



# INTERNET TELEPHONY®

VOLUME 12/NUMBER 2 FEBRUARY 2009

The IP Communications Authority Since 1998™

## AUTOMATE THAT BUSINESS PROCESS!

Interactive Intelligence, Inc.  
leads the **CBPA** charge



IP in the  
**Contact Center**  
Pg. 38

Metro Ethernet  
**Marches On**  
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Mobile VoIP  
**and Video**  
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See Inside Cover Flap

# Looking for the elusive hard ROI from Unified Communications?



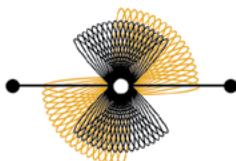
UC has been written about, talked about and blogged about. But where is the ROI? UC “productivity gains” seem to deliver a soft value even on the best day.

Interactive Intelligence believes that the real value for UC lies in using the capabilities of unified communications in a tightly integrated, more centralized world of business process automation - something we call communications-based process automation (CBPA). Contrast the potential:

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- 👤 Call Center Style **queuing and routing** becomes essential for predictably performing important steps in a work flow.
- 👤 **Recording** moves from call logging... to quality assurance and compliance in critical processes, including voice calls and computer screens.
- 👤 Real-time **supervisory monitoring** goes beyond coaching agents... to providing visibility, supervisory, audit, and report functions for those work processes that make a business tick.
- 👤 VOIP provides complete **location-independence**, allowing employees to participate in business processes from anywhere in the world.



To learn more, download this free white paper entitled “A New Approach to Business process Automation”, by visiting: [www.inin.com/CBPA-Whitepaper](http://www.inin.com/CBPA-Whitepaper)



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## VoIP Peering



# UNIFIED COMMUNICATIONS IN THE ENTERPRISE

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# VoIP Dead? No, We're All Just Blasé

The telecom industry's latest tempest-in-a-teacup occurred as 2008 faded into 2009. There's been an uncommon excess of profound meditation among industry pundits over whether VoIP is "dead" or not. I think this all started (or at least picked up steam) with Alec Saunders blog, "2008: The Year VoIP Died," which culminated with the earth-shattering observation that, "Voice over IP is just a transport and signaling technology. It's plumbing".

Everybody else then weighed in, from the distinguished Jon Arnold to the former Epicurus of VoIP himself, Jeff Pulver, co-founder of [Vonage](#) (and my former boss), who took time to proclaim that "Since the birth of the VoIP industry, the millions (maybe Billions) of dollars of VoIP Telco infrastructure that has been purchased, and will continue to be purchased, has been meaningful for quite a number of companies. So in real life, VoIP really isn't dead. For some people, VoIP has become a word associated with 'network plumbing.' And in that perspective, I can appreciate why some of my friends no longer believe that VoIP is cool. From my own perspective, I miss reading stories about startups prepared to leverage the concept that 'Voice is just an Application' and empower a new generation to communication in ways which were not possible or practical in the past. Something more than [Skype](#) and something different than Vonage. What we are missing are the totally disruptive startups willing to challenge the status quo."

He's right, of course. The network operators, carriers and providers that comprise the status quo, like the Borg in the TV series *Star Trek*, are rapidly assimilating that new transport and the tricks it can perform. The things an exciting new startup could offer 10 years ago can now be found as part of a feature set in a unified communications suite, or embedded in a service bundle offered by a cable company. Over the years we've been bombarded by so much hype, bells, whistles, and pronouncements of world-shaking transformation that we overlooked the genuine maturation of VoIP.

After all, the VoIP journey started with Jeff Pulver screaming about "free phone calls over the Internet" in 1994, and in the years since then we've become accustomed to the miraculous aura of IP and the cornucopia of products and services spewed forth from vendors and service providers that would revolutionize everything. As it turns out, IP *has* revolutionized everything, but minus the fireworks. It's now a part of your routine. It's why we sleep with our 3G phone and use our laptop more on the road. It's why we teleconference rather than spend hours and days on an airplane. It's why we can now work 18 to 20 hours a day instead of 8 or 12.

And yet companies focused exclusively on the magic of VoIP (i.e., Vonage) exasperate Wall Street. Innovative competitors, ranging from Skype to scads of little next-gen VoIP providers that purport to leave the PSTN behind but tend to run atop much of the older telcos' infrastructure, have demonstrated that it's too easy to enter the industry and merely provide VoIP service. The revenue "pie" gets cut up into too many pieces, much to the chagrin of formerly starry-eyed investors.

Like a 1960s radical who sold out to The System, VoIP went from being "highly disruptive" to "radical chic" to "mainstream ho-hum". VoIP is now simply a workhorse component of today's tantalizing products and services: unified communications, wireless broadband/4G mobile and upcoming intelligent systems for workforce management and communications-aided business processes. Some of these will be provided by hopeful startups, but most will be dished out by existing cable companies and telcos. **IT**

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

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## Wither Nortel?

By now, we are all aware of Nortel's carrier revenue being down 24 percent, its 4.5 billion dollar debt and the bankruptcy exploration first reported by the *Wall Street Journal*.

However, recently I spoke with Richard Lowe, Nortel's President of Carrier Networks, who did an admirable job addressing my questions. Lowe seems to be a great spokesman for the company. (Also on the line was Bruce Gustafson, Director of Marcom, Carrier Networks.)

Lowe volunteered press commentary about how telecom is seeing earnings estimates cut anywhere from 5-12 percent, adding, "Next year promises to be a tough CAPEX year for service providers and we're feeling our way right now in terms of what that business forecast is going to look like... We are trying to keep our head down and tail up here and focus on what we can control and not overreact to what comes out in the trade press or newspapers. But clearly some of our investors are anxious and some of our customers want reassurance that **Nortel** is still a viable entity."

He explained that his division is actually a large and profitable part of Nortel. "If you look at our results at the end of the third quarter and year to date, the business runs in the high teens operating margin, he said. Nortel is number two in CDMA globally and although he says Nortel has a smaller share of the GSM market, his company services 8 of the top 10 mobile operators."

Lowe recently visited China, landing a contract with China Telecom to extend its CDMA network. Then, in Japan, he spoke with **KDDI**, winning a 4G core contract in partnership with Hitachi and beating out formidable competitors. He says this is proof of how good the company's technology is.

When asked about rumors that Nortel could split up, Lowe's response was that the company has been transparent in their consideration to divest their Metro Ethernet Networks (MEN) business. Nortel recently restructured and carved out a billion and a half dollars of cost. But clearly the economic situation has pushed them to consider divesting other assets that could be sold off if the company gets the right price. He added, "Our customers want assurances that we are going to continue to service their networks and we're going to continue to develop the technology they need and I have provided those assurances to my large customers like **Verizon** and I have every intention of continuing to service their needs and honor the contractual obligations I have with them."

Lowe says Nortel will continue its focus on wireless technologies, partnering in LTE and 4G because it would be very expensive to invest in those areas on their own. (Nortel has moved funds from its in-house R&D WiMAX to develop more advanced LTE-based solutions. WiMAX R&D will now be handled by Nortel's Joint Venture for WiMAX with Israel's **Alvarion**.) We know that LTE and 4G are the future and these should be immensely profitable businesses for Nortel.

Lowe also believes in continued carrier VoIP growth — whether it be trunking, Class5 replacement or unified communications where they're applying enterprise business principles to carrier-hosted solutions. Indeed, he said that enterprise and carrier platforms are very similar and will be converging over time.

Furthermore, there are opportunities in applications such as FMC and network enablement. Lowe thinks these markets will take off and Nortel is in a position to take advantage of this growth. Nortel is also doing pioneering work in the "virtual worlds" area.

When I discuss Nortel's problems with my many talented friends there, they mention "cultural issues" that keep the company from doing better. Let's hope these issues get dealt with rapidly as at this point it seems something huge has to change to allow the company to remain a viable, successful and standalone communications player. **IT**

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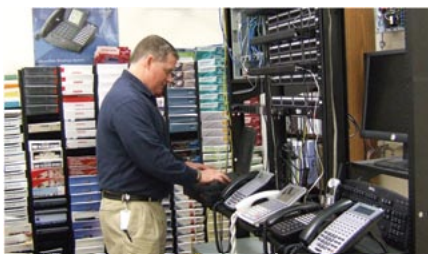
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## What's On TMCnet Right Now?

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 [www.tmcnet.com](http://www.tmcnet.com) for all the latest news and analysis. With more than 36 million page views per month, translating into more than 3.1 million unique 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.

### Survey: Mobile Device Users Want Smoother Service Uptake

Though the market itself is expected to fall this year compared to last, making mobile applications and services less complex could steer some U.S. and U.K. consumers toward purchases and new technologies in the space, according to a new survey commissioned by an Edison, New Jersey-based mobile device management company.

Officials at Mformation say their survey of 4,000 people showed that 95 percent of mobile users would use more data services if setup were easier.

[www.tmcnet.com/2711.1](http://www.tmcnet.com/2711.1)

### Mobile Broadband Alternatives on the Rise

We all know the near instant popularity of the iPhone, and the subsequent hype surrounding BlackBerry's Storm, and also T-Mobile's first Android-based phone, the G1. Certainly, the media hype around these devices has served their manufacturers well, but not to be lost in the mix is the effort and investment on the part of the carriers that have exclusive rights to these devices. AT&T, Verizon, and T-Mobile have all had to ensure their networks can handle the heavy load of data that suddenly runs across them, as has Sprint, which offers similar handsets from Samsung.

[www.tmcnet.com/2712.1](http://www.tmcnet.com/2712.1)

### Email in the Skies via Spectrum and LiveTV

Spectrum Signal Processing along with Vecima, an advanced custom radio provider, announced a partnership with LiveTV, an in-flight entertainment and connectivity systems for commercial aircraft, to supply next generation radios for the LiveTV's connectivity system.

Passengers can send and receive email with people on the ground using KiteLine, LiveTV's connectivity system, which uses a network of air-ground base stations to transmit data from an aircraft cabin to the ground.

[www.tmcnet.com/2713.1](http://www.tmcnet.com/2713.1)

### Telegent Brings Live Mobile TV to Notebook PCs

Telegent Systems, a provider of high performance, single-chip CMOS solutions enabling free-to-air and pay-per-view mobile TV in cellular phones and portable media devices, today introduced the TLG2300. This single-chip CMOS hybrid TV receiver works as a solution to the technical and integration challenges of adding live TV to personal computers (PCs) and portable devices.

The TLG2300 delivers the performance, low power and high integration needed to meet and exceed the requirements for embedding live TV in laptops, notebooks and mobile Internet devices (MIDs).

[www.tmcnet.com/2714.1](http://www.tmcnet.com/2714.1)

### TMC's Whitepapers of the Month

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

### Mobile Unified Communications: Delivering on the Promise of FMC Seamless Mobility

This whitepaper explores the value of merging unified communications (UC) with fixed mobile convergence (FMC) and examines various deployment scenarios. The paper subsequently highlights the need for a universal mobile unified communications client for mobile terminals such as single-mode Wi-Fi phones and dual-mode Wi-Fi/Cellular phones. Finally an overview of the key features and architecture of the mCUE™ universal mobile UC client from D2 Technologies is reviewed.

[www.tmcnet.com/2715.1](http://www.tmcnet.com/2715.1)

### The New New Thing: "Hybrid" Deployments for Speech

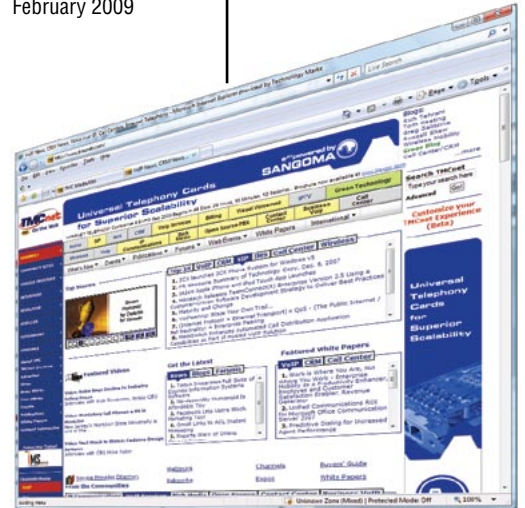
The new new thing is "hybrid". Find out about new deployment models for speech that lower the total cost of ownership. Get Datmonitor's white paper, Redefining Traditional Deployment Models for Speech in the Enterprise. Take a new perspective when evaluating speech services and the many options for deployment.

[www.tmcnet.com/2663.1](http://www.tmcnet.com/2663.1)

### Selecting a Gateway for your Microsoft Office Communications Server 2007 Deployment

Microsoft Office Communications Server 2007 allows companies to integrate VoIP technology into existing telephony infrastructure, eliminating the need for expensive network overhauls and also extending the useful life of existing investments. The purpose of this white paper is to propose the criteria on which to select a SIP-based gateway appliance to connect Microsoft Office Communications Server 2007 with legacy TDM-based equipment. Topics addressed include: deployment scenarios; lowering the total cost of ownership; ease of use; protocol support; and the benefits of a hybrid gateway.

[www.tmcnet.com/2072.1](http://www.tmcnet.com/2072.1)



## This Month's Featured Channels

### Bandwidth Management



<http://www.tmcnet.com/channels/bandwidth-management/>

### Selecting VoIP Solutions



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### Wholesale VoIP



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## **Business VoIP | Community**

The new Allworx sponsored Business VoIP Global Online Community is where you'll find everything you need to know about the trends driving VoIP for the small and medium business market. The site features the latest business VoIP news as well as feature articles delivering insight from TMCnet's editorial team as well as many of the leading voices in the industry.

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By: Brough Turner



## Delivering Mobile Video Services

Mobile video is perhaps the biggest opportunity of the next decade but it's also the least standardized and therefore difficult to do well.

Video over dedicated networks is well established. Cable companies have been at it for years and now phone companies are in the game. Both require substantial capital, but technologies are readily available and well understood.

Video over the Internet is more recent, but also well understood with dozens and dozens of Internet video services (like [YouTube](#)) in existence.

Meanwhile mobile video remains a fledgling market. The problem is extreme diversity among mobile devices. Video-enabled handsets vary in resolution, supported video coders, programming environments, browser capabilities and the extent to which it's even possible to access 3rd party applications or content. In addition, bandwidth varies depending upon location and time of day. So the Internet approach, of adapting user content once when it's ingested and then relying on standard web browsers, won't work. Adaptation is required each time a video is played.

Despite these difficulties, mobile video promises to be enormous. Everyone carries a mobile phone and, just as camera phones became ubiquitous, the baseline mobile handset will gain powerful video capabilities — video recording as well as viewing. Expect a portable webcam in everyone's pocket. What's more, competition among four to five 3G networks (in the U.S. by 2010) will lead to affordable mobile Internet access and an explosion in new applications as Internet players scramble to interact with mobile individuals. How will Internet developers deal with diverse mobile devices and varying bandwidth? Several companies are lining up to fill the gap.

