public systems (where service guarantees are not required).

Companies like Intel are committed to delivering dual-mode chipsets (WiFi + WiMAX) for next-generation devices. This would allow a user to access WiFi in the office, school, or home, and then roam onto a public WiMAX net-

work after leaving the WiFi coverage area. WiMAX can also deliver the "last-mile" connection to a home or office where cable or DSL service doesn't reach.

Will WiMAX Have Any Performance Problems?

Early WLANs struggled with security and latency issues. WiMAX is being implemented based on WLAN lessons learned and will be equivalent to WLAN state-of-the-art security. And, WiMAX won't suffer from the same performance problems in cases where it is deployed in licensed spectrum (which is where the majority of it will be deployed), or in low-density rural areas using unlicensed spectrum. This is because a single network owner engineers and controls the usage and configuration of the network, avoiding the "tragedy of commons" scenario in public WiFi networks. At the same time, WiMAX will share WiFi's most attractive attributes: ease of use, high-speed connections, and a wide variety of low-cost devices available through conventional outlets.

Will WiMAX Compete With Cellular Or 3G?

A lot of debate has centered around whether these two technologies will compete with or actually complement one another. The truth is, the answer is more nuanced than a simple yes or no. 3G is coming up from the voice world trying to do as much data/Internet functions as it can, but it's stretched pretty far. There's going to be a limit as to how much more broadband it can get. Also, the more broadband you're pulling, the bigger the screen has to be because there's a relationship between a device's size and how much bandwidth it requires. WiMAX makes more sense for laptops than handsets. On the other hand, WiMAX isn't designed for mobile voice. It will offer a better version of data than 3G, but it becomes challenging to offer voice with WiMAX when roaming.

Is WiMAX Currently Available?

The fixed 802.12-2004 standard is now available and well-suited for the last-mile-type access mentioned above where cable or DSL service can't be economically provisioned to a home or office. In North America alone, there is a significant rural market of underserved communities that fixed WiMAX can address.

The first of these 802.12-2004 networks will launch later this summer in Alberta, Canada. Once up and running, it will operate in the 3.5GHz spectrum band and be available to roughly 80 percent of SAB residents and businesses, equipping them with fixed broadband wireless access at data rates between one and three Mbps. It will also support services like e-mail, high-speed Internet access, multimedia applications including streaming video and music, VoIP and other real-time business collaboration services, in addition to video surveillance and remote telemetry.

Specifications for the mobile version of WiMAX, or 802.16-2005 (formerly 'e'), were announced at the end of 2005. Expect to see trials this summer with commercial deployments in 2007. Korea will be a good place to watch in the coming months as the country becomes an early-mover with its own homegrown version of mobile WiMAX called WiBro, short for wireless broadband.

So, how does an enterprise prepare for WiMAX?

By 2008, WiMAX connectivity will be embedded in the base silicon of most new laptops alongside WiFi as a standard capability. Even before this, WiMAX will be enabled through laptop cards or dedicated devices with costs ranging from $100 to $500. The next two years give IT managers time to ready their networks, taking into account the security and mobility infrastructure needed to support a broad range of computing and communication devices that will inevitably access their

Where WiFi provides high bandwidth but not distance, and current cellular systems provide distance, but not high bandwidth, WiMAX will provide both.

systems and applications via multiple public and private networks. Now is the time to learn about the new capabilities WiMAX is expected to deliver and invest in a mobility infrastructure that will anchor WiMAX devices in the home network and create the service provider partnerships required to enable public roaming for employees and clients.

WiMAX — Delivering A Truly Mobile, Internet Everywhere Lifestyle

WiMAX skeptics contend that the technology has a long way to go and isn't really necessary given the wireless networks already in place. No, WiMAX won't change things overnight or immediately have all of the capabilities that come with a technology's evolution and maturation. Getting to an "Internet everywhere" point will take time. The world experienced a similar evolution with cellular technology. The difference now – expectations are higher. We've already become so accustomed to being able to use our mobile phones at any moment, anywhere. That's only been the norm for the past decade. The next phase is coming, maybe even faster. WiMAX will be everywhere. Figuratively speaking, it will leak through the walls. Think now about how it will impact the enterprise and, as Forbes predicts, "change the way we live." IT

Mark Whitton is vice president and general manager, Nortel WiMAX Networks at Nortel. For more information, please visit the company online at http://www.nortel.com. (news - alert)

Go To Table of Contents | Go To Ad Index

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A Comparison of Peer-To-Peer and Client-Server Architectures in VoIP Systems

There has been much interest of late in peer-to-peer VoIP systems. With the explosive growth that the flagship peer-to-peer VoIP application Skype has enjoyed many people who in the past scoffed at the idea are now giving this technology a second look. Proponents of the peer-to-peer approach cite its reduced infrastructure costs as a compelling argument for its superiority. Has a silver bullet been found? This article compares peer-to-peer technology as it applies to VoIP with the older and more traditional client-server approach in an attempt to answer this question. The focus is on technology — not underlying business constraints that may dictate the use of one approach or another.

Stages of a Typical VoIP Call

A typical VoIP (define - news - alert) session consists of three main stages: call setup, media transfer, and call teardown. Call setup consists of locating the callee, determining how to best communicate (e.g., which codec to use), tackling technical issues that may exist (e.g., presence of NATs and firewalls) and routing the call setup information to the callee (i.e., ringing his phone). Media transfer is initiated upon successful completion of the call setup and involves exchanging media (e.g., voice, video) directly between the endpoints unless technical difficulties (e.g., NATs or firewalls) necessitate the relay of the media over an intermediary network element. Call teardown is the process of hanging up the phone and releasing any resources that may have been associated with the call.

The traditional client-server model relies on designated network components for call setup and possible media relay, while the peer-to-peer model takes advantage of a user "network" consisting of nodes or machines running a common application.