RipCode and Avot Media are each offering video content adaptors as appliances while [Nellymoser](#) offers a mobile services platform that includes video content adaption. Media Excel comes at the problem from a focus on mobile TV but they too have noticed the advent of user generated video.

It's still early. Only 4 percent of U.S. users subscribe to video services. High speed access can be spotty. Operators are just beginning to open up. But the landscape is changing rapidly. The next 24 months will be exciting! **IT**

*Brough Turner is Chief Strategy Officer of [Dialogic](#) ([www.dialogic.com](http://www.dialogic.com)).*

## Inside Networking

By: Tony Rybczynski



## Hyperconnectivity Drives Network Transformation

Hyperconnectivity is a megatrend whereby everyone and everything that can benefit from being connected will be connected. This takes the form of hyperconnected users, and of an explosion in network-connected devices —

for example, in the realms of energy and property management, asset and location tracking, telemetry and enhanced security systems.

So what are the enterprise networking implications of hyperconnectivity?

With hyperconnectivity, the diversity of traffic on enterprise networks expands significantly and includes latency- and bandwidth-intensive multimedia applications, associated with person-to-person, person-to-machine and machine-to-machine communications. Bandwidth of course needs to be engineered to meet capacity requirements of a broad range of applications. Individual sensors generally represent a low volume traffic source, but at peak times may generate a high volume of time-sensitive traffic. For example, imagine a building Heating, Ventilation and Air Conditioning system with tens of thousands of IP addressable points being restarted after a failure!

Time-sensitive applications must operate within an end-to-end delay window (150 msec for human communications, but potentially

much less for telemetry). Delivering low latency and low loss across the bandwidth-rich LAN environment is relatively straightforward. Achieving real-time performance across the WAN mandates the elimination of speed bumps, by leveraging technologies such as carrier-grade Ethernet. With hyperconnectivity, network reliability becomes even more important than today. Investments that put in stand-by capacity just-in-case it's needed, are wasteful. Also, recovery times must be accelerated so that real-time applications continue to operate under failure conditions. Scaling the network by a factor of 10 to 100 cannot be met by simply scaling the existing wired network. Increasingly WLANs will become the preferred access technology. The emerging 802.11n WLAN standard is a key enabler of the unwired enterprise. Finally, hyperconnectivity demands simplification and improved price/performance on a grand scale, transforming the network into a business optimized infrastructure. Even today, considering alternate data suppliers can result in up to a 50 percent reduction in Total Cost of Ownership, including a 40 percent reduction in energy consumption, while delivering 7x the resilience and 20x the performance.

Hyperconnectivity will drive as big a network transformation, as the transformation from departmental LANs to enterprise IP networking. **IT**

*Tony Rybczynski is Director of Strategic Enterprise Technologies at Nortel ([www.nortel.com](http://www.nortel.com)).*





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By: William B. Wilhelm, Jr., Esq. and  
Jeffrey R. Strenkowski, Esq.



## FCC's Inter-carrier Compensation Proceeding Could Affect Regulation of VoIP

On November 5, 2008, the FCC released an Order and

Notice of Proposed Rulemaking that, among other things, requested comment on three alternative proposals for reform of the Universal Service Fund and the Commission's inter-carrier compensation rules, including access charges. While primarily aimed at unifying the inter-carrier compensation and universal service systems, the proposals contain proposed language that, if adopted, will classify all services that involve transmission of calls between IP and PSTN networks as an "information service" under the Communications Act on the basis that such traffic involves a "net protocol conversion." The Commission further proposed, consistent with the *Vonage Order*, to preempt any state imposition of traditional "telephone company" regulations on IP/PSTN services. But, the proposal also provides in a footnote that states are "free to require contributions to state universal service or telecommunications relay service funds through methodologies that are consistent with federal policy," which implies that states may require VoIP providers to contribute to state universal service and telecommunications relay programs so long as they do not conflict with federal policies. This distinction is also consistent with the positions that the FCC General Counsel

has taken in recent litigation concerning the application of state universal service contribution requirements on VoIP providers.

Some VoIP providers have opposed this proposal because it lacks any discussion on how to determine consistency with federal law, as well as the logistical problem of implementing potentially conflicting state regulations. Of course, it remains unclear when, and if, the Commission will ultimately adopt rules to reform the inter-carrier compensation and universal service systems, and if the proposed VoIP-specific language will be included in any forthcoming decision. However, VoIP providers should realize that the Commission has, at least internally, started to differentiate between state universal service requirements and other "traditional telephone company" regulations with respect to VoIP services.

*William B. Wilhelm is a partner and Jeffrey R. Strenkowski is an associate at the global law firm of Bingham McCutchen LLP. For more information, please visit them online at [www.bingham.com](http://www.bingham.com). The preceding represents the views of the authors only and does not necessarily represent the views of Bingham McCutchen LLP or its clients. Bingham McCutchen represented the Petitioners in the case described above.*



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By: David Yedwab



## Best of Breed or Best of Suite for Unified Communications?

Now that we understand what Unified Communications is — “Communications Integrated to Optimize Business Processes” — according to my colleagues at UCStrategies.com — and most of the vendors have

launched their initial (and some second and third ) offers, users are beginning to think about how they might choose to deploy these solutions. And that brings us back to the future — to the dilemma facing IT departments almost since the beginning — Should one deploy the “Best of Breed” or the “Best of Suite”?

As IT matured, became both more valuable and more complicated, users and vendors applied two distinct selection and deployment strategies: 1) Always deploy clearly the best application for the individual task — the application that is “Best of Breed” — the best billing, or ERP or CRM, or 2) Always deploy the application that fit into the overall software platform architecture that had been chosen — the “Best of Suite”.

So, how does “Best of” play in UC vendor selections? There are several ... I’ll touch on but a few here, more to follow in future columns.

First, UC is comprised of several capabilities — Call Control, Messaging (multi-modal), Conferencing (voice, web, video), Mobility, Contact Center (multi-modal), CEBP (Communications Enabled Business Processes) — all empowered via Presence. While several

vendors offer “complete” UC solution suites, it is unlikely that an objective evaluation would select any one vendor as offering the “Best of Breed” solution for each of the individual UC elements. So, how should an Enterprise make selection decisions? Second, most Enterprises have already chosen and deployed several of these apps, perhaps on a standalone basis — likely over several distinct purchases over several different procurement/ depreciation cycles and across different IT-responsibilities. And the overall enterprise likely acquired these individual solutions from multiple vendors across multiple divisions (or acquisitions). Now, the enterprise may be thinking about how to implement an Enterprise-wide UC Strategy. Given the diversity of the embedded base, a “Best of Suite” solution from a single vendor is not likely to be easily accomplished.

So, as an initial step, it seems that interoperability of the existing standalone applications needs to become a requirement that Enterprise IT organizations should be driving their existing vendors and Systems Integrators to elevate to a priority. Without such interoperability, building a roadmap of either a “Best of Breed” or a “Best of Suite” will be very difficult, if not impossible. And deploying against the roadmap is likely at least an order of magnitude even more difficult. **IT**

*David Yedwab is a Founding Partner in Market Strategy and Analytics Partners LLC. Contact him at 908-879-2835 or david.yedwab@mktstrategy-analytics.*

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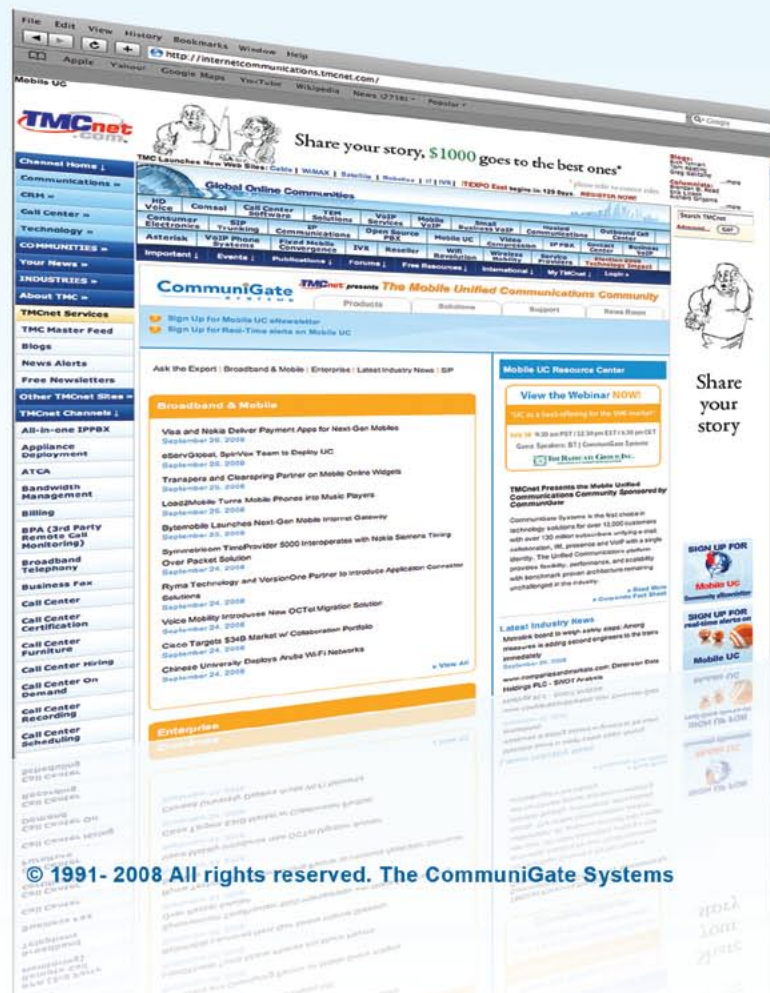
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By: Jeff Hudgins



## Managing IT-Related Costs in a Downturn – Part 2

In last month's issue we explored cloud computing and virtualization and the roles they each play in reducing expenses as the slower economy hits Service Providers and Enterprises. This month we will turn our attention towards the Enterprise. Both small and large enterprises can reduce their IT related expenses significantly in 2009 while at the same time improving performance and overall customer satisfaction.

AudioCodes, a leader in the IP communications space, has several initiatives in the enterprise space that offer great cost cutting possibilities. Companies that strategically implement their Mediant Series can improve their return on investment for IT expenses. Alan Percy, Director of Marketing at AudioCodes, presented six key ideas that can dramatically reduce IT expenses in the enterprise. 1) SIP Trunking, 2) Software Migration Solution, 3) Open Source, 4) Fax aggregation using VoIP, 5) Software as a Service (SaaS), 6) Enterprise networking (branch office connectivity).

While SIP trunking is not new, many enterprises are still hanging on to their old TDM PBX and T1 interfaces. The AudioCodes Mediant 1000 gateway can be implemented with an existing TDM PBX and allow the enterprise to immediately discontinue paying for the T1 lines, while not incurring the

capital expense of replacing the trusty old PBX. Fax machines are still a very real fixture in the enterprise and continue to drive unnecessary costs such as toner, paper, and maintenance. Throw in any inter-office long distance expense and you have a real cost savings opportunity. Companies can implement a Mediant 1000 as a VoIP gateway to aggregate faxes and eliminate most of the costs incurred by these traditional fax machines. Another application for the AudioCodes Mediant Series is in a hosted services implementation. Here an ISV can adapt their software using a Mediant 3000 and offer a hosted call center service. The enterprise can rent the application and avoid expensive capital investments. This also creates a "pay-as-you-grow" scenario using a per seat basis pricing model.

To listen to an on-demand webinar on this topic, visit: [www.tmcnet.com/webinar/audiocodes10](http://www.tmcnet.com/webinar/audiocodes10)

**Final Score.** While we don't really know how long the recession will last in 2009 and beyond, the AudioCodes Mediant Series can offer real cost savings that will improve any enterprise's bottom-line in 2009. **IT**

*Jeff Hudgins is VP of Product Management at NEI, Inc. ([www.NEI.com](http://www.NEI.com)).*

## Ask the SIP Trunk Expert

By: Steven Johnson



## How SIP Trunks Cut Costs: Case Studies

Technologies that can lower costs are in high demand these days. SIP trunking is one of those technologies that has proven — time and again — to slash communications costs by 40 percent (and even more). SIP trunking installations usually pay for themselves in six months to a year, even though many deployments require the purchase of a new IP-PBX, phones, network upgrades and a solution like Ingate's.

Case studies from real installations confirm these rapid ROI numbers. For instance, a network of medical practices switched their entire PSTN system to VoIP using SIP trunks. SIP trunking is scalable, which accommodated their continued rollout of new branch offices, supporting company expansion. In about a year they've moved entirely off of the PSTN, cutting communications costs nearly in half.

What about security? We recently worked with a bank that deployed SIP trunks at one of their local offices and their main operations center in Wall Street. The SIP trunk/edge device solution offered the highest security for VoIP and was used to protect the IP-PBXs and connect to a SIP trunking service provider. The result was a reduction in telephony costs by 66 percent, or \$1,000/month.

In addition, using SIP trunks eliminated the need to purchase local PSTN gateways and costly ISDN BRI's (Basic Rate Interfaces). The company still uses PRI (Primary Rate Interface)-rate ISDN for incoming calls, 911 and toll-free calling but the expense is modest since all outgoing calls that are billable are sent to the SIP trunking service provider.

With such a quick reduction in communications expenses, the bank expected to pay for the entire SIP trunking installation in less than six months.

A Swedish systems integrator who wanted to use their Internet connection more efficiently to streamline costs also benefitted from using SIP trunks to jump off of the PSTN. Previously they had needed to purchase PRI's and PSTN gateways for every branch office. With SIP trunks, not only did they eliminate PSTN-based charges, they also no longer needed to pay the \$17,000 yearly subscription cost for the PRI's.

These are just a few examples of the how SIP trunks can really improve your bottom line. In today's economy, these technologies can help any business stay ahead. **IT**

*Steven Johnson is President of Ingate® Systems ([www.ingate.com](http://www.ingate.com)).*





## Introducing the **Asterisk Global Online Community**

Open Source Telephony is taking the world by storm.

The Asterisk Global Online Community — sponsored by Digium and powered by TMCnet — is designed to serve as the information hub for the exciting world of Open Source Telephony based on Asterisk.

This online community features the latest information concerning Asterisk and Open Source Telephony and how it applies to enterprise communications.

The community showcases daily content updates highlighting:

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Participants in this community will be better prepared to make the proper decisions when it comes to selecting enterprise communications solutions based on Asterisk.