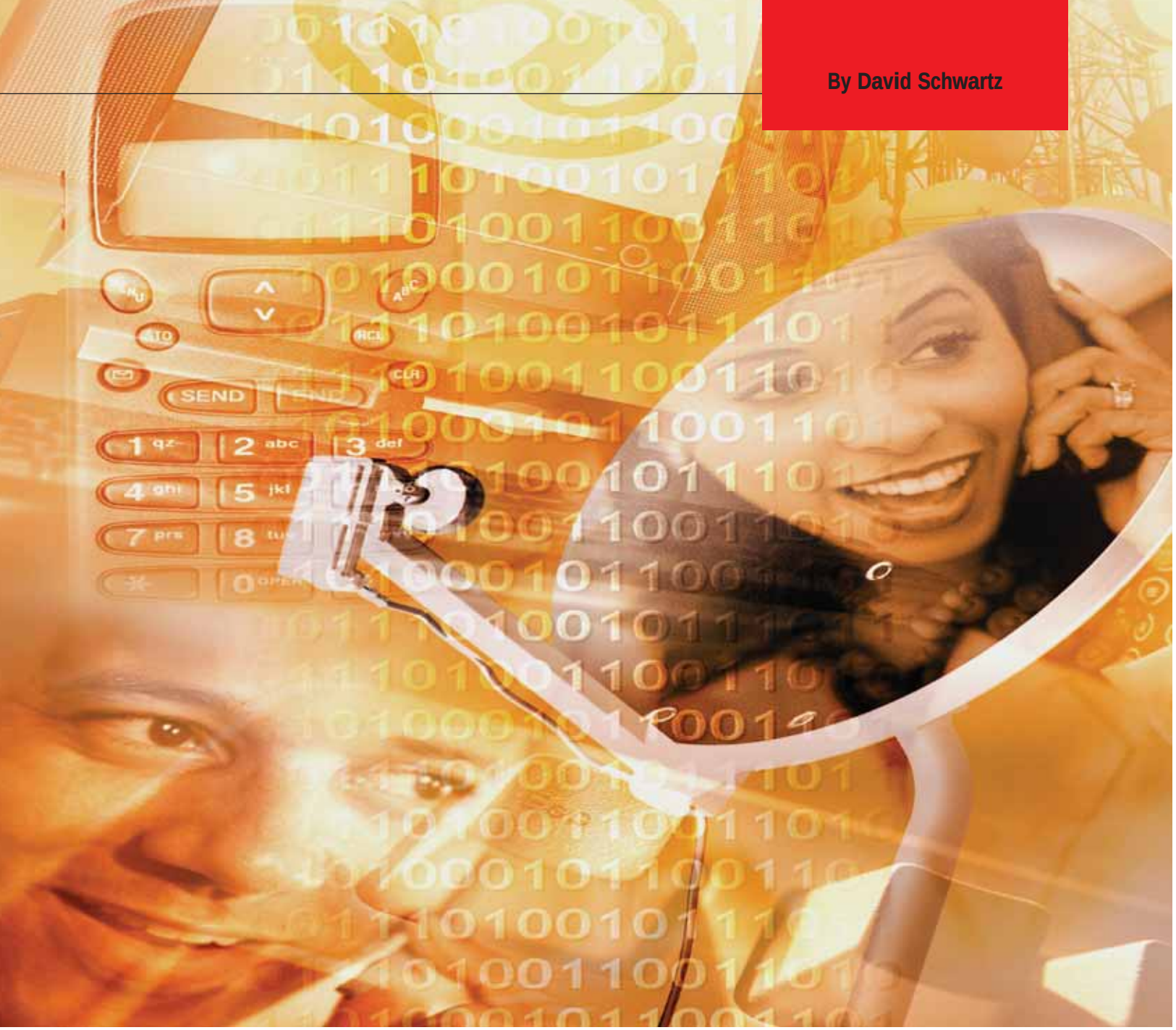
Scalability

In all likelihood, the most compelling argument in favor of peer-to-peer networks is their robustness. The peer-to-peer architecture enjoys the enviable characteristic of not having a single point of failure. Whereas in client server architectures all signaling communication between any two clients always travels to the server (thereby creating a central point of failure), in peer-to-peer systems, signaling information for different calls rarely travels the same end-to-end path twice even between the same two endpoints. A result of this architecture is that any number of nodes can be down and the end-to-end communication will still proceed unhindered. Each new user or node in the system increases scalability of the overall network by adding more routing options to a given call setup. In contrast, the client-server model requires large investments in infrastructure (e.g., redundant components for high availability, advanced monitoring applications, etc.) to support a similar number of users.

Given this scalable and robust architecture the questions that beg to be asked are why is the client-server model still around? Why is the growth of peer-to-peer VoIP being attributed for the

Go To Table of Contents | Go To Ad Index

By David Schwartz



most part to residential calling? Why have many corporate and enterprise users to date resisted the temptation of peer-to-peer communications?

An understanding of some of the shortcomings of peer-to-peer architectures can help answer these questions and may pave the way for hybrid peer-to-peer/client-server architectures that take advantage of the best elements of each. Specifically, we would like to look at: bandwidth utilization, security requirements, off network peering complexity and device mobility and show that the client-server model currently holds an edge in each of these categories over its peer-to-peer counterpart.

Bandwidth Utilization

Many calls today require relay of media via intermediary elements. Service providers are closer to the backbone of the Internet then desktop users and, in many cases, have lower layer peering arrangements in place with other service providers. Relay of media via the end user is far less optimal than that of corresponding client-server approach. Also, many node users are not happy to share their bandwidth with others during critical times of the day.

Security Requirements

Security concerns on peer-to-peer networks arise from the fact that these networks rely on "untrusted" intermediate nodes to relay data as opposed to "trusted" service providers in the client-server model. Peer-to-peer architecture is more prone to "man-in-the-middle attacks" and this being the case it is imperative that end-user data and/or media is always encrypted and that there is strong key management system ensuring that data is not compromised in transit. Even if these security steps are taken, it is still necessary for the community at large to trust that peer-to-peer applications perform this task adequately for this architecture to gain more traction. Based on the Skype phenomenon, it would appear that, while most residen-

tial users afford this trust readily, corporate and enterprise users are more skeptical and have yet to take this "leap of faith" in large numbers.

Off-Net Peering Complexity

Earlier, we spoke of the call setup stage being comprised of a number of steps. Probably the most time consuming step in a peer-to-peer network is that of finding the user on the other side of the network that needs to be signaled. Whereas in the client-server model information about end-users is obtained readily from a cache in the server, in peer-to-peer networks, a time consuming complex algorithm-based search is required to achieve the same result. In the case where the desired end user is on a different network (such as the PSTN), the situation is far worse for the peer-to-peer network. As opposed to client-server architectures, where peering relationships are commonplace and standard, in the peer-to-peer world, by its very nature, these relationships do not readily exist and peering is, therefore, not a trivial task. As big as a network gets, it is still only one of many such networks worldwide and, as a result, off-net peering issues must be resolved for peer-to-peer architectures to grow ubiquitously.

Off-net peering issues must be resolved for peer-to-peer architectures to grow ubiquitously.

Device Mobility

This somewhat orthogonal issue may yet prove to be the toughest challenge to the peer-to-peer model. As we are all aware, many of the calls today are being initiated via presence lists. Whereas in the past, to initiate a call we would dial a number, today, we compile lists of friends in presence lists and, when we see that our friends are "online," we click on their icon/name to initiate communication. The pure peer-to-peer model assumes no servers and as a result this "list" is local to each user's machine. There are two problems with this:

• When a user "wakes up," this new state must be propagated to all his "friends" regardless of their online status. This adds tremendous load to the system and does not scale well.

• One of the most compelling arguments for VoIP is the freedom it allows its users when moving from place to place. As opposed to the legacy PSTN phone network, where a user's phone is fixed to a location, VoIP allows for a user to "log-in" from anywhere and on any device to make calls. If the presence list is fixed to a device and not stored on a server somewhere, how do I "take it with me?"

Hybrid Networks

What if we were to combine the best of both networks to create one that was more than the sum of its parts? What elements of each would we take? There isn't one answer to this and many future networks will have different elements of each. The gist of such a network is that each user node is connected also to the peer-to-peer network and also to an ITSP. If the destination is on this network the traffic flow might be peer-to-peer and if not it is client-server and the off-net peering is done by the server. If media relay is needed, it can be taken care of by the server (counterpart of the client) at the ITSP and not by user edge-nodes.

Conclusion

While there are merits to a peer-to-peer architecture in terms of scalability, the short to medium term promises strong contention from traditional client-server architectures. In the long run, look for combinations of the two architectures forming hybrid networks taking advantage of the positives each has to offer. IT

David Schwartz is founder and chief technical officer at Kayote Networks. For more information, please visit the company online at http://www.kayote.com. (news - alert)

Go To Table of Contents | Go To Ad Index

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Configurable Open Source DSP Software for VoIP — Is it Right for You?

The time has come for Open Source to do for Digital Signal Processing (DSP) applications what it has already done for other software applications: allow developers to leverage proven software yet still customize it to their particular applications. DSP applications bring with them some unique challenges with respect to Open Source, but with unique challenges come creative solutions.

As product developers, what do we want to do? We want to develop a product that meets a set of requirements as efficiently as possible. Open Source Software is an excellent tool to have in one's toolbox. By making use of (presumably) proven software, engineers can reduce a product's development time.

But what do we want to do? Imagine a time when it may be possible to generate efficient production-ready software by connecting together a bunch of blocks in a PC-based diagram editor. Yes, applications like this exist today for the purpose of modeling and simulation, but they tend to generate inefficient code and are not well-suited to generating code that is easily used in an embedded system.

Part of the difficulty is that we are dealing with two opposing forces — generality and efficiency. As I type this article using a modern word processor, a good analogy stares me right in the face. I probably use fewer than 10 percent of the features offered by this word processor. The word processor software takes up quite a bit of disk space, and I can only guess how much CPU resources are used by even the simplest Windows-based application. Fortunately, disk space is plentiful these days and I have the seemingly limitless power of a 3 GHz CPU at my fingertips. Unfortunately, resources are not so abundant in embedded and DSP applications.

While we may not be at the point where we can create efficient software using block diagram editors, at least one option does exist today to take us part way there — in particular for VoIP DSP software. Before presenting this option, it is helpful to review traditional DSP solutions.

Traditional DSP Solutions

What DSP options have designers had available to them up until now? At one end of the spectrum is the fixed-function chip. Fixed-function chips are designed and optimized for a specialized application. While they are very efficient, they are also very inflexible. They are available off-the-shelf, yielding a faster time to market for those who use the chips.

At the other end of the spectrum lies the programmable DSP. The programmable DSP can yield very efficient solutions also. After all, many fixed-function chips are actually DSPs that are bundled with application specific software. The difference is that when the designer starts out with a programmable DSP, he or she is faced with the task of developing a considerable amount of software as well as the underlying DSP algorithms themselves.

Fortunately, there are other options somewhere between the two ends of the spectrum. Many designers opt to license the DSP algorithms from third-party companies that specialize in such things. The designers then are left with the job of writing the application code that makes use of the algorithms. Writing the application software itself is no small task, and the intense real-time requirements imposed on a DSP application certainly contribute complexity and difficulty to the problem.

Reference Applications and Reference Frameworks

In order to save designers time, a few DSP software vendors offer reference applications. The reference applications

Go To Table of Contents | Go To Ad Index

By Scott D. Kurtz

are offered primarily in "C" source code format. Since it is not reasonable to expect a reference application to be a better fit for a design than a fixed function chip will be, having the source code enables the designer to customize it and make it a perfect fit.