**<http://asterisk.tmcnet.com>**





By: Hunter Newby



## Working Out the KINX of VoIP Peering

If there is one thing that can really help VoIP networks to securely interconnect it is an Internet Exchange, or IX. These are typically Layer 2 Ethernet switches that facilitate local and even in some cases distributed direct peering

between multiple parties. The benefits are QoS, predictability in scale and reliability as well as inherent security. Established IX's tend to attract any new IP networks seeking peering as the density of critical mass has an irresistible gravitational pull. The KINX is just such an IX, located in Dogok-dong Gangnam-gu Seoul, Korea the so-called "Mecca of Korean IT and telecom". The KINX lists some of the biggest names in Asian IP including KT Networks, SK, REACH and Reliance. Being a natural meeting place for IP networks bodes well for the inclusion of VoIP networks and because of this fit, an interesting relationship has formed. XConnect recently announced it has entered in to an exclusive agreement with the KINX to launch a Korean peering federation for IP communications.

This announcement adds to the list of international federation initiatives that XConnect has begun. Clearly VoIP peering has taken hold in the minds of many around the world and is now a serious strategic consideration. As Camille Mendler, VP at Yankee Group stated from the original release: "Multi-lateral peering reduces risk

and complexity in a chaotic market. Service providers worldwide urgently need new interconnect solutions to handle the aggressive growth of VoIP and multimedia traffic." Reducing risk and complexity is high on the list of things to do by many in the world today including those in the financial markets. The hard lessons being learned by the lack of planning and oversight will hopefully reach over in to other aspects of business administration in general and be a catalyst to convert those that either do not yet use VoIP, or do so, but not to the fullest extent possible. Utilizing VoIP peering services from organizations such as XConnect are taking a big step in the right direction towards maximum utilization.

For VoIP peering to have reached a level where the Yankee Group acknowledges it is quite an accomplishment in and of itself, but the real victory is in seeing the service adopted by users worldwide. It is good to see that the things that are still growing strong get noticed and that deals are still happening in this space. Hopefully the kinks can be worked out of the international banking system so that the rest of the world can experience aggressive growth again too. **IT**

*Hunter Newby is the Chief Strategy Officer and a Director of a Special Purpose Acquisition Corporation focused on the communications industry. Reach him at [hunter@hunternewby.com](mailto:hunter@hunternewby.com) or visit [www.hunternewby.com](http://www.hunternewby.com).*

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## Introducing the VoIP Phone Systems Global Online Community

Voice over IP is transforming the business communications space with immediate benefits, including cost savings, added features, greater functionality, remote access, and more. Finding the right VoIP phone system for your business can be a challenge, which is why FreedomIQ brings you the VoIP Phone Systems community on TMCnet.

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By: Rich Tehrani & Max Schroeder

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## Continuity Planning 101 — A Continuing Educational Series Disaster Recovery — Don't Forget the Human Factor

Today's technology including VoIP, FoIP, Unified Com-

munications, SaaS and other hosted services allow for a fully mobile workforce. Home offices are also a fundamental component of a modern Continuity / Disaster Recovery (BC/DR) plan and the logic of disbursing employees is obvious. What is not obvious is just how big the disbursement area should encompass and if these employees are prepared to handle an emergency in their home area.

Hurricane Katrina hit many companies very hard and employees also suffered but Katrina was an extreme example. Interruptions caused by power outages are more typical and can occur anywhere. Most affect small areas but some like The Great Northeast Blackout of November 9, 1965, left around 25 million people without electricity but for most people this was a short-term event.

Unlike SaaS and UC, a company's most valuable resource, people, cannot be rerouted over the Internet or the PSTN. Giving em-

ployees a laptop, hosted VoIP services, data access and other tools, is only part of the solution. Since people require a place to live and work, a BC/DR plan for each employee is critical. A personal experience for one of this column's authors, Max Schroeder, is a good example. In October of 2008 a freak snowstorm interrupted power for thousands in Max's home area. Fortunately for Max and his wife, he simply relocated to a hotel on his plan's short list and was operational several hours after the power outage began.

Personal BC/DR plans tend to get overlooked all too often when developing a company-wide plan. Without power and heat, Internet access all of the other 21st century technologies are compromised. Maybe its time to review how your current plan and determine if your key staff members have a personal BC/DR plan in place. **IT**

*Max Schroeder is the Senior Vice President of [FaxCore, Inc.](http://www.faxcore.com) ([www.faxcore.com](http://www.faxcore.com)) and Managing Director of the DPCF.*

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

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**Nitty Gritty**

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By: Richard "Zippy" Grigonis

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## Elma's E-Frame Open Access Chassis for 3U Backplanes

Back in April 2008 we reported on the E-Frame chassis developed by Elma Electronic ([www.elma.com](http://www.elma.com)) of Fremont, California. It's an open frame chassis for test/debugging purposes.

Elma has now announced a new 3U version of its E-frame chassis line. Previously available in heights for 6U (10.5-inch) high backplanes, it now accommodates 3U (5.75-inch) heights. There are no side or back walls around the card cage area, providing easy access for test and development. The E-frame was designed for the high power and cooling requirements of VPX (VITA 46/48) systems. However, any backplane architectures in a 3U height can be used, including VME and CompactPCI.



The total height of the portable, aluminum, black-coated power finish E-frame is approximately 9U (15.75 inches), with a carrying handle on top. The E-frame tower supports up to 21 slots at .8-inch or 17 slots at 1-inch pitch. There are front accessible test points and monitoring LEDs for +3.3V, +/-5V, +/- 12V, +/- 24V, and +/- 48VDC. The E-frame features high performance cooling with 3 x 150 CFM fans under the card cage. The fans are speed controlled with fan fail indication. A system monitor with remote monitoring via Ethernet capability is optional. It also has a Rear A/C PEM (Power Entry Module) with fuses, GND Stud, Front located ESD jacks. The unit also offers full RTM (Rear Transition Module) support. **IT**

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



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By: Anne Keefer



## What Are Contact Centers Saying about Unified Communications?

Over the course of the last few months, I spoke with more than 20 call center managers and asked, "What unified communications (UC) scenarios can you envision for your contact center in the future?" We defined UC as those tools that increase personal productivity and integrate communications into business processes.

The responses included video conferencing, unifying branch and campus agents, unified messaging and click-to-call and click-to-chat. There were common threads between different industries: unified messaging, web self service tools and presence. Finally, nearly all see Instant Messaging (IM) and chat as the most influential UC tools for improving their business processes.

Financial Service companies want to use IM and chat to give agents and field representatives access to back office experts and Underwriters. Others see IM as a way to connect customer facing employees — like sales other field staff — with back office knowledge workers. Most are excited about using UC to reduce response times and enable more efficient knowledge transfer internally and to customers. Of the barriers to UC implementation, one hurdle can be the cost of licenses. Another is lack of common tools across multiple locations; for example, home agents may use a different IM service — Microsoft, Google, Yahoo, etc. Storage and data management become an issue in industries that require storing every single written communication between internal employees and/or between employee representatives and customers. Another challenge we see is lack of an enterprise UC strategy to drive the use of UC for customer facing communications in the contact center.

The good news is that the concepts of UC are not unknown or speculative, but are being openly discussed by contact center managers as concrete solutions to real problems they are having today. In our consulting work, we see the use of UC tools growing — often informally, as users themselves realize the power of IM to reach SMEs or respond to a customer faster. This kind of grassroots

evolution means that contact centers will deal with UC sooner rather than later. **IT**

*Anne Keefer is a Consultant at Vanguard Communications Corporation ([www.vanguard.net](http://www.vanguard.net)), a consulting firm that specializes in contact center processes, operations and technology. She is a strong supporter of call center leaders and managers. Contact Anne at [akeefer@vanguard.net](mailto:akeefer@vanguard.net).*

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## Did you know...

The Dell'Oro Group's "Enterprise Telephony Quarterly Report" reveals that the Unified Communications (UC) market surpassed \$3 billion during the third quarter of 2008, driven in large part by the market's top two vendors – Avaya and Cisco. The report indicates that UC is driving the enterprise voice market from its hardware base, such as PBXs, to software.



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By: Don Witt



## Resellers Can Win in a Commodity Market!

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When end users are looking for VoIP phones, they will go to the local electronics retail store and check out the latest models. They will select a couple that they like and then go home and Google the selected product for the best price. Many will just Google the technology and find the best products and the lowest prices. How does a reseller win in this commodity market?

You have tried it yourself. You have looked at the different web-stores and check them for prices on phones, controllers, analog telephone adapters, and other VoIP/SIP equipment. You know the websites to go to and you know the ones not to go to.

**Resellers that rely on price generally do not have anything else to offer. They may be small, do not have qualified personnel, enough staff, or do not sell quality product.**

### Price is Not the Only Differentiator

In a commodity market, price is not the differentiator. There are many other differentiators that are simple to implement and others that take a great deal of effort.

Take the web-store website for example; one of the first things I look for is the Contact address and phone number. Many websites like to think that not having their phone number or address gives them more of a national image. I view it as a reseller that is trying to hide from the customers trying to return products. I do not buy from them. I also like to buy out of state to save on taxes. If you want more customers, I suggest using a real address and phone number.

### Speaking of Phone Numbers

Remember, it is all about the experience. When the customer calls, they should be greeted with a live person or an easy to use ACD. Once they get to the correct department, the

contact person should be able to understand the customer and clearly address the customer's concerns or problems.

### Knowledgeable Sales Personnel

When I find a new product I like, the webpage description does not always have the best information. I like to contact the website and talk to a sales person. I am not looking for someone that only knows how to ask, "how many and when." I want to talk to someone that knows the product and has used it. It is incredibly important to me in the process to have access to a human. If there is no access, I will not buy there.

### Knowledgeable Support Personnel

This is probably one of the most important to me and many others. If I buy a product from a web-store, I want to know that I can contact someone if needed. Since I am rather technical, support is not needed most of the time. But when support is needed and they get me the answer I need quickly, *they have put themselves on my short list of preferred suppliers.*

### Simple ordering process

The ordering process should be simple and painless. On too many occasions, I have tried to buy a product and cancelled the order because the process was too complicated, too regimented, or had too many options. Cross selling is a great tool, but it should not be over bearing to the customer. Free shipping always catches my eye!

### Warranty Support

It is always nice to shop at a store that will take the product back if the product does not work. The process should be easy for the customer and offered to the customer when the customer has a problem.

### Too Much Emphasis on Price

Resellers that rely on price generally do not have anything else to offer. They may be small, do not have qualified personnel, enough staff, or do not sell quality product. It is not just price, it is the character of the company that comes through with each experience the customer has with the reselling organization. How would you rate your company? Given the same price as another supplier, would you win? Who would you choose if you were buying something and the prices were the same? **IT**

*Don Witt is President of [cyLogistics](http://www.cylogistics.com) ([www.cylogistics.com](http://www.cylogistics.com)).*

[www.tmcnet.com/2697.1](http://www.tmcnet.com/2697.1)

### Broadvox to Offer SIP Trunking through TBI

Touting an increasingly popular technology that's saving money for SMBs at a critical time, a **Broadvox** announced that it is joining Chicago-based Telecom Brokerage, Inc., a telecom master agent, to help promote its SIP trunking solutions.

Officials at Broadvox say the deal will help bring reliable, scalable and interoperable SIP trunking to businesses by offering unlimited local calling and lower long-distance rates through new or existing IP-PBXs.

According to Broadvox, SMBs realize an almost immediate return-on-investment by reducing their cost per minute for communications through SIP Trunking, saving as much as 70 percent compared to traditional TDMs. One differentiator for the company is its "Network Operations Center," which is staffed around-the-clock to support a robust, private network that covers the 48 contiguous United States and Canada.

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[www.tmcnet.com/2698.1](http://www.tmcnet.com/2698.1)

### Tech Data U.S., Vizioncore Team on to Support Value-Added Resellers

The Advanced Infrastructure Solutions (AIS) Division of Tech Data Corporation has partnered with Vizioncore, a company specializing in server virtualization management with an intention to aid value-added resellers (VARs) with Vizioncore's software solutions that enable organizations to better manage and administer virtual and physical servers.

Tech Data will distribute a broad range of Vizioncore software products such as backup and restoration solution called "vRanger Pro" for virtualized environments that will help administrators to schedule image-level backups for virtual and physical servers while systems are still running.

"Vizioncore is the standard for backup and restoration, disaster recovery, replication, high availability and performance monitoring for virtualized environments," said Chris Akerberg, president and chief operating officer of Vizioncore.

[www.techdata.com](http://www.techdata.com)  
[www.vizioncore.com](http://www.vizioncore.com)

[www.tmcnet.com/2699.1](http://www.tmcnet.com/2699.1)

### Ensim Adds Three Channel Partners to Serve Europe and Asia

**Ensim** Corporation, a provider of change management, user provisioning and access control software, has expanded its reseller network in Europe and Asia by adding three new channel partners.

The new partners, who will help better serve the needs of corporations in a variety of vertical markets, include Qast Singapore Pte Ltd (Singapore), LEX Computer Systems (Greece) and Antares NetlogiX (Austria).

Officials from Ensim said that an expanded network would help their group to extend its reach into international markets, and would offer customers more options for deploying Ensim Unify Enterprise Edition to decrease their IT operating costs and improve employee productivity. As part of the agreement, each of Ensim's new reseller partners will provide comprehensive sales, marketing and technical support for the complete suite of Ensim Unify Enterprise Service Managers, including Active Directory Manager.

[www.ensim.com](http://www.ensim.com)

[www.tmcnet.com/2700.1](http://www.tmcnet.com/2700.1)

### Motorola Intros Mobile Commerce Solution

**Motorola** has launched a comprehensive mobile commerce solution for financial and retail merchandising needs. The solution consists of an M-Wallet and back-end management platform. The company also revealed that Union Mobile Pay (UMPay), a mobile payment company founded by China Mobile Communications Corporation (CMCC) and China UnionPay, has deployed this solution.

Motorola's M-Wallet solution provides a user interface with reliable service enabling users to customize financial needs such as account inquiries, money transfers, bill payments, utility payments and e-ticketing on their mobile phones. Officials said that this personalization will eliminate the need to go to banks or carry bank cards. Additionally, the platform also provides business-to-consumer (B2C) solutions for merchants, including merchant membership cards, electronic couponing and prepaid cards.

[www.motorola.com](http://www.motorola.com)

[www.tmcnet.com/2701.1](http://www.tmcnet.com/2701.1)

### Crossbeam Extends its Distribution Agreement with Westcon

Boxborough, Mass. based **Crossbeam** Systems said that it has extended its distribution partnership with Westcon into the Brazilian market. Westcon is a distributor specializing in networking, convergence, security and mobility. Recently, the company expanded its infrastructure to include additional sales, product management, finance and operational capabilities. Westcon Brazil is a provider of comprehensive network security solution programs.

The terms of the agreement calls for Westcon Brazil to offer "Crossbeam's X-Series Next Generation Security Platform" to its base of resellers, systems integrators and service providers.

This latest partnership follows on the heels of Crossbeam's recently announced expansion into the Latin American market with new operations in Sao Paulo, Brazil. Crossbeam is a provider of next generation security platforms, scalable software and hardware platforms that facilitates the consolidation, virtualization and simplification of security services delivery.