It is important to note the difference between a reference application and a reference framework. A reference framework tends to include a generic sample application, that takes data in, processes it with a sample algorithm, and outputs data. A reference framework is not designed with any application in mind. A reference application may start with a reference framework, but it is designed with a specific application, such as VoIP, in mind. For example, a reference VoIP application should incorporate suitable interfaces such as IP, PCM, and host interfaces. It should also include the algorithms typically used in VoIP (define - news - alert) systems such as speech compression, echo cancellation, conferencing, tone detection and generation, and fax relay. It should also support the channel configurations that are typical in VoIP gateways, PBXs, and endpoints. A VoIP reference application is therefore a far better starting point for a VoIP designer than a reference framework.

VoIP applications vary widely. Features that vary between VoIP applications include the number of channels per unit or chip, channel configurations, peripherals used for input and output, and required algorithms. A reference application that tries to be everything to everybody will include many features that a particular application may not need. Just like today's word processors, an application this general will take up more processor resources (CPU cycles and memory) than an application that that is more tailored to a specific configuration. This leaves the designer with the task of removing unneeded functionality from the reference application. On the other hand, if a reference application is more specific it may not include all the functionality needed by a particular application, leaving the

designer to add functionality, which tends to be even more difficult than removing functionality. While the reference application provides a far better starting point than the aforementioned options, it still leaves something to be desired.

Configurable Reference Applications

This leads us to the Configurable Reference Application. A Configurable Reference Application is one that can be customized easily using a windows-based Graphical User Interface (GUI). The designer uses a configuration utility to select the features (algorithms, channel types, number of channels, peripherals) that he or she wants included in the target application. A fully featured configuration utility will even allow the designer to select the target DSP chip. Once all selections are made, the configuration utility modifies the application source code and project files, eliminating the unnecessary features automatically. The configuration utility then invokes the appropriate compile tools and generates a binary DSP-downloadable image.

If this were the end of it, we might still be stuck with some inflexibility. Even a full featured reference application cannot anticipate everybody's needs. Some applications may require custom algorithms or custom interfaces. A binary software image is what it is. It is not made to be changed. This is where Open Source brings its value back to the table. By having the reference application's source code, already customized by the configuration utility, the designer can make the last-mile changes that achieve the exact required functionality — nothing more, nothing less.

A good reference application should go beyond the boundary of the DSP itself; it should also include software that simplifies the interface between the DSP and the host processor. This simplification is done by providing a software abstraction layer (in source code, of course). The software abstraction layer provides a set of APIs that perform functions such as downloading the DSP software image, configuring the chip, setting up and tearing down channels, reading and writing packets, etc.

The designer builds the supplied API software into the host microcontroller's software. The microcontroller's application software calls the API functions, which in turn call hardware specific drivers that carry messages between the microcontroller and DSP over the interface of choice. For example, some systems may communicate between host and DSP via a parallel host port interface while others may communicate via Ethernet.

Is Open Source DSP Right For You?

There are many tradeoffs to consider in choosing the right DSP solution: flexibility, efficiency, cost, time-to-market, and having control of your product. Efficiency can be measured in a number of ways. In many applications, the goal is to minimize cost per channel. In other applications, it is more important to minimize total power dissipation or board space.

Cost includes two general components, recurring and non-recurring. Recurring cost includes the price of the chip (and any required peripheral chips), the software licensing fee, the cost associated with a smaller or larger printed circuit board, etc. Non-recurring cost includes hardware and software development cost and one-time software licensing fees. Yet another cost is opportunity cost. This relates to time-to-market. If a product takes a long time to bring to market, one must consider the revenue that is lost by not bringing the product to market sooner.

Having control of your product is not to be overlooked. Chips are discontinued from time to time. It is important to consider the likelihood that a chip will be discontinued during a product's lifetime, and the cost involved in replacing it. Another aspect to having control

Part of the difficulty is that we are dealing with two opposing forces — generality and efficiency.

of your product is related to making changes. Even if a fixed function chip meets a product's needs today, it does not allow for feature enhancements down the road.

The fixed-function chips tend to be the least costly for very low-volume products. Cost includes both recurring and non-recurring cost. Since the non-recurring cost is zero (assuming that you aren't the one making the chip), that is reflected in a low cost. As production volume increases, however, it is often justified to spend some non-recurring dollars to lower the recurring cost. The fixed function chips also tend to be efficient because they are designed to implement a specific set of functions. It is important to qualify the statements about low cost and high efficiency of a fixed function chip. This is only the case if the chip has the exact functionality required by the user. If it has excess functionality, you end up paying for features and performance that you don't need.

Configured applications are nearly as efficient (arguably as efficient) and cost-effective as fixed function chips without the same qualification. They are far more flexible because they are configurable and because they are software-based and can be modified and updated. Since configurable applications run on general purpose DSPs, the likelihood that the chips may be discontinued is less than in the case of a fixed-function chip.

Programming the entire solution yourself gives you, the designer, ultimate flexibility, but the cost is enormous due to the significant software development effort as well as the opportunity cost.

The choice is, of course, yours. IT

Scott Kurtz is vice president at Adaptive Digital Technologies, Inc. For more information please visit the company online at http://www.adaptivedigital.com. (news - alert)


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How Open Source Spurs IP PBX Innovation

Being able to solve your own problems is an essential part of being an entrepreneur. It ranks right up there with being able to stretch a dollar, being in three places at once and constantly struggling to be the best at everything you do, as the top hallmarks of the entrepreneurial spirit. It's as if the open source model was tailor-made for just this type of individual, and when applied to a phone system, you've got a match made in heaven. An open source IP PBX allows even the smallest businesses to tap into features they've never dreamed they could have in a phone system, while providing large enterprises with everything they need at what is usually a fraction of the cost of a proprietary system.