[www.westcongroup.com](http://www.westcongroup.com)  
[www.crossbeam.com](http://www.crossbeam.com)

[www.tmcnet.com/2702.1](http://www.tmcnet.com/2702.1)

### 8x8 Announces New Sales Managers and Opening of East Coast Sales Office

**8x8**, Inc., the provider of 8x8 Virtual Office and Packet8 broadband business, residential, video and mobile communications services, has announced the appointment of two new regional sales managers along with the opening of a New York-based east coast sales office.

John Hilliard, will be the Northeast Regional Channel Manager and has extensive telecom experience. Prior to 8x8 he has worked with Nortel, MCK Communications, Bandtel, New Edge Networks and Whaleback Systems in various channel sales positions. Robert Bashore is now the Southeast Regional Channel Manager and has over 13 years of telecom channel sales and major accounts experience with companies like **Mitel**, Inc., Inter-Tel and A-Telecom, Inc.

8x8 will also open a New York sales office for the company's direct sales organization on the east coast.

[www.8x8.com](http://www.8x8.com)

## Talking with Rick Boone, President, NETXUSA

By: Richard “Zippy” Grigonis

It was Rick Boone’s father, Tom Boone, who founded [NETXUSA](http://www.netxusa.com) ([www.netxusa.com](http://www.netxusa.com)) back in the early 1980s. He’s still the majority shareholder and CEO of this family-owned business, which has a distribution channel of more than 5,000 Independent resellers throughout the U.S. and foreign countries that provide local end-user installation and support services. Rick Boone’s background is as a corporate banker. Since coming to NETXUSA 11 years ago, he’s served as Controller, CFO and now President. Today he works closely with manufacturing partners to continue developing relationships, takes an active role in large customer account management and works with sales staff on both U.S. coasts.

With its two distribution and sales centers situated in the U.S., NETXUSA’s East and West coast facilities provide rapid regional response and economical product delivery to the dealer channel. NETXUSA provides cost-effective provisioning VoIP branding services for a wide array of hardware direct from leading VoIP manufacturers. NETXUSA backs all of its products with advanced replacement warranties and support services. The company’s in-house certified engineers and experienced customer service staff are adept at a servicing dealer following a sale.

Our own Richard “Zippy” Grigonis recently caught up with Rick Boone and discussed NETXUSA’s involvement with IP communications.

**RG:** Are most companies IP-enabling their existing phone systems, or do you see more “forklift upgrades” to totally new systems?

**RB:** We are seeing more of our VARs selling the forklift upgrades. Most small business customers seem to have had their existing communications systems since the late 1980s to early

1990s or before. They replaced hardware as needed, but over the last 25 years not much changed in telephone technology and until about 2005 there were not very many compelling reasons to consider changing communications systems, but around 2005 VoIP started becoming accepted and its quality was equal to the companies’ existing T-1/PRI scenario. At the same time, other forms of media were going through similar conversion. TV was leaving analog and going digital. Cable companies and the like started adding voice services to their product offering and residential users started tasting VoIP from home to save on long distance charges. HD video and digital audio have become expected in our daily lives, so introducing new products like HD voice over your phone is a natural transition for office communications. When you consider the cost savings and additional features that VoIP provides, such as integration into the customers network, unified communications and true business applications being pushed to the users desktop, the small business now has some real, compelling reasons to consider making a change in their communications. Once people do the research and trust that VoIP is solid, they can increase productivity while cutting cost. As it continues to be a growing part of the convergence of our overall communications, it becomes a bit easier for the VAR to sell a solution, regardless of whether the new IP PBX is hosted or premised-based.

**RG:** NETXUSA has in-house engineers and customer service staff to service the dealer after the sale. Do IP-based systems demand more “hand-holding” than traditional circuit-switched systems?

**RB:** They most certainly do. Traditional analog systems are straight forward in nature. It’s hardware. It has been traditionally proprietary without many unknown variables or configura-



tions. The challenge with IP-based systems is that now we are dealing inside the customer network and all networks are not created equal. We do a lot of pre- and post-sale work with our VARs to make sure the network is suitable for the application they are about to install over it. If the infrastructure is not correct on the front end, the end user will not have a good experience. Most of time when a user trashes an IP-based system it is not the hardware or the service provider that is to blame, but the infrastructure within their own LAN. Therefore, proper education is the biggest challenge we face with IP-based systems. Still, NETXUSA is doing a good job educating and properly supporting our dealer base to make sure every IP-based install goes well from the beginning.

**RG:** Have you seen any favorite products and services that really resonate with the public?

**RB:** Wireless. We are seeing a significant up-tick in wireless opportunities and wireless sales. The cost of quality wireless routing devices is so low now that it is cost-effective to add wireless devices in just about every office. Most small businesses have at least one or two people that are mobile throughout their business.



The challenge is training the VAR community to dig into their base and realize those wireless opportunities that are not new and to provide add-on sales. In today's economy, finding resourceful ways to increase customer productivity is paramount and wireless devices can do that. In the past, the problem has been that the cost of the wireless infrastructure has been too expensive to get quality communications, but we have wireless infrastructure products that fit the budget of every business without sacrificing the quality of service you demand in your communications.

**RG:** NETXUSA offers complete hosted provisioning and branding services for various products. Is this a growing trend or do only companies of a certain size adopt this strategy?

**RB:** Provisioning and branding services opportunities are not size-dependent. These type of professional services are good for everyone. Provisioning services help providers and resellers scale their business without having to concern themselves with inventory-related issues that cost both time and capital investment. Provisioning services also prove useful as a remote installation tool and in many cases will allow the hosted PBX provider to sale a solution and provide products and services without requiring a truck roll which can save both time and money in some applications. Provisioning services allow the provider and customer to know there will be no DOAs because you have to power up each device to get the files loaded and NETXUSA can spot check phones with the providers' service to make sure we get dial tone before the devices leave the warehouse. Branding is just a good idea. The more anyone can create brand awareness the better. Our branding service also gives the VAR or provider the option to have startup guides, product slicks or marketing and promo items stuffed into each box before shipping.

**RG:** How big is your open source business? Is the current economic downturn encouraging more people to use open source products?

**RB:** Open source counts for about 35 percent of our business. I have not really seen open source sales increase due to current economic circumstances. What I have seen is the awareness and use of systems based on open source increase dramatically. The best indicator for me is a record number of downloads of Asterisk open source in 2008. Asterisk is the worlds leading open source application out there right now and in my opinion is a very big part of why VoIP in general as taken off. End users today do not appear to be buying Cisco, Avaya, Nortel, etc., just because they are those "name" brands. They are taking a look at open-source based PBXs and other PBXs that can give them all of the same features and functionality at a fraction of the cost, so the current economic environment is a great time to introduce alternatives and

we continue to see significant business growth because people are looking at alternatives that in good economic times they might not otherwise.

**RG:** How do you see the future of the IP communications channel? Will new applications yield greater margins for distributors and resellers?

**RB:** I see the channel getting stronger over time. Our manufacturing partners are committed to the channel and its' development and VoIP is still in its' infancy stage so we have only seen a very small glimpse of what is capable over a VoIP network. Right now we are still in the adoption stages and VoIP is rapidly becoming the norm in lieu of being a new technology. New applications and convergence will drive the future of the VoIP market and as we see these new applications being pushed to the desktop and beyond there will be additional margins and up sale opportunities for everyone involved.

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**"End users today do not appear to be buying Cisco, Avaya, Nortel, etc., just because they are those 'name' brands. They are taking a look at open-source based PBXs and other PBXs that can give them all of the same features and functionality at a fraction of the cost..."**

**RG:** Sounds like you'll be busy.

**RB:** NETXUSA has experienced tremendous growth over the last 5 years and I am very hands-on in the day-to-day operations and development of the organization. My other duties involve working with Eric Todd, our CTO, in developing the internal systems that help make NETXUSA a recognized leader in value added distribution. But I cannot take all the credit for what has gone on here. The tremendous company growth NETXUSA has experienced in the past and continues to experience today is a blessing and a testament to having a good working environment and great people pulling together for a common goal. We're a family-owned business with a family-friendly working environment. You could very easily have conducted an interview similar to this one with 30 other capable people in this organization. **IT**

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

By: Peter Radizeski



## Telecom Tidbits

There have been quite a few tidbits in telecom this month. Most notably the layoffs, especially the 12,000 that AT&T let go. But **PAETEC** and Level3 also had layoffs of 222 and 450 respectively. Some of the cuts came from the Indirect channel.

**Qwest** decreased the compensation to its channel program by about 10 percent, which one master agent said was "bad, but it could have been a lot worse." The big kicker is the provision that agents can no longer get paid for renewing contracts, unless they were the original agent. That destroys some call center-based agents, who will now be looking to flip that database to other carriers. Meanwhile, SkyWi sues Qwest for racketeering.

The Technology Channel Association, a non-profit trade association for indirect sales agents, has hired CMA Association Management to run the day-to-day functions of the association. This announcement coincides with the launch of the Agent Committee, consisting of Emmett Tydings of AB&T Telecom; Dave Wallace of Aligned Communications; Ben Henkels of CMP; Mark Adams of Total Business Solutions Communication; and Jeff Ott of Total Carrier Solutions. TCA is working on benefits for its members possibly health insurance. Join today at [tcasite.org](http://tcasite.org).

Is broadband quality hindering the adoption of VOIP for small businesses? Viatel, a UK VoIP specialist, surveyed 200 small businesses to find that best effort broadband often resulted in poor call quality. Agents might want to suggest either DSL bonding or pairing redundant broadband through a dual WAN router.

Is the first thing out of prospect's mouth, "Save me money?" It probably is, which is why auditing is making a come back. TEM and auditing should help you find business.

Are your deals feeling the heat of the credit crunch? Let me know – email me at [rad\\_info2003@yahoo.com](mailto:rad_info2003@yahoo.com).

**Aastra** is in Tampa this week for an executive meeting as they roll out a new line of 9000 series phones.

Finally, I was a panelist on Geekazine on Ustream.tv at 7 PM Eastern on 12/15/08 to discuss tech news like Google and Net Neutrality, the new Palm OS, and blunders in IT asset security. **IT**

*Peter Radizeski is head of RAD-INFO, Inc., a consulting agency specializing in the telecom industry.*



# WEBINARS

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## SIP Trunking Global Online Community

<http://sip-trunking.tmcnet.com>

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SIP Trunk Network



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SIP Trunking blog and feature editorial



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By: Gary Kim



[www.tmcnet.com/2664.1](http://www.tmcnet.com/2664.1)

## Cloud Computing Is Not Hype

Cloud computing is not just hype, say researchers at London-based IT research firm **Ovum**.

And it is possible the current recession will provide CIOs new reasons to embrace it.

Cloud computing might be likened to the difference between owning a house and renting, or in other cases staying in a hotel instead of your own home. In part, cloud computing is the substitution of remote and rented capacity versus building and owning one's own data centers. In part, cloud computing also represents a shift to "computing and applications as a service."

As often is the case for hosted services, start-ups, small and medium-sized businesses will be early adopters of cloud

computing services, as it allows them access to applications and platforms they might not be able to afford, or may not want to invest in. In a sense, cloud computing offers an "IT-department-as-a-service," Ovum argues.

Amazon's Web Services, Elastic Compute Cloud — the so-called "EC2" services, which recently were launched in Europe, as TMCnet reported — and Simple Storage Service are examples. So are Google Mail, Docs and App Engine. Salesforce.com also is an example of cloud computing.

Enterprises still are somewhat cautious about relying on such services for mission-critical applications, though. Control and reliability issues are foremost among concerns enterprise IT managers often have.

Cloud computing creates new management challenges more akin to those of the electricity grid than anything else, says Ovum. Under an outsourcing deal a CIO can always, as a final resort, insist on enforcement of the terms of a contract and its service level agreement. But, if the cloud is like the electricity grid, then we know that an SLA is of little value during a major power outage.

Significant development activity by the major cloud players not surprisingly now is aimed at solutions for such enterprise concerns, Ovum says.

Despite the challenges, cloud computing introduces new options and flexibilities for the CIO and ought not to be written off as an option just because the marketers have gone overboard with applying the label to virtually any online service, Ovum argues. **IT**

By: David Sims



[www.tmcnet.com/2665.1](http://www.tmcnet.com/2665.1)

## SpeechStorm Puts IVVO on 3G Mobile Phones

**SpeechStorm**, which sells phone self-service products for contact centers, has extended its IVVO phone self-service suite with the launch of a new range of Visual IVR applications, designed to open a new revenue stream and customer service enhancement channel for businesses.

Through a video call on a 3G mobile phone, callers gain a visual representation of business transactions such as transferring money or checking in for a flight, and leisure transactions like booking cinema tickets and checking sports scores.

One advantage the SpeechStormers play up is how the product dramatically reduces the time spent listening to voice-based menu options, as IVVO enables the user to complete the transaction much quicker and more intuitively.

In November, TMCnet's Susan Campbell reported that SpeechStorm announced its plans to launch a new suite of Visual IVR applications which will be combined with the already familiar voice-based IVR. This new suite is expected to add a visual experience for callers.

Visual IVR, using video as the delivery channel, offers businesses significant new potential to generate and drive additional revenue and provide innovative customer services improvements, explains Daniel Hong, lead analyst, Customer Interaction Technologies at Datamonitor. "The continued growth and adoption of the 3G network in Europe and the Middle East paves the way for this new channel."

The company points out that IVVO Visual IVR benefits for the caller include a visual, intuitive interface, service not subject to IP/HTTP latency problems

between device and server and no downloads it's delivered as part of a transient video call, so no data is downloaded to the phone which, in turn, improves security as no footprint is left behind when call ends.

According to Campbell, "When visualization is added to traditional IVR, it reduces the time people spend listening to full menu options before making a choice. It also puts a visual element to the business transaction itself, including transferring money or checking in for a flight. Such an approach ensures that the user can complete the transaction much quicker and more intuitively."

Oliver Lennon, CEO of SpeechStorm and a guy who's never called "John," notes that visual IVR is "gaining increasing acceptance in Europe and the Middle East with the growth and proliferation of the 3G network." **IT**

## Join The Packet 8 VoIP Services Community!

Whether you are a start up or an established company, a one-person business or an organization of 100 employees, a VoIP-hosted phone solution with a lower TCO, reduced complexity and more advanced communication features is the obvious and smart choice.

But, one size does NOT fit all! As such, TMCnet has joined together with one of the industry's leading IP communications service providers, 8x8, Inc., originator of Packet8 Internet Phone Service, to educate the business and residential communities on the advantages and efficiencies of VoIP-hosted phone service.



## VoIP Services For SMB & Residential

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**voipservices.tmcnet.com**



[www.tmcnet.com/2666.1](http://www.tmcnet.com/2666.1)

## NEC Named U.S. Market Leader for VoIP Lines in 2007

NEC Unified Solutions has been named the market share leader for overall telephony lines for SMBs in 2007. The company reportedly captured about 13.7 percent of the U.S. market share for combined key systems and SMB IP telephony lines, citing data from T3i Group.

Larry Levenberg, vice president and general manager of national channels at NEC, said his company is pleased with the designation. "We believe that in today's tough economic climate, a trusted, stable partner can be the key to building a successful channel and we think this shows that NEC Unified is the right choice for unified communications, including telephony, in the SMB market," Levenberg said.

[www.necunified.com](http://www.necunified.com)

[www.tmcnet.com/2668.1](http://www.tmcnet.com/2668.1)

## D-Link Intros Management Features for IP Surveillance Systems

Recently launched professional, state-of-the-art software from D-Link can manage, record and monitor single-site network video recorder (NVR) IP surveillance camera systems. The company said that a combination of D-Link's line of network cameras and the offerings provide an ideal solution for small-to-medium businesses (SMB) who want to affordably leverage the advanced functionality and manageability found in enterprise systems.

In collaboration with Aimetis, a global provider of integrated intelligent video software, D-Link has launched Symphony, an integrated video management and video analytics platform that can help manage large amounts of raw video data. D-Link is also offering two comprehensive IP video surveillance control and management software platforms, NetDVR and ProSight-SMB by partnering with On-Net Surveillance Systems Inc. (OnSSI), a provider of intelligent, open architecture IP-based video surveillance software.

[www.dlink.com](http://www.dlink.com)

[www.tmcnet.com/2669.1](http://www.tmcnet.com/2669.1)

## Ipitomi Adopts Sipera IPCS Solutions to Secure Cisco IP Telephony System

Sipera Systems, a provider of real-time Unified Communications (UC) security, has announced that Ipitomi, a provider of technology and telecoms services operating in the UK and Europe, has adopted Sipera IPCS solutions.

This implementation was made in an effort to enable and secure Ipitomi's state-of-the-art Cisco-based IP Telephony service. The company will also be better positioned to realize maximum uptime of its advanced communications solutions for small office and home worker customers.

With the Ipitomi SoHo solution, customers are able to connect up to 24 handsets through any Internet connection and securely use the Internet to make and receive phone calls. This solution also offers Single Number Reach, allowing one telephone number to simultaneously ring a customer's landline and alternative phone numbers. This capability further increases worker productivity as it ensures end-users can be contacted regardless of their location.

[www.sipera.com](http://www.sipera.com)  
[www.ipitomy.com](http://www.ipitomy.com)

[www.tmcnet.com/2670.1](http://www.tmcnet.com/2670.1)

## Net Quintum VoIP Gateways Achieve Certification for Microsoft Exchange Unified Messaging

NET Quintum has completed Microsoft certification for Microsoft Exchange Unified Messaging for both the VX and Tenor lines of VoIP switches and gateways. The successful certification for the New Jersey-based company confirms what NET Quintum executives have long touted: their ability to integrate a customer's existing voice infrastructure with

Exchange Unified Messaging. The completion of the Exchange Unified Messaging certification complements the existing certification for Microsoft Office Communications Server 2007.

"The certification for Exchange Unified Messaging gives our customers and partners' confidence that the VX and Tenor product lines provide a seamless solution for both Office Communications Server 2007 and Microsoft Exchange Server 2007," said Chuck Rutledge, vice president of Marketing for NET Quintum.

NET Quintum is a wholly owned subsidiary of Network Equipment Technologies.

[www.microsoft.com](http://www.microsoft.com)

[www.quintum.com](http://www.quintum.com)

[www.tmcnet.com/2667.1](http://www.tmcnet.com/2667.1)

## Adtran Intros n-Command MSP to Ease Remote Management of VoIP Networks

Adtran has announced a network management platform, n-Command MSP, for remote monitoring and management of Adtran NetVanta or TotalAccess converged networking solutions. The Web-based platform is designed to simplify new device deployment and enable managed service providers, service providers and enterprise IT organizations to deliver on service level agreements, improve customer service response times, reduce network downtimes and proactively monitor and report the performance of VoIP networks, all while reducing operational costs.

Furthermore, the MSP platform allows network managers to view and report current and historical VoIP performance statistics, automate individual or network-wide firmware upgrades and configuration backups, simplify installation and turn up, improve asset tracking and inventory management, monitor and report on the overall health of the network by location or customer.

[www.adtran.com](http://www.adtran.com)





[www.tmcnet.com/2673.1](http://www.tmcnet.com/2673.1)

## Novatel Intros MiFi 3G Mobile Hotspots

Novatel has launched the MiFi series of Intelligent Mobile Hotspots. The pocket-sized devices promise to deliver wireless 3G data network access to multiple users within a small area. The MiFi product line enables users to access high-speed Internet from any place that has a cellular connection, including moving vehicles where multiple passengers may need Internet access.

According to officials, MiFi is unlike other router solutions in that it does not require an external broadband modem to provide connectivity. Instead the MiFi line creates a personal cloud of high-speed Internet connectivity that can be shared between multiple users and any WiFi devices such as laptops, cameras, gaming devices and multimedia players.

[www.novatelwireless.com](http://www.novatelwireless.com)

[www.tmcnet.com/2674.1](http://www.tmcnet.com/2674.1)

## Harris Signs Agreements with Voyant, Pragmatics

Harris, an international communications and information technology company, recently announced two separate agreements with Voyant International Corporation and Pragmatics, Inc.

Harris has concluded a licensing agreement with Voyant, a provider of in-flight, broadband connectivity solutions for the commercial airline industry. Harris is licensing its software-defined radio (SDR) technology to support Voyant's broadband-dependent activities during commercial flight, such as Internet access, file transfers, and the like.

The company also announced a potential three-year, \$8 million task order by Pragmatics, an IT solutions provider for software engineering and systems integration, systems engineering, information assurance, infrastructure management, and program management support. Under the agreement, Harris will provide desktop and help desk support services for up to 37,000 desktops at 28 separate offices in the U.S. Department of State's Bureau of Information Resources Management.

[www.harris.com](http://www.harris.com)

[www.voyant.net](http://www.voyant.net)

[www.pragmatics.com](http://www.pragmatics.com)

[www.tmcnet.com/2675.1](http://www.tmcnet.com/2675.1)

## Cloakware Offers Content Protection Technology to Cable Operators in North America

Cloakware, a provider of software technology solutions

**cloakware®**

AN IRDETO COMPANY

to protect business and digital assets, will now offer its technology to cable operators and conditional access (CA) vendors in North America.

Cloakware's initiative offers cable operators and CA vendors a software-based security solution to enable development of low-cost set-top boxes for the North American market. The system provides high levels of security for a CA protection system without requiring the use of security-specific processing hardware as the set-top. The technology can be upgraded in the field over time.

Irdeto, a company that provides content and business model protection solutions and services, will be the first CA provider to offer Cloakware technology to its customers who require more robust content protection.

[www.cloakware.com](http://www.cloakware.com)

[www.tmcnet.com/2677.1](http://www.tmcnet.com/2677.1)

## Bangla Trac Communications Deploys Veraz I-Gate 4000 PRO Solution



Veraz Networks has been selected by Bangla Trac Communications, a provider of international gateway services, to provide a bandwidth optimization solution. Veraz offers the I-Gate 4000 PRO high-density bandwidth optimization system to interconnect Bangla Trac Communication sites in London, Hong Kong and Dhaka. The advanced voice and signaling compression technology enables the I-Gate 4000 family of bandwidth optimization systems to maintain high voice quality with high bandwidth compression rates, the company said.

The I-Gate 4000 PRO supports both TDM and IP transmission infrastructure and can be used in static trunking and switched applications.

Bangla Trac Communications is a relatively new player in the Bangladesh telecom sector having won the license for the international gateway in February

2008. Bangla Trac Communications is one of the four licensed operators who can route incoming and outgoing international calls to and from Bangladesh.

[www.veraznetworks.com](http://www.veraznetworks.com)

[www.banglatraccommunications.com](http://www.banglatraccommunications.com)

[www.tmcnet.com/2676.1](http://www.tmcnet.com/2676.1)

## RAD Data Communications and Teknovus Demonstrate TDM over EPON

Teknovus, a provider of EPON (Ethernet Passive Optical Network) chips for the deployment of triple play services in broadband access networks, and RAD Data Communications, an industry pioneer in pseudowire technology, have announced support for the migration of legacy TDM services to next generation IP networks.

The combination of RAD's TDM pseudowire gateways, along with Teknovus' EPON chips, will allow service providers to consolidate traditional voice, VoIP, data, and video onto one unified network.

[www.rad.com](http://www.rad.com)

[www.teknovus.com](http://www.teknovus.com)

[www.tmcnet.com/2649.1](http://www.tmcnet.com/2649.1)

## Cisco Delivers Advanced Network-Based Media Processing Platform

Cisco recently announced a media processing platform designed to simplify live and on-demand media sharing across PCs, mobile devices and other digital screens, by seamlessly formatting video and rich media for viewing on any device.

The first product being introduced within the Cisco Media Processing portfolio is the Cisco Media Experience Engine (MXE) 3000, which delivers the ability to transform a single source of content so that it is playable on any device. It also delivers real-time post production and processing capabilities such as watermarking, voice and video editing, text and image overlays and noise reduction to create customized broadcast quality video experiences.

According to the company, the Cisco MXE 3000 joins a new class of media-optimized technologies and solutions that enable better video experiences, faster delivery of rich media content and simplified media sharing across the network.

[www.cisco.com](http://www.cisco.com)



[www.tmcnet.com/2678.1](http://www.tmcnet.com/2678.1)

## Sprint to Launch 3G/4G Dual-Mode Mobile Broadband Device

Sprint announced plans to launch 3G/4G dual-mode device, which will operate on the carrier's 3G and 4G networks. This would make Sprint the first and only national wireless carrier to offer customers access to its 4G network and 3G network on one device. The dual-mode device will operate on the nationwide Sprint mobile broadband 3G Network at average downlink speeds of 600 Kbps – 1.4 Mbps.



The Sprint 3G/4G USB Modem U300, manufactured by Franklin Wireless, which designs and markets wireless broadband high speed data communication products, is a data card, which connects to a standard USB port. The device is priced at \$149.99 with a two-year subscriber agreement, after a \$50 mail-in rebate.

[www.sprint.com](http://www.sprint.com)

[www.franklinwireless.com](http://www.franklinwireless.com)

[www.tmcnet.com/2679.1](http://www.tmcnet.com/2679.1)

## Alltel Intros Mobile E-Mail App

Officials at Alltel Wireless announced a new mobile e-mail application, saying their Alltel Mobile E-Mail program is designed to help customers access Web-based personal and work e-mail, contacts and calendar events from their handsets.

According to David Maddox, vice president of product marketing at Alltel, customers increasingly rely on e-mail as a way to stay in touch with friends, family and business associates.

"Our customers want their devices to do so much more than just make calls," Maddox said. "With Alltel Mobile E-mail, customers can send and reply to e-mail and manage their address book in a simple and seamless way."

The basic Alltel Mobile E-Mail package costs about \$4 per month and is com-

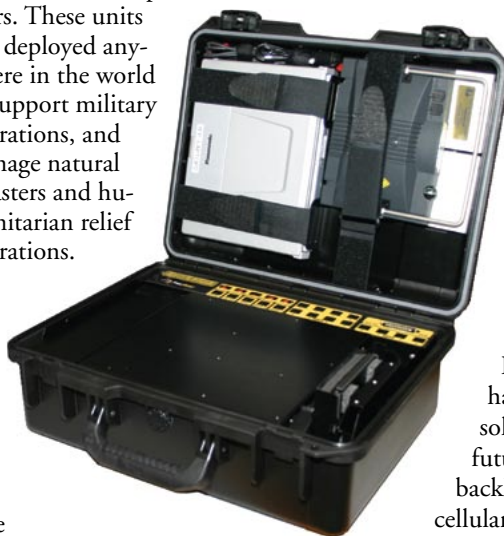
patible with Microsoft Outlook Web Access, so that customers can sync their work calendars and contacts without IT support or the need to run any software inside the firewall.

[www.alltel.com](http://www.alltel.com)

[www.tmcnet.com/2681.1](http://www.tmcnet.com/2681.1)

## PacStar Intros 4100 Communications System, Includes VoIP Capability

PacStar, a technology-based provider of communications solutions to the military and government recently announced the availability of its "4100 Initial Entry Package," a portable, software-managed communications solution for rapid on-the-ground network support to individuals and teams of up to 20 users. These units can be deployed anywhere in the world to support military operations, and manage natural disasters and humanitarian relief operations.



The 4100 delivers Defense Switched Network voice and data services, can connect to LAN or satellite, and IP or analog phones. The package also provides access to two data networks are configurable based on user requirements. These data networks and Voice over Secure Internet Protocol phones are separated from the system by High Assurance Internet Protocol Encryptor devices.

[www.pacstar.com](http://www.pacstar.com)

[www.tmcnet.com/2680.1](http://www.tmcnet.com/2680.1)

## Vyke Intros Mobile VoIP for Blackberry Devices

VoIP service provider Vyke Communications has announced the beta release

of its mobile VoIP software and service for Blackberry devices using RIM software. The new solution is designed to allow users to make VoIP calls over the Vyke network at any time with GSM coverage on their phone, and also works when it is in range of WiFi or 3G mobile data coverage. The software supports most Blackberry devices dating back as far as 2003.

Vyke said that its products feature advanced services, bringing users new ways of making voice calls and sending text messages from the mobile phone, PC and Internet. The company claims that more than 2.13 million active paid customer accounts have been created with the Vyke product suite. Vyke's Mobile VoIP solution is available for other mobile operating systems such as Symbian and Windows Mobile.

[www.vyke.com](http://www.vyke.com)

[www.tmcnet.com/2682.1](http://www.tmcnet.com/2682.1)

## SMARTS Selects Celto's DynaMate Solution for Mobile Backhaul Network

Russian operator SMARTS has selected Celto's DynaMate solution for optimization and future-proofing of its mobile backhaul network. DynaMate is a cellular backhaul traffic aggregation and optimization solution, designed to help mobile operators improve service delivery and increase network efficiency.

SMARTS is deploying Celto's solution to eliminate data services bottlenecks in their access networks, and will enable seamless connection of new base stations and the addition of more transmitter-receivers without additional investment in transport infrastructure. DynaMate will deliver significant resource savings to SMARTS — especially as their network continues to expand. According to the company, adoption of DynaMate should allow for immediate delivery of lucrative multimedia services including mobile TV, mobile video, and VoIP.

[www.celto.com](http://www.celto.com)

[www.smarts.ru](http://www.smarts.ru)





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TollFreeForwarding.com provides businesses with virtual toll-free and local phone numbers in over 75 countries, and 800 cities. Calls to these numbers are forwarded to each customer's call center or office. In addition to this, TollFreeForwarding.com offers related services, such as time profiles and virtual PBX functions.