Open source is the term used to refer to software projects where the source code is made available by the author for the benefit of the users. Users or organizations who have the will and expertise can modify the code, and in so doing, customize the software for their particular use. The open source software philosophy has had a profound impact on the Internet, from the very low level, such as the Linux operating system, through the Apache Web servers that serve up an enormous share of the Web, to the Mozilla project and the Firefox Web browser. It is only natural, as IP technologies converge with telephony, that open source development should follow.

The open source IP PBX (define - news - alert) brings the benefits associated with open source: stability, rapid development, flexibility, and cost savings, to a domain that has been dominated by proprietary technology controlled by large corporate entities. VoIP presents an enormous opportunity for businesses to save money, integrate data systems, and improve accessibility to its work force. By leveraging the collective development work, real-world deployment scenarios, and testing done by a large open source developer community, open source IP PBX systems emerge and mature more quickly than proprietary systems can.

A common misconception of open source software is that it is free of charge. The refrain most used to straighten out this notion is that open source is 'free as in speech, not free as in beer'. By definition, software that is open source must have available source code, but that does not mean the product itself is free of charge. While many open source software packages are available at little or no cost, commercial packages of open source software are also available and are still considered open source. The most widely recognized example of this is the relationship of Red Hat and Linux. Red Hat sells and supports a particular targeted version of the Linux operating system. While Linux is free, Red Hat's Linux products are commercially supported and tested, but still built on that free, open source software.

In the open source IP PBX domain, Asterisk is the most widely deployed solution and has incredible momentum. Digium is the corporate entity that provides the direction and management of the Asterisk project, keeping the development flowing and acting as a caretaker of the source code. The community that surrounds Asterisk can build upon the core IP PBX technology, adding features that allow them to build commercial Asterisk packages tailored for VoIP providers, SMBs, call centers, etc., while Digium supports those vendors and those vendors support their users. Digium's efforts are largely funded through sales of telephony interface cards, used in conjunction with Asterisk software to create hybrid TDM-VoIP PBX systems.

Pingtel's SIPxchange, built on the software projects from the non-profit organization SIPfoundry, is another open source IP PBX solution available today.

Some of the key advantages of open source IP PBX are:

Cost Savings

Open source software is often associated with cost savings for those that choose to deploy it. This is particularly

Go To Table of Contents | Go To Ad Index

By Tristan Degenhardt

visible when comparing a free IP PBX to a proprietary system because of the high cost of those proprietary phone systems. Even when factoring in hardware, a commercial implementation of an open source IP PBX with support, and deployment costs, the price gap is often astonishingly wide when compared to a traditional phone system. This means that now even small businesses can afford an enterprise class phone system, and potentially save money by using VoIP services for their calls.

Stability

"Given enough eyeballs, all bugs are shallow." Sometimes called Linus's Law, this was adapted from a quote by Linus Torvalds, the creator of the Linux operating system. It illustrates the fact that open source software often has a much larger testing base than conventional software and has the potential to be more stable that software developed by deep-pocketed proprietary juggernauts.

In addition to the wide base of users testing the software as it's being developed, the free nature of open source software allows technically proficient users to actually fix the bugs that they find and that matter most to them, rather than waiting for a vendor to do it for them. This is particularly relevant in the telephony space where there exists a higher proportion of technical individuals in the user base for the software that's being developed. What percentage of users of Web browsers possess enough technical knowledge to actually write one? Hardly any. Compare that to IP PBX users and that percentage is significantly higher, leading to rapid and stable development of the most important features.

Interoperability and Rapid Development

In addition to improved stability, the open source development method also presents a great benefit to interoperability, something especially important as VoIP technology matures. Open source platforms such as Asterisk have users in hundreds of countries, connecting it to every variety of hardware imaginable. A programmer in Norway can add support for Norwegian busy tones, and test its compatibility with the Norwegian PSTN. Multiply this type of targeted development across a multitude of international users, and it becomes apparent how an open source platform can quickly achieve a task that would be prohibitively expensive for a commercial entity to accomplish.` `` 89i

This process also works for interoperability with equipment from other manufacturers. Often, the manufacturers of VoIP devices such as SIP handsets will donate development time to ensure that their products interoperate with open-source software. This allows VoIP offerings based on open source projects to interoperate with a wide array of devices, giving consumers more choice.

Commercial Business Models & Open Source

A common analogy about commercial open source business models takes the beer out on the town: The recipe to make beer is readily available for free on the Web, a premium beer at a bar will cost you about five bucks, and a cab ride home runs about twenty dollars. Your free beer recipe is your freely available open source code. The premium draft represents the companies selling pre-packaged open-source software (and perhaps services if there's also a band playing and you've tipped your bartender). The cab ride home represents the service industry that has grown up around supporting open source software and is where a lot of the revenue is to be made with open source. Despite the recipe being freely available, people everywhere still head out for beer and businesses thrive.

There are many examples of this ecosystem at work in the open source telephony space. Digium, the corporate sponsor of Asterisk sells telephony cards, along with a commercial version of their software called Asterisk Business Edition. Pingtel sells a commercially supported version of their open source PBX platform, SIPxchange. On the purely service side of the spectrum, companies like Sokol Associates provide Asterisk training and organize the AstriCon Asterisk convention.

The emergence of the open source IP PBX into the market is a good sign for consumers of phone systems. Analysts have been trumpeting the incredible growth predicted for IP and hybrid PBXs, while witnessing a decline in TDM systems. Look for upstart startups to shake up this space as adoption of Linux and Firefox have made Microsoft sit up and take notice. The next round of truly innovative IP PBX applications will come not from the names you'd expect, but from the small companies gaining momentum now, when the IP PBX market is beginning its rise to the top. As more users adopt VoIP for their homes with services like Skype and Vonage, they will bring their experience into the workplace and be looking for inexpensive, business-class VoIP solutions and open source IP PBXs certainly fit the bill. IT

The free nature of open source software allows technically proficient users to actually fix the bugs that they find.