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- International Toll-Free and Local Numbers, and telecommunications
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[www.tmcnet.com/2685.1](http://www.tmcnet.com/2685.1)**MTS to Purchase AnchorPoint**

Framingham, Massachusetts-based telecom expenses management provider [AnchorPoint](#) announced it was being acquired by Mer Telemanagement Solutions Ltd. (MTS), a business support systems company headquartered in Israel.

According to Roger Challen, president and chief executive officer of AnchorPoint, MTS delivers global telecom management experience plus a large North American customer base.

"This merger provides a foundation for expansion into the international TEM space and provides access to established development and support teams with a solid knowledge in global billing platforms," Challen said. "Additionally, we believe this transaction brings the combined company increased financial strength in this period of market consolidation."

Details of the deal were not released.

[www.anchorpoint.com](http://www.anchorpoint.com)

[www.mtsint.com](http://www.mtsint.com)

[www.tmcnet.com/2686.1](http://www.tmcnet.com/2686.1)**In a Sluggish Economy, Asentinel Customers Save Cash**

With companies fast losing money in the current recession, [Asentinel](#) claims that it can actually save money for its customers with its Telecom Expense Management (TEM) solution.

Often, the telecom system maintained by a company produces, causing companies to shell out more money than they actually should. With its patented software system, Asentinel 5.0, the company claims it can reduce erroneous billing and provide detailed reporting and budgeting capabilities to customers, allowing them to plan their TEM spending in an organized manner.

Aberdeen Group recently hailed Asentinel for its ability to "implement their solutions more quickly than typical TEM users" and "quickly realize savings above and beyond those that were projected," resulting in a faster ROI and increased cash flow.

[www.asentinel.com](http://www.asentinel.com)

[www.tmcnet.com/2687.1](http://www.tmcnet.com/2687.1)**Movero and Ezvim Deliver Joint Mobile Lifecycle Management Service**

A global partnership between Movero Technology, a provider of managed services for enterprise mobility, and [Ezvim](#), a global specialist in Telecom Expense Management, will make available a joint mobile lifecycle management service in Q1 2009.

Based on the integration of their respective TTM and Maestro Software-as-a-Service (SaaS) platforms, this new joint mobile lifecycle management service enables organizations to gain visibility into and control over the entire enterprise mobility lifecycle.

The integrated offering will provide a real-time view of wireless assets and services through a customized, easy to use and scalable Web interface.

[www.moverotech.com](http://www.moverotech.com)

[www.ezvim.com](http://www.ezvim.com)

[www.tmcnet.com/2688.1](http://www.tmcnet.com/2688.1)**Stonesoft Uses BreakingPoint Testing Tools for Network Security Gear**

Stonesoft, a provider of integrated network security and resilient connectivity solutions, helps protect networks with sophisticated content-aware network security equipment. Stonesoft recently selected testing tools from BreakingPoint, a provider of performance and security testing tools, to reduce time-to-test for 10-Gigabit firewall and intrusion prevention systems.

The company offers various network security solutions including StoneGate Firewall/virtual private network (VPN), IPS and secure socket layer (SSL) VPN solutions. These solutions, according to Stonesoft, use granular packet inspection and intelligent event correlation capabilities to protect the network while ensuring resilient connectivity.

[www.stonesoft.com](http://www.stonesoft.com)

[www.breakingpoint.com](http://www.breakingpoint.com)

[www.tmcnet.com/2689.1](http://www.tmcnet.com/2689.1)**Cbeyond to Get BPM Solution from Revelwood**

[Revelwood](#), a provider of sales and business performance management solutions, is offering its business performance management solutions to Cbeyond, an integrated communications and IT services provider, to handle reporting, planning and budgeting activities.

According to Barry Ferguson, senior director of finance at [Cbeyond](#), spreadsheets are not capable of handling the complicated business processes involving investor relations, treasury and stock option administration as well as the traditional finance, planning and forecast roles in its 50-plus cost centers.

The TMI solution, according to Ferguson, had the look and feel of the spreadsheet. It also offered the flexibility they wanted. Cbeyond also uses the solution for other functional areas in the organization, such as HR, operations and accounting.

[www.cbeyond.net](http://www.cbeyond.net)

[www.revelwood.com](http://www.revelwood.com)





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# Talking with Alistair Cunningham, Managing Director, Integrics

By: Richard “Zippy” Grigonis

In 2004, Alistair Cunningham founded Integrics Ltd. (<http://integrics.com>), an independent company offering telecom software and services to businesses. A highly experienced software systems engineer, Cunningham has detailed knowledge of a wide range of business software products, particularly telephony (including VoIP), database, and network products, having installed over 100 VoIP, IVR, and voicemail systems in 17 countries. He holds a Bachelor's Degree (with Honors) and Master's of Engineering Degree in Electrical and Information Sciences from Cambridge University.



Integrics' Enswitch is designed for telecom products and services companies that offer their customers integrated solutions for multi-tenant hosted PBXs, ITSP (Internet Telephony Service Provider) services, VoIP for WiFi providers, toll-free and number translation services, calling cards, call shops, billing, resellers and affiliates. Enswitch provides integrated end user and telephone management, pre-paid and post-paid billing, invoicing, resellers and affiliates, and a wide range of telephony features. It's compatible with many phone systems, including all common SIP (Session Initiation Protocol) telephones, all common SIP and IAX (Inter-Asterisk eXchange) PBXs, traditional PBXs and PSTN providers supporting Primary Rate ISDN over E1 or T1, and many others. Enswitch can be used in pure VoIP environment, a pure traditional telephony environment, or a hybrid environment, making it suitable for transitioning legacy PBX environments to VoIP.

Interestingly, as Alistair Cunningham tells us, open source plays a major part in Enswitch.

**RG:** Your Enswitch product provides quite a bit of functionality in a single integrated platform — PBX features, multiple levels of reseller, pre-paid billing, post-paid billing and invoicing, etc. How does open source fit into your environment?

**AC:** Open source provides the building blocks that our product is built on. Linux provides the operating system, MySQL the database, and Asterisk and OpenSER provide high-level access to telephony stacks. Asterisk is particularly important as it provides a very powerful platform for building telephony applications. It offers control of calls at an API level without needing to worry about the specifics of SIP, ISDN, or other protocols.

The Enswitch code then sits on top of all of these components and provides the billing, invoicing, multi-customer interface, SOAP API, etc. It also integrates all the lower level components into a highly scalable cluster architecture with failover and redundancy.

Had it not been for open source, Enswitch would not exist today.

**RG:** Is it more or less trouble dealing with the open source aspects of your system?

**AC:** Open source components are undoubtedly less trouble than proprietary. They allow us to conduct detailed troubleshooting ourselves as we have full access to the source code. They also allow us to be in control of our own destiny in that there's no mandatory upgrade path and if need be we can add core functionality ourselves.

We extend the same principles to our own code. Although Enswitch is commercially licensed, we provide full source code to our customers. Customers are very welcome to customize the product to their own needs — indeed we provide facilities and documentation to make this as easy as possible. Most of our customers do at least some customization of the Enswitch web interface, and a few have completely re-written it to fit into their existing websites.

**RG:** In terms of the future, do you think open source will be limited to small deployments, or will it appear in larger enterprises and providers?

**AC:** It's already there! We have one customer with over 100,000 users, and many fortune 500 companies have Asterisk systems in production today. Within larger enterprises, departments often have significant freedom to choose the technologies that work for them, which creates opportunities for engineers and technically-minded managers to introduce open source when it's the best fit. It then tends to spread rapidly as other uses are found for it and other departments become aware of the flexibility and cost savings. In the long term, open source is a compelling option for larger providers because it gives them an enormous level of control over their own systems. **IT**

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



[www.tmcnet.com/2690.1](http://www.tmcnet.com/2690.1)

## Enterprises Turn to Open Source Application Servers for Savings

Enterprise IT buyers would most like to replace operating systems, application and Web servers, databases and development tools with open source technologies, according to a recent survey.

Officials at OpenLogic, Inc., a provider of open source software solutions say their poll revealed a growing interest among buyers using open source technologies to save money. According to the survey, cost-savings is the major reason that IT enterprise buyers consider open source application servers (31 percent), followed by support of standards (16 percent), functionality (12 percent), access to source code (11 percent), robustness and scalability of performance (9 percent), preference for open source adoptions (9 percent), access to community (7 percent) and in-house expertise (5 percent).

The poll also showed that robustness, scalability and performance concerns are a challenge for IT enterprise buyers with using open source application servers.

[www.openlogic.com](http://www.openlogic.com)

[www.tmcnet.com/2691.1](http://www.tmcnet.com/2691.1)

## FreeSWITCH's 48k VoIP

FreeSWITCH, an open source telephony platform designed to facilitate the creation of voice and chat driven products scaling from a softphone up to a softswitch has announced that they now can support CELT, a new open source audio codec that allows for CD-quality transmission with VoIP. CELT is described as an "ultra-low delay" audio codec that supports both voice and music. FreeSWITCH's 48kHz VoIP can be carried in 48kbps of bandwidth.

According to FreeSWITCH, "The CELT codec represents the best of both worlds: audio quality equal to that of Vorbis while achieving the low latency needed for VoIP transmissions. We anticipate that more equipment manufacturers and service providers will turn to high-quality, low-cost codecs like CELT."

[www.freeswitch.org](http://www.freeswitch.org)

[www.tmcnet.com/2692.1](http://www.tmcnet.com/2692.1)

## Analyst: Alliance's Rise Signals Wide Adoption of Google Android, Challenge to LiMo

The recent announcement that the Open Handset Alliance has drawn 14 new companies into its fold marks a major step forward for wider adoption of the [Android](#) mobile platform, say researchers at Ovum, an international telecom research firm headquartered in London.

Officials at Ovum say the announcement signals greater confidence with Android within the mobile industry. According to Adam Leach, a principal analyst at Ovum, the extended membership will lead to a greater number of Android devices in the market next year and could lead to much-needed consolidation in the mobile Linux space.

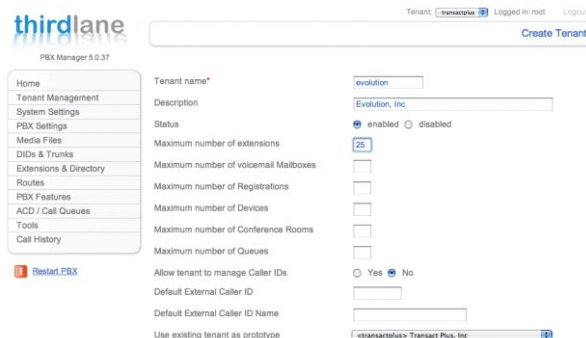
The 14 companies that this week joined the group are: AKM Semiconductor Inc., [ARM](#), ASUSTek Computer Inc., Atheros Communications, Borqs, Ericsson, Garmin International, Inc., Huawei Technologies, Omron Software Co. Ltd, Softbank Mobile Corporation, Sony [Ericsson](#), Teleca AB, Toshiba Corporation and Vodafone.

[www.openhandsetalliance.com](http://www.openhandsetalliance.com)

[www.ovum.com](http://www.ovum.com)

[www.tmcnet.com/2696.1](http://www.tmcnet.com/2696.1)

## Asterisk Contributor Third Lane Becomes Digium Software Partner

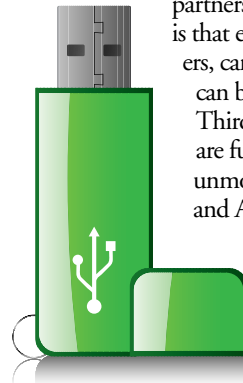


Digium, Inc. — creator and primary corporate sponsor of the Asterisk open source telephony platform — and Third Lane Technologies have announced that Third Lane has become a Digium software partner. The relationship is not entirely new.

The companies have worked together for years and Third Lane has contributed to the open source Asterisk project.

Third Lane's flagship product, called Thirdlane Multi Tenant PBX, is a feature rich Asterisk based hosted PBX, which includes a Web GUI designed to simplify the configuration and customization of the PBX. The upshot of this

partnership announcement is that enterprise customers, carriers, and resellers can be confident that Third Lane's solutions are fully compatible with unmodified Asterisk and Asterisk Business Edition.



According to Digium officials, Third Lane is the first company in the

Digium ecosystem to provide a true multi-tenant PBX that allows ITSPs and resellers to host virtual PBXs for their customers.

[www.digium.com](http://www.digium.com)

[www.thirdlane.com](http://www.thirdlane.com)

[www.tmcnet.com/2695.1](http://www.tmcnet.com/2695.1)

## Xorcom Debuts Asterisk IP-PBX Disaster Recovery Tool

[Xorcom](#) recently announced Live Rescue, a utility that lets customers recover and operate their Xorcom XR2000 and XR3000

Asterisk-based IP-PBX directly from a Disk-on-Key (DOK) connected to the IP-PBX USB port.

The Xorcom solution was designed for use in cases of faulty configuration, disk crash, or other disasters. With Live Rescue, seamless operation of the PBX system is enabled from a bootable 4 GB USB DOK

until maintenance can be scheduled conveniently. The solution works in conjunction with Xorcom Rapid Recovery, a service for backing up and restoring the Xorcom IP-PBX.

[www.xorcom.com](http://www.xorcom.com)

# IP in the Contact Center

By Richard “Zippy” Grigonis

Programming in an IP (Internet Protocol) network environment has enabled developers to build scalable, stable, and centralized applications that can both visualize and manage vast multi-site, multi-media contact centers. The use of IP has also yielded cost savings for U.S. contact centers, according to *The U.S. Contact Center Operational Review (2nd edition)*, a study of over 200 contact center operations conducted by the analyst firm [ContactBabel](#). Most contact centers that have implemented IP report benefits: 60 percent of respondents report significant network and IT cost reduction, and 64 percent report improved ability to adjust agent configurations.



“Many contact center investment decisions emphasize short term operational cost savings”, commented Steve Morrell, author of the ContactBabel report. “Our research confirms that savings opportunities with IP are significant. But our results also suggest that when considering IP contact centers, companies should think of them as enablers whose value will be realized over time in new applications and a better customer experience,” Morrell continued. “In addition to flexibility in deploying agents, many respondents cited easier integration among different contact center applications, a benefit that strongly supports both agent efficiency and the customer experience.”