Tristan Degenhardt is vice president of operations at Switchvox. For more information, please visit the company online http://www.switchvox.com. (news - alert)

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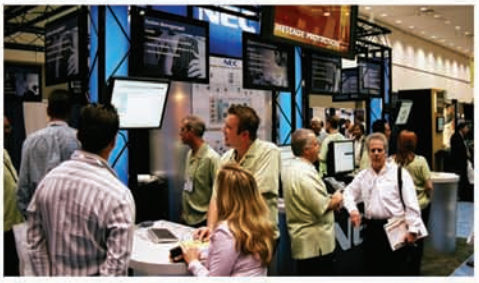


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Network Neutrality is an Answer to the Wrong Problem

Sometimes a small change that goes almost unnoticed makes a big difference. That's what's happened as a result of last summer's decision by the Federal Communications Commission to allow the final deregulation of DSL. Based on a tortured misreading of the Supreme Court's Brand X decision that allowed cable modems to remain closed to third-party ISPs, the FCC allowed the Bells to do the same thing. So the owner of the wire — the incumbent local phone company — will soon have total control over the information content that flows over the wire.

The Bells themselves tried to make the change seem merely technical; after all, their ISPs already have the lion's share of DSL subscribers. But they got what they were looking for: Broadband Internet service will no longer be freely competitive. It will be, for most Americans, a two-vendor choice. Use the Bell's ISP, or the cable company's ISP. No other ISPs need apply, unless they manage to string their own wire.

And then a funny thing happened. They started to overplay their hand. The Bells' motivations became clear too quickly. They really, really don't like the Internet. Its business model is terribly far from the one they have grown to love, the one where a monopoly meters out scarce bandwidth on a "value of service" basis, charging for distance. The Bells' model focuses on value-added "services;" the Internet is about providing raw connectivity so that services can develop independently at the edges.

So by kicking the ISPs off of their "Broadband" networks, the Bells were setting the stage to replace the Internet we know and love with a substitute more to their liking. For one such model, just turn to your cell phone's "wireless Web."

You may not actually use that service. I don't. The Internet it ain't. There's nothing on their costly WAP service that I find worth paying for. Now, to be sure, I'd rather use a full-sized computer screen and keyboard than a tiny wireless phone display and keypad. But there's more to it than that. WAP is a walled garden, more like the Videotex services of the 1980s than the Internet.

But what about the new wireless "broadband" services, like Verizon Wireless' Broadband Access, which you can attach to your laptop? It does allow Internet Web surfing, to be sure. But its service contract has some rather onerous terms, including this humdinger:

"Unlimited NationalAccess/BroadbandAccess services cannot be used (1) for uploading, downloading or streaming of movies, music or games, (2) with server devices or with host computer applications, including, but not limited to, Web camera posts or broadcasts, automatic data feeds, Voice over IP (VoIP), automated machine-to-machine connections, or peer-to-peer (P2P) file sharing, or (3) as a substitute or backup for private lines or dedicated data connections."

Well, I'm sure they don't want you to use VoIP across it, especially given the outrageous rates they still charge for international telephone calls. Or upload your photos, when they can charge WAP prices for it, or download from iTunes when they offer a competing service at a higher price. But it goes even beyond that. These guys are control freaks. With only a small number of wireless companies to choose from, consumers don't have much power.

ISPs can't get away with that because it's too competitive — after all, you can always switch ISPs. Oh, oops, not any more! Cable companies are less likely to be as aggressively anti-consumer, but cable modems tend to be a bit costlier than DSL.

Thanks to some intemperate words by faux-AT&T Grand High Poobah Ed Whitacre, suspicion of the Bells plans is now spreading like wildfire. "Why should they be allowed to use my pipes? The Internet can't be free in that sense, because we and the cable companies have

Go To Table of Contents | Go To Ad Index

By Fred Goldstein

made an investment and for a Google or Yahoo or Vonage or anybody to expect to use these pipes free is nuts." Once the firestorm broke, a then-SBC spokesman tried to say that he was only talking about streaming television over the Internet, "IPTV." But that was just damage control, obviously not what he meant. Besides, he didn't seem to realize that cable companies don't get paid by content providers; they pay for content. And Vonage pays for its ISP services too. Clearly the Bells are looking to take control over Internet content, and either take a cut of the content action (pay them to use iTunes or eBay), or charge "Internet Message Units" for access via their wires.

One response calls for new "network neutrality" rules. These would impose new content regulation on ISPs. It sounds nice at first. After all, we don't really want Verizon to tell people whose news they can read on line, what Internet radio stations they can listen to, or where they can shop. But it's the wrong approach. Network neutrality is not about Internet freedom. It's only a way to feed the prisoners. Once we get this far, the war is already lost.

The problem is not that Internet Service Providers can discriminate. The Internet is considered an "information" service, rather than plain "telecommunications." A retail ISP's job, whether it's run by an independent dial-up or broadband provider, a cable company, or a telephone company, is to connect large numbers of subscribers to the Internet backbone, and provide them with certain vertical services such as e-mail, Web hosting, and DNS. And it's their job to try to block spam, viruses, and the like.

Internet backbone bandwidth isn't free; retail ISPs generally have to pay for it. (Top backbone ISPs, on the other hand, just "peer" with each other, but they have to have an expensive network in order to be allowed to play at that table.) So today's retail broadband subscribers use, on average, less than 100 kilobits/second of backbone capacity, and ISPs are, therefore, able to "oversubscribe" their backbone links by at least double-digit ratios.

Thus it's a real concern if Internet users start watching high definition television by means of Internet streaming. It's especially a concern to the smaller, surviving ISPs who don't own the nationwide backbones that the mega-Bells have now acquired. Big streams can displace potentially data applications that have nowhere else to turn to. It's even reasonable to suggest that companies that own wires should be allowed to charge for dedicated bandwidth, if that's what's needed for some applications. Rules or laws that require all ISPs to carry everything they're asked to, on a nondiscriminatory basis, are thus dangerous and indeed risk making the Internet itself nearly unusable. Indeed, their major beneficiaries are likely to be spammers, adware operators, and others who inhabit the gray area, undesirable but not clearly illegal.

The press is already raising the flag about the "two-tier Internet." They accept Whitacre's restatements at face value, and suggest that the battle is over whether network operators will charge content providers extra for "priority" service for their video streams. But that's not the problem. We already have broadcast, cable, and satellite TV. The problem is that telcos want to discriminate against different data providers, or use "deep packet inspection" to charge for something other than raw packet delivery. Vendors are already hawking gear that can, for instance, monitor for e-mail being downloaded from a third-party server, to enable the network operator to bill by the message.

What's missing from the picture is a boundary between what is and what isn't Internet. The telcos want to call everything "Internet" so they can control it. Net neutrality advocates then want to regulate that "Internet" so they won't be excluded. This group includes VoIP providers, who recognize that they are in the crosshairs of the telco-ISPs, who rightly see them as competition for their surviving, though declining, voice business.

But the answer isn't to regulate the "Internet" per se: Not everything is the "Internet." It's to restore choice. It's vital to guarantee that local connectivity, raw bandwidth, remains available on the wholesale market, so that consumers have a choice of ISP. If there's a real choice of ISPs, then the free market will sort out the details. It's the telco-cable duopoly that makes the faux-Internet such a possibility. Here and there, a wireless ISP or cable overbuilder might offer a third choice, but shy of wholesale connectivity, there'll be no free market for information. What good is freedom of the press when a few wealthy publishers control all avenues of delivery?

Maybe video streaming won't be too expensive after all, so some ISPs will allow it. But maybe some ISPs can offer a more constrained, cheaper service that caps certain usage patterns. Maybe some users will be willing to pay extra for a higher quality link to a VoIP gateway of their choice. Maybe some want their Internet raw, while others want tight spam filters, and others still want their ISP to provide "family-friendly" censorship. These are not the kinds of questions that belong in a Congressional committee, or in an FCC Docket, or in court. They're the kind of questions that the ISP industry has been dealing with for over a decade. Let's not let the Bells kill it off, or try to replace freedom of speech with content regulation. IT

Fred Goldstein is Principal of Ionary Consulting in Newton, Massachusetts. For more information, please visit the firm online at http://www.ionary.com. (news - alert)

Go To Table of Contents | Go To Ad Index

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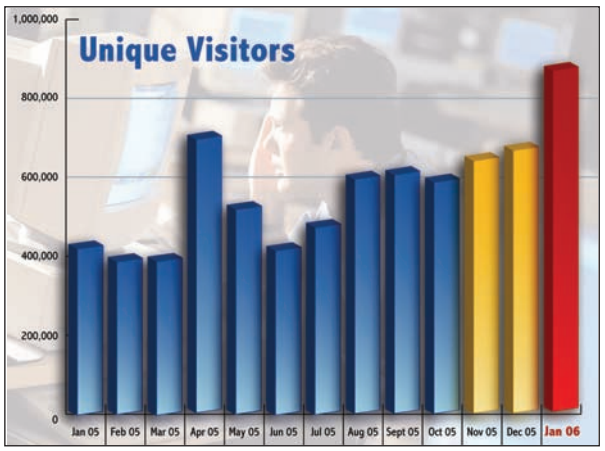

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CEO Spotlight

Charlie Langdon
President
NEC Unified Solutions

In the CEO Spotlight section in *Internet Telephony*®, we recognize the outstanding work performed by exemplary companies. Each month we bring you the opinions of the heads of companies leading the Internet telephony industry now and helping to shape the future of the industry. This month, we spoke with NEC Unified Solutions (news - alert) President Charlie Langdon.

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

CL: Simply put our goal is to be the "First Choice" provider to customers based on our skills, solutions, and commitment to customer satisfaction. By listening versus preaching we will provide flexible solutions and services to satisfy customer goals. Over the next year, NEC Unified Solutions will continue to bring innovative products and solutions to the market that address critical, industry-specific issues, as we have done this year with new solutions designed for two key verticals: Higher Education and Healthcare.

Additionally, it is vitally important to our customers that they have choices on how they engage NEC. With this in mind, we continue to strengthen our dedication to our channel partners. We view our partners as an extension of the NEC organization and are investing to ensure their success. Our mainstream products and solution road maps are designed with our channel partners in mind.

We intend to be the market's leading total solutions provider; a company to whom customers and dealers will look first for converged voice and data solution needs. Moreover, we are dedicated to delivering the highest returns on customer technology investments and are committed to providing true financial value.

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

CL: With new technologies being developed and deployed at a rapid pace, many manufacturers are producing voice products without the necessary experience to ensure quality, and ultimately, customer satisfaction. NEC Unified Solutions will need to remain above the noise and focus on delivering and deploying solutions that meet true business needs, while leveraging our more than 100 years of voice experience and expertise.

However, NEC can't stop there. We will focus on supporting our customers through every stage of the IP telephony lifecycle, from adoption and utilization, to monitoring and management. Too many technologies have not lived up to their expectation — not because the technology was flawed — rather, it was not part of an overall solution designed for the customer's unique business requirements.

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

CL: The primary technology driving NEC's solutions today is VoIP and, more importantly, the applications that VoIP enables. We view IP as the open operating system for converged communications — our IP servers are not some PBX on steroids, they are application enablers. Think of voice as the biggest application of all time and you get the idea, but applications including Unified Messaging, Presence tools such as NEC's ComPortal, Remote Contact Center Agents, Converged Mobility, and Voice-Enabled Web Applications (VXML) all rely on IP technology as their core component. By taking these applications further, and integrating them into vertically and horizontally oriented custom solutions, we ensure that these applications drive real business value. Moreover, our Professional Services team provides customization and integration of these solutions into the customer's production environment. It is not enough to simply deploy these solutions, NEC also has the capability to manage, maintain, and secure these networks.