Many players are jumping into revitalizing the contact center, such as [Calabrio](#), a spin-off of Spanlink Communications, which has developed a unified suite of customer interaction and workforce optimization software for next-gen, IP-based contact centers. The Calabrio Unified Desktop, for example, makes it easier for agents and supervisors to interact with tools and customers and with each other. Automated workflows minimize transaction steps, errors and handle time, and Calabrio’s Workforce Optimization software can help contact centers measure quality and performance, and make continuous improvements in the effectiveness of people and processes. At a higher level, the Calabrio Unified Su-

pervisor Desktop integrates team coaching and collaboration tools with the Calabrio Quality Management, Calabrio Workforce Management, and performance reporting solutions. Finally, Calabrio One provides layered reporting, including historical reports that uncover requirements for agent training and process improvements. Targeted alerts can be set up so supervisors and managers can take immediate action to adjust agent or team activities in real time.

## That Old Familiar Face

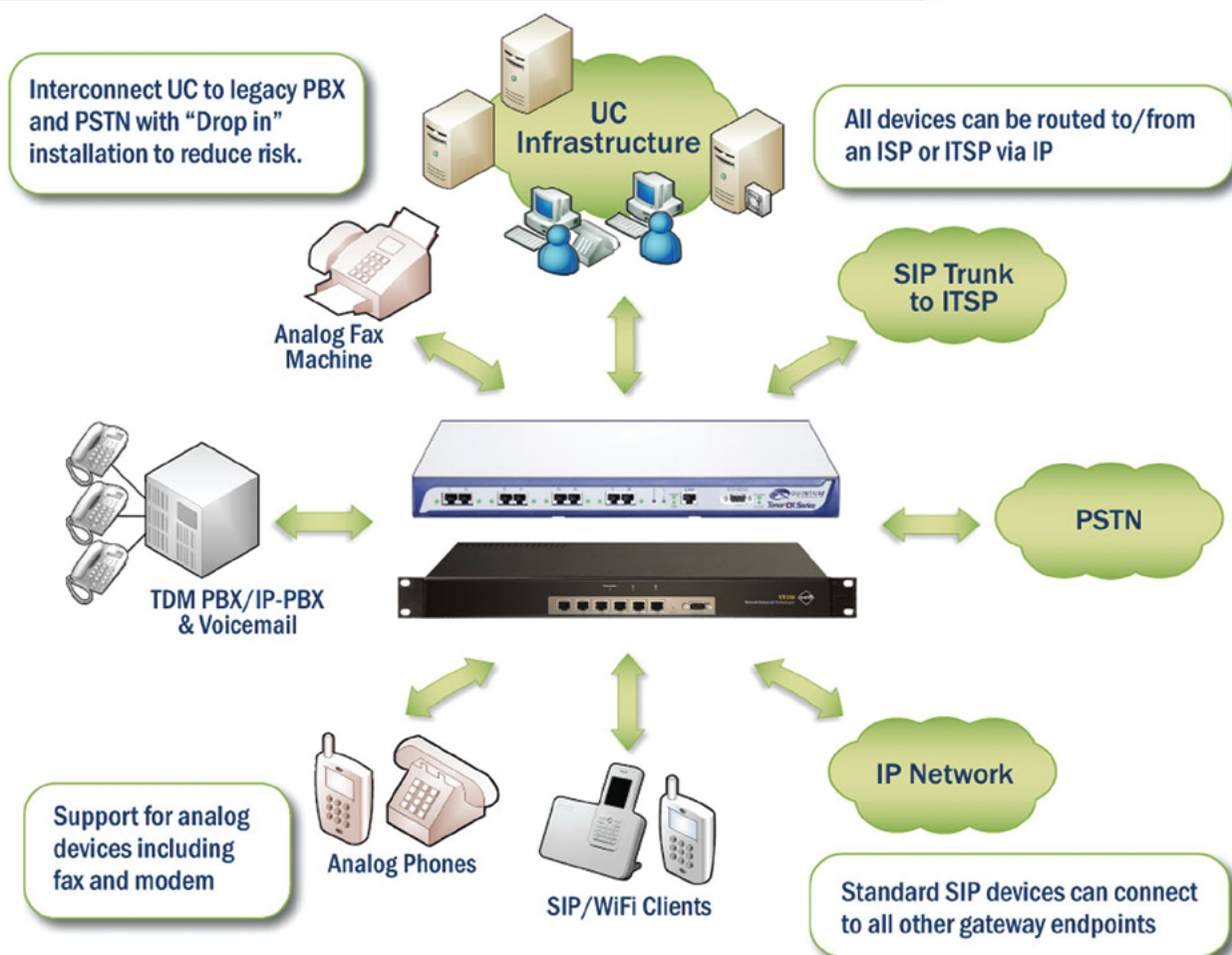
Since contact centers rely on phone system equipment and automatic call distribution (ACD) functionality, it would make sense that vendors of such equipment would add contact center capabilities to their offerings. [Mitel Networks](#), for example, for many years known for its SX-2000 PBX and now for the SX-200 IP Communications platform (serving up to 600 users) and 3300 IP Communications Platform (serving 10 to 65,000 users), has become a force to reckon with in the contact center market. Mitel Contact Center Solutions are offered in two packages: Mitel Contact Center Business Edition for individual/single site contact centers having 25 or fewer agents and focused application needs; and the Mitel Contact Center Enterprise Edition, a scalable, resilient, and virtual solution for highly sophisticated contact centers of all

sizes across one or more locations. (Customers can easily upgrade from the Business Edition to the Enterprise Edition.)

The Mitel Contact Center Enterprise Edition is remarkably scalable, since it can meet the advanced requirements of small, single-site contact centers, and yet it can seamlessly scale to handle the needs of distributed, multi-site, virtual contact centers. It offers extensive custom reporting, sophisticated routing and highly customized Interactive Voice Response (IVR), customized integrations for Customer Relationship Management (CRM) and WorkForce Management (WFM), resiliency and high availability, and support for distributed, multi-site, virtual deployments. The system is based on the Mitel 3300 IP Communications Platform and its ACD software, and a modular suite of extensive, web-based applications residing on the enterprise server, such as Mitel Contact Center Management (Management tools for small to multi-site contact centers), Mitel Interactive Contact Center and Visual Queue (Dynamic telephone system control in real-time), Mitel Call Accounting, and the Mitel Contact Center Scheduling and Schedule Adherence (workforce management, forecasting and monitoring).

You’ll also see these traditional vendors accelerating the innovation process by teaming

# Introducing the Unified Communications Global Online Community



The Unified Communications Global Online Community, sponsored by NET/Quintum Technologies, is designed to serve as the premier resource for information on Unified Communications technology and solutions. As the Unified Communications space continues to evolve, readers can stay abreast of trends and issues driving this exciting technology Bookmark this page to keep informed.

NET and Quintum deliver VoIP solutions designed to bring the reliability and voice clarity of public telephone networks to Internet telephony. Their intelligent VoIP access solutions integrate easily into existing PBX and IP infrastructures, making them the ideal choice for service providers and enterprises alike.

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with software developers and companies working in the IP contact center field, such as the way [Zeacom](#) has made its Zeacom Communications Center (ZCC) 5.1 software compliant with Avaya's IP Office 4.2, Communication Manager 5.0 and AES 4.2. The [Avaya](#)/Zeacom combination delivers rich presence, unified messaging, contact center functions, IVR, SIP-based audioconferencing, mobility, a centralized operator console, and Microsoft integration in one server using a single administrative interface.

Familiar vendors have adjusted their strategy in different ways. CyberTech International, which is a leader in the voice logging and communications recording industry, recently announced an interesting remote-installation service offering for advanced recording solutions, capable of providing considerable cost savings and zero network downtime. CyberTech remote installation is now available to all customers following its now proven track record in some of the world's most security-sensitive networks, chief among them a globally branded, Western Europe-based commercial bank. The service was rolled out in less than a month after the initial banking installation that was performed securely and inexpensively via secure VPN access. The entire solution was activated from the organization's headquarters in a matter of hours flawlessly and for a fraction of the cost of conventional solutions for the bank's mission-critical operations.

The full CyberTech remote-installation solution is just part of various remote service features developed by the company. These include automated system checks and alarms from CyberTech's central global support desk. The support desk conducts daily performance assessments of installed recording systems at contact centers (and elsewhere), sending reports on status. In the event of issues, dial-in capability on the system enables CyberTech to perform checks, adjust configuration settings and install updates remotely.

### Unified Communications in the Call Center

Interactive Intelligence has over the years perfected a single all-in-one platform to meet

the needs of any contact center. Incorporating what is now called unified communications, their Customer Interaction Center (CIC) is suited for contact centers of from 25 to 5,000 agents and it can be deployed as a premised-based or as a hosted Software-as-a-Service (SaaS) communications solution. (An all-software IP version of CIC can be run on standard off-the-shelf servers to keep costs low.) CIC has been run as a UC solution for multi-site deployments; it's based on the world standard SIP (Session Initiation Protocol) call control protocol and Voice over IP. It can deliver multimedia ACD routing, outbound dialing, call and screen recording, speech-driven Interactive Voice Response (IVR), etc. Applications running on the CIC support agents, supervisors, and IT managers alike, whether they're office bound or working remotely.

The Customer Interaction Center platform is truly a centralized all-in-one platform, encompassing as it does IP PBX/PBX functionality, an ACD with built-in multi-channel queuing; speech-enabled IVR; recording, scoring and quality monitoring; outbound campaign management; customer self-service and eService automation; workforce management (WFM); supervision and system monitoring; remote agent capabilities; UC messaging and voicemail.

Obviously different contact centers have their own, unique needs. Interactive Intelligence provides skills-based routing, real time dashboards and alerting to enhance your customer service in various ways.

Another company that has imbued UC into their offerings is one of the oldest names in the contact center business, [Aspect Software](#). For 35 years their software and consulting services have assisted two-thirds of the Fortune Global 100, as well as small and medium enterprises.

Aspect released Aspect Unified IP 6.6, on December 12, 2008, which includes a some significant new features, including an ask-an-expert capability using the instant messaging and presence technology available in Microsoft Office Communications Server 2007. This ask-an-expert feature enables Aspect

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## Introducing the **WiMAX Global Online Community**

Broadband Wireless Access (BWA) technology holds the promise of bringing high quality Internet, data, video and voice services to millions of individuals and businesses that are constrained by costly or limited access to broadband communications.

The WiMAX community addresses issues important to decision makers in the residential, personal and enterprise markets. Visitors can find valuable resources such as feature articles, success stories and industry news.

SR Telecom & Co is proud to sponsor the WiMAX Global Online Community. As a provider of WiMAX and WiMAX-based wireless technologies, operators can look to SR Telecom & Co. whenever a project demands an optimized solution - in terms of application support, frequency of operation, or packaging and operating environment requirements.

**<http://wimax.tmcnet.com>**



Unified IP to seamlessly integrate to Microsoft Office Communications Server 2007 to specifically request real-time presence information on experts located across the enterprise to assist with customer interactions and improve first-call resolution. Aspect Unified IP 6.6 unites inbound, outbound and blended multichannel contact (including voice, email, web, workflow and fax) in a single, scalable session initiation protocol (SIP)-based voice over IP (VoIP) software platform.

"One call resolution" has been a holy grail for contact center vendors, and locating and quickly contacting during a customer call an appropriate expert who has proper knowledge is considered the an indispensable tool to achieve customer satisfaction.

In support of the ask-an-expert feature, Aspect Unified IP 6.6 has added a new user classification, Knowledge Worker (expert), so that companies can add data on experts, such as names and phone numbers, to the Aspect Unified IP database, and assign a skill or set of skills, to define their profile as an expert. This enables agents to search for experts with unique skills who can assist with specific types of customer inquiries and then engage them via instant message (IM) or phone.

Aspect customer and partner, Data-point, a systems integrator for enterprise and call center communications based in the United Kingdom, is already using Aspect Unified IP 6.6 to successfully identify the availability of knowledge workers, route calls to them, and record and monitor the interactions.

### Contact Centers as a Service

Most smaller businesses don't relish the thought of having to spend money on IT staff and contact center equipment and software. But they can enjoy full-featured contact centers just like major enterprises, thanks to network-based services made possible by such innovators as [CosmoCom](#). Their con-

cept of Contact Center On-Demand (CCOD, also known as hosted contact center or network-based contact center) is a premier example. Instead of just supplying basic transport services to contact centers, Network Service Providers (NSPs) provide basic transport services to contact centers, leaving the high-margin revenue of advanced contact center features to vendors of premise-based equipment. With CCOD, network operators can garner new higher margin revenue, and can protect existing sources of revenue from price-driven churn. Indeed, many of the world's leading telcos, including [BT](#), Deutsche Telekom, Orange Business Services, KT, PLDT, NTT, Tata and KPN are now offering CCOD and related services.

CosmoCom provides their Contact Center On-Demand technology worldwide in the form of CosmoCall Universe, which realizes CCOD as a complete, unified, multi-tenant contact center suite that includes ACD, IVR, IVVR, [CTI](#), predictive dialing, multimedia recording and a portfolio of management applications, all running on a single consolidated platform.

This leads us to CosmoCom's other concept, Contact Center Consolidation 2.0, for IP contact center platforms found in enterprises having the largest and most complex requirements. This involves consolidating multiple locations, onshore, offshore, and home-shore agents, formal and informal agents, captive and outsourced operations, multiple communication channels, and multiple applications. Organizations can experience the benefits of Consolidation 2.0 by deploying CosmoCom technology themselves or by working with a service provider that hosts CosmoCom platforms on a dedicated or shared basis, such as BT, Deutsche Telekom, Orange Business Services, Telefonica, NTT, Tata, PLDT, Verizon, and many others. **IT**

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

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2:00pm-3:30pm	Beyond POTS Replacement

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Wednesday, February 4

8:30am - 12:00pm	Just for Carriers: SIP Trunk Intensive Workshop
12:30pm-4:00pm	SIP Trunk "Basic Training" with Ingate



# Metro Ethernet Marches On

By Richard “Zippy” Grigonis

Ethernet is evolving from old best-effort Ethernet (as found on LANs) to Carrier Ethernet (Ethernet as a service replacing SONET and picking up Frame Relay, ATM and Private Line customers) to Ethernet as a total ubiquitous transport (any media over Ethernet; fiber dominant in core, metro and access areas). At the moment, Metro Ethernet, now better known to network operators as Carrier Ethernet, is quite hot. Customers obviously don't want a best-effort dumb pipe, and are forcing Ethernet to support reliability, complete OAM (Operations, Administration, and Maintenance), QoS (Quality of Service), monitoring and test capabilities in support of SLAs (Service Level Agreements), just like previous generations of transport technologies. Service providers, for their part, are not too keen on replacing \$1,000 a month services with \$500 a month Ethernet, so they're searching for ways of providing revenue-generating differentiated Ethernet services. In any case, Ethernet will be the dominant technology service providers use to connect enterprise networks.