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

CL: We project that the two fastest growing areas over the next few years will be in the areas of mobility and customized applications enabled by the converged voice and data network.

Organizations are doing more and more business on the move. Mobility has become one of the main drivers of

Go To Table of Contents | Go To Ad Index

With the explosion of wireless dual mode devices, customers can further take advantage of the existing technology investments they have made within their organizations by allowing them to remain connected to their enterprise regardless of where they may be in the world.

IP communications and the enabling wireless technology carries the potential to revolutionize the office. We have seen a tremendous amount of interest in our UNIVERGE wireless communication solutions. With the explosion of wireless dual mode devices, customers can further take advantage of the existing technology investments they have made within their organizations by allowing them to remain connected to their enterprise regardless of where they may be in the world.

However, it is important to note that converged IP networks require that businesses implement new management practices in order to take advantage of the combined infrastructure. Evaluation needs to expand beyond product ROI and TCO and include life cycle services capability. Integration, remote network monitoring, change, and configuration, and security management across the converged voice and data network become even more critical.

As part of our "total solutions provider" approach, NEC Unified Solutions has developed a complete managed services suite that goes beyond traditional migration and maintenance offerings to focus on this growing space. Our customers understand the value that services provide, and we will continue to work with them to ensure that they are receiving the solutions they need to achieve their business goals.

As far as NEC is concerned, the future of IP communications, and the impact it will have on the way we communicate, has never looked so bright. IT

CEO Spotlight

Faramarz Mahdavi
CEO
MY IP Telephone

In the CEO Spotlight section in *Internet Telephony®*, we recognize the outstanding work performed by exemplary companies. Each month we bring you the opinions of the heads of companies leading the Internet telephony industry now and helping to shape the future of the industry. This month, we spoke with MY IP Telephone CEO, Faramarz Mahdavi. (news - alert)

GG: What is My IP Telephone's mission?

FM: We can't really speak about My IP Telephone without also mentioning My IP University. While My IP Telephone provides IP PBX and VoIP solutions and services, My IP University provides IP PBX and VoIP education and training. Therefore, our mission is to educate and empower our customers. The two organizations work hand-in-hand to provide education beginning with the pre-sales stage so customers can make a confident, educated, decision on what solutions to purchase, teach them to install their own system if they desire, and show them how to maintain and support their system so they are less dependent on a vendor.

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

FM: We operate on the premise that an IP PBX (define - news - alert) is just another node on the network, really no different than an E-mail system, firewall, or router. Terms like "next-generation" often portray an image of mystery, risk, or technological challenge of sorts. Our vision is that IP communication is actually simple and we are extremely well positioned to deliver the proper training, support, and equipment to give power, confidence, and sense of comfort to our customers. I should also add that we carefully scrutinize the products and solutions that we represent to ensure that they are, in fact, simple to use and maintain.

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

FM: I think only bad user experiences would upset the momentum. There are a lot of VoIP players out there today. It's confusing for customers and the intense competition among solution providers is likely to introduce issues with untested technology, prematurely released products, improperly implemented solutions, etc. We in the VoIP industry are truly our own worst enemy when it comes to ruining the progress of this technology. However, I can say that I am very impressed with the products that are in the market today. If I had to assess the current condition of the market, I would say the technology is solid and manufacturers are delivering on their claims that they provide excellent products. Unfortunately, some of the issues customers experience are a result of bad planning and implementation rather than product limitation or failure.

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

FM: You should keep in mind that we are not an innovation company. We don't develop products and we don't play in the bleeding edge. We take a very practical business approach, as opposed to a "bells and whistles" technology approach. What we see today, and will see in the near future, is a communications convergence. But, the convergence I am referring is not just voice and data on the same network, but rather a convergence of communications combined with business applications. More and more companies are utilizing phone, e-mail, and fax along with Instant Messaging and presence. Today, all of that can be tightly integrated to CRM systems, Web sites, ERP, etc. This is important to our future because, as the technology matures, we become more involved in application integration.

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

FM: I don't consider myself much of a technology visionary. However, it seems quite obvious to me, in the very near future, IP Telephone will not be the dominant force in the market, but rather an element of an overall communications industry. We need to start talking about IP Communications rather than just telephony. Take the Zultys system, for example. If you view it merely as a phone system with voicemail, you are not seeing the whole picture. The Zultys solution profoundly changes the way a company communicates and it goes far beyond dial tone and voicemail. IT

Go To Table of Contents | Go To Ad Index

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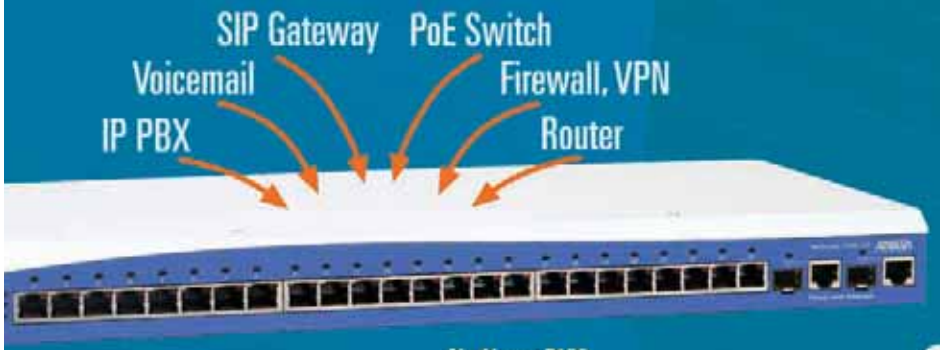

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