Over at [ADVA Optical Networking](#), Fred Ellefson, Vice President of Applications and Solutions, says, “Ethernet, wireless backhaul, and those markets look like they may not grow the 50 percent per year that people originally expected, but they are still growing. Compared to many other markets that are heading into negative territory for 2009, Ethernet will remain strong. One school of thought that says that as everybody's budgets get tighter, and they're looking for things to cut, that could drive them to switch from a \$1,000-a-month frame relay service to an Ethernet service that might be \$700 or even \$500 a month. These economically tight times might actually accelerate movement from telephony services to Ethernet usage. Capital investment is one of the first things that gets hit. As people transit from private line ATM or T-1s to Ethernet, usually you can use the same switch, since that switch already has Ethernet ports, so there's no capital generally involved.”

“We see three trends,” says Ellefson. “First, NNI [Network-to-Network Interfaces], wholesale Ethernet and mobile backhaul. Mobile backhaul is still a bright spot in the market, though projects originally planned to unfold over two years may now take three years, owing to the economy. But there's definitely a lot of end user ‘pull’ for data services. The second trend involves the high cost of energy and the need for power reductions. There's a lot of talk of how to architect ‘green’ networks that have reduced energy consumption. The third trend reflects technology trends and evolution in Ethernet.”

“What's new and different in this space is that wholesale Ethernet is now a big requirement for mobile backhaul,” says Ellefson. “We've had for a long time a User Network Interface [UNI] that's between a carrier network and an end user or customer premise. Added to this is the idea of an NNI that would go between carriers. Imagine a wireless carrier and a wholesale access provider with an NNI handoff between them, which indicates the need for NNI demarcation devices at the handoff point. In many cases this is quite similar to a UNI interface at the customer premise, but there are some differences: The Link/Service layer Ethernet OAM [802.3ah/802.1ag/Y.1731] is the same for the NNI and UNI. The service layer policing/shaping and definition are similar. But as you get into the matter of protection mechanisms, and things such as throughput testing [RFC-2544], and tunneling and those kinds of things, that's where you start seeing differences between them. So when you hand off between carriers you might have 100 cell towers that all go through a single NNI between carriers. Losing just one link to one tower is bad, but it's not the end of the day. However, losing the NNI link that supports 100 towers could knock out most of a city. So there's a lot more interest in redundancy and in architecting for cable failures as well as equipment failures in that part of the network.”

“A wholesale provider delivering Ethernet services looks to do some sort of transport function or media conversion function,” says Ellefson, “because native Ethernet only travels 100 meters, and when you start talking about cell towers, 100 meters doesn't



## Introducing the **IP-PBX Global Online Community**

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get you very far, so you almost always have to convert Ethernet into optics, in the case of 100FX and GbE, or perhaps into T1s or T3s, or maybe over copper-based DOCSIS T1s or NxT1s or radio. They can overlay on top of that some of the key OAM things that have evolved over the last few years: The ability to do loopbacks and testing, and of course monitoring the SLA [Service Level Agreement] and providing an SLA between carriers.”

### Riding the (CWDM) Wave

Atlantic Metro Communications operates advanced Internet Data Centers and networks throughout the New York Metropolitan area and Chicago. The company also provides managed ISP solutions, colocation, metro transport, IP bandwidth, managed hosting and voice solutions. They provide services to many ISPs, web hosting solution providers, enterprise financial networks, Web 2.0 startups, VoIP suppliers, and carriers. Currently, Atlantic Metro Communication’s global network includes multiple PoPs in Chicago, Dallas, Los Angeles, Minneapolis, New York, Toronto, Canada and London, UK.

James Cornman, CTO, says, “We offer CWDM (Coarse Wave Division Multiplexing) Layer 1 passive waves. It allows our provider and enterprise customers to put their own equipment on the wave and be guaranteed a secure channel — there’s no shared infrastructure, it’s not switched Ethernet, which is what many other carriers offer. We can provide services to carriers on a fully dedicated Layer 1 passive channel. No intermediary electronics are necessary. We provide the optics on either side, which we also manufacture. We can also provide lit Layer 2 Ethernet services via our fiber infrastructure, as well as our WiMAX infrastructure, seamlessly between any type of medium. We can deliver a 20 Meg tail circuit via WiMAX or you can also bridge that into a building connected at 100 Mbps. Our whole infrastructure nationwide is pure Ethernet; there’s no SONET anywhere in it. Our topologies run the gamut from point-to-point, point-to-multipoint, full ring, and so forth. We offer the CWDM services in Manhattan and metro area.”

“We see our carrier business growing as people increasingly outsource and replace more expensive solutions with converged technology that we offer,” says Stephen Klenert, Atlantic Metro’s CEO. “We see SONET eventually being phased out. MPLS is becoming a bit more prevalent but that’s an independent phenomenon. As a whole, with the offerings we bring to the table, customers tend to hub a lot of connections off one physical port or in other cases multiple ports in different markets or buildings. Overall, Ethernet is a far better platform to grow, particularly considering the current state of the market, with people not wanting to spend as much capital to get the bandwidth they need.”

### Fabulous & Fabless

New, high bandwidth Carrier Ethernet requires new kinds of Ethernet chipsets, such as those made by Xelerated. Their Xelerated Dataflow Architecture delivers wire-speed deterministic performance, and is used by many Tier-1 carrier networks worldwide. They appear in many Metro, Access, and high-end enterprise Ethernet deployments. Xelerated recently announced its HX300 family of network processor units, said to be the industry’s first programmable Ethernet switches to the fiber access market — enabling the mass deployment of fiber to just about anywhere.

Then there’s Lightstorm Networks, which likes to point out on its website that, “95 percent of the world’s data traffic starts and ends as Ethernet — but carrier networks predominantly use legacy technology to transport data traffic that is encapsulated in connection-oriented protocols.”

Lightstorm, a fabless semiconductor company, aims to do something about that. They design, develop and supply complete semiconductor solutions as well as provide hardware and software subsystems. They’re focused on the Carrier Ethernet segment. Indeed, they’ve built a family of Applications-Specific Semiconductor Products (ASSPs) unique to Carrier Ethernet.

Wade Appelman, Vice President of Sales and Marketing for Lightstorm, says, “The market now understands that you can’t take enterprise Ethernet silicon and apply it to the Carrier Ethernet application. Silicon has traditionally been around from [Broadcom](#) or [Marvell](#) — and there’s a lot of what I would like to call Carrier Ethernet 1.0 applications that have used such silicon and they’ve wrapped FPGAs around them, or they’ve used network processors to build products. But those have a cost and power consumption associated with them. So the trend is people wanting to add the new Carrier Ethernet features like OAM, performance monitoring, network synchronization and timing, and they need a new type of device that you can’t build with enterprise silicon components. That’s why we’ve focused on this new generation of technology. We launched our first product back in the fall of 2007 and have been sampling it in earnest since the beginning of 2008, and now customers are far along in their designs so we can announce them.” **IT**

Read this article in its entirety at [www.tmcnet.com/2710.1](http://www.tmcnet.com/2710.1).

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

#### The following companies were mentioned in this article:

**ADVA Optical Networking**  
[www.advaoptical.com](http://www.advaoptical.com)

**Atlantic Metro**  
[www.atlanticmetro.net](http://www.atlanticmetro.net)

**LightStorm Networks**  
[www.lightstormnetworks.com](http://www.lightstormnetworks.com)

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**RAD Data Communications**  
[www.rad.com](http://www.rad.com)

**Xelerated**  
[www.xelerated.com](http://www.xelerated.com)

Robert Dotson,  
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# Mobile VoIP and Video

By Richard “Zippy” Grigonis

Mobile remains the most exciting segment of the telecom world. There are a growing, perhaps bewildering number of technologies blossoming that support advanced forms of wireless voice and video, whether it be the simple forwarding of calls and PBX functions to a cell phone or laptop softphone to more sophisticated Fixed-Mobile Convergence scenarios involving dual-mode handsets and Kineto Wireless' Unlicensed Mobile Access (UMA) extension of GSM over WiFi, Femtocells, the VCC (Voice Call Continuity) capabilities associated with IMS (IP Multimedia Subsystem), and other alphabet soup acronyms and initialisms that have been discussed and debated in U.S. and Europe for some time now. When it comes to real-time video calls to the masses (and perhaps Mobile Video in general), it appears that Asia is poised eagerly to embrace the technology before the rest of the world gets its infrastructure in order, though some interesting products have suddenly appeared recently for carriers and providers that should be enticing even for us Westerners.



For example, there's a pioneering company out there called Octro that offers technology capable of doing real-time P2P video conference calls via mobile (it's optimized for one-handed operation on Symbian and Windows Mobile devices). Currently, their OctroTalk always-on product keeps you connected with your colleagues and buddies anywhere. It works seamlessly over GPRS, EDGE, CDMA, WiFi and Bluetooth data connections, down-shifting to a low bandwidth codec if necessary. OctroTalk supports GoogleTalk/Jabber, MSN, AIM, ICQ and Yahoo instant messaging. (You can create/join Jabber conference rooms and do Group-Chat/Conferencing.) Your messages can be archived in your Gmail account. A complete VoIP product, you can call upon secure and encrypted connections to GoogleTalk; and you also have access to the PSTN. You can share files with your buddies via automated file transfer (with quick picture messaging), and you can even install OctroTalk for Windows on your desktop and share a folder with OctroTalk running on your mobile handset.

Additionally, Octro's new OctroVideo product specializes in enabling you to stream video directly from your mobile phone using JPEG compression. You have options to configure the frame rate, picture quality, etc. and anyone with a web browser can view what you are streaming. You can place a call using OctroTalk or a regular cell phone and then convert the call into a video conference. There are multiple options to stream video over GPRS/CDMA/3G/WiFi connections. P2P video conferencing is available via use of OctroTalk.

The Octro Video Conferencing Solution is currently available for Symbian and Windows Mobile.

Peer-to-peer video calling and multi-point video conferencing is also now available on mobile phones in the form of Global IP Solutions' VideoEngine Mobile, which runs on the Windows Mobile platform. This technology enables wireless carriers, app developers and mobile handset makers to provide peer-to-peer video calling and multi-point video conferencing on Windows Mobile phones which have a front-facing camera.

The GIPS VideoEngine suite also includes VideoEngine PC, which is a voice and video processing solution optimized for softphone applications on PC platforms, and the VideoEngine PC SDK that enables developers to build sophisticated Unified Communications (UC) applications on SIP-based voice and video processing. The VideoEngine suite is based on advanced techniques that maintain optimal synchronized audio and video by reducing packet jitter and packet loss, as well as compensating for CPU and bandwidth constraints. To be specific, GIPS has partnered with [Marvell Technology](#) to ensure that its media processing software will have the cutting edge mobile phone features found on the Marvell chipset and to highly optimize it for XScale PXA310 devices including the Hewlett-Packard iPAQ series, [Samsung's](#) SGH-i780 and Gigabyte's GSmart MS808.

FMC encompassing voice, video and data can be brought to Small-to-Medium Sized Businesses (SMBs) with [U4EA Technologies'](#) plug-and-play, 802.11n ready, Fusion 300 WLAN Controller, Fusion 50 Access Points



(APs) and Fusion Multi-Service Business Gateway (MSBG). The Fusion 300 supports up to 250 users and 25 APs, and U4EA's Clarion Voice provides literally out-of-the-box support for toll-quality voice and fast, seamless roaming. The U4EA MSBGs can provide an impressive nine QoS (Quality of Service) classes that guarantee wireline bandwidth and control packet loss and delay for VoIP and other mission-critical applications and hosted services. The Fusion 300 WLAN Controller can also be deployed as a stand-alone solution, integrating seamlessly into any SMB LAN.

Recently, U4EA Technologies rolled out its Fusion 300 Wireless LAN Controller and APs at a New Hampshire high school that's using the setup to enable entire classrooms to connect simultaneously to a wireless network. The school did have a wireless system in place previously, but it had sketchy performance and the teachers and IT staff spent a lot of class time trying to resolve performance issues. The new WiFi setup, designed specifically for SMBs, has proven simple, reliable and cost-effective, and – as a result – the school district is now expanding it to other schools within its district.

## Building Blocks

Octasic Inc., of Montreal, Canada, is a major provider of media processing silicon and software solutions for the converged carrier, enterprise and end-point communication equipment markets. They're known for their VoIP DSP (Digital Signal Processor) solutions based on their Opus asynchronous DSP architecture.

James Awad, Octasic's Product Marketing Manager, says, "We supply chips that goes into everything from carrier equipment to enterprise devices. We're at the bottom of the food chain, providing the foundation upon which everyone builds their products and services, such as the DSPs for media gateways. Our contribution to mobile VoIP and video is very

much from a cost perspective. We're in the MIPs race, the race of doing something better than the next guy – faster, cheaper, easier. The biggest thing we do is to enable video services to be available at an affordable price point. Right now our belief is that video isn't taking off not because people don't know how to use it, but because it's just not yet affordable. It doesn't make sense for the providers to roll it out, and when they do, it's too expensive. Our contribution therefore is to offer best-in-class semiconductor solutions, and we really have developed DSP technology that allows us to achieve unparalleled density in terms of power, which can greatly shrink the 'box'. We can deliver solutions that are two or three times less power hungry than our competitors, just in terms of doing video processing, be it transcoding or audio component processing. That makes a big difference for our customers."

"During the summer of 2008 we added video capabilities to our Vocallo DSPs, so designers of enterprise IP communication servers and media gateways can now combine voice and video on the same platform," says Awad. "With integrated voice and video on a single chip, both enterprise communication server makers and core gateway manufacturers can quickly develop advanced video capabilities without spending a lot of money."

## New Forms of Wireless Broadband

Whereas existing 3G and WiFi technologies can handle mobile Voice/VoIP and some data, mobile video will devour sufficient bandwidth to require some bolstering of the telecom infrastructure. Better high capacity wireless backhaul schemes involving a combination of fiber and point-to-point microwave will be needed, and the handsets themselves will see such advanced wireless broadband radio interfaces as WiMAX (soon) and LTE or Long-Term Evolution (2011, maybe).

One dark horse candidate in this department is a wireless service called wMax

(no relation to WiMAX), promoted by a company called xG Technology, Inc. that plans to launch data and modem services in 2009. (They already have FCC approval.) wMax is said to have a signal range of 7.55 miles at 900MHz, compared with 2.3 miles for GSM, 2.46 miles for WiMAX and 2.53 miles for UMTS (3G) when all are run at equivalent average power output.

xG Technology has also developed what they call the xG Flash Signal, which is said to be able to enhance almost any type of wired or wireless communication, including voice, data, and video. xG Technology is currently designing commercial VoIP products based on xG Flash Signal that will offer significant improvements in speed, range, and power savings over existing technologies.

There are a number of strange rumors surrounding the secretive xG Technology company involving a reclusive Swiss billionaire and other things, so it should be interesting to see whether wMax will suddenly explode on the telecom scene and give WiMAX and LTE and run for its money.

## See You Then...

A recent report from NSR (Northern Sky Research), predicts that mobile TV and mobile video services will grow about ten-fold to 566 million users by 2013. In the short term, the iPhone and other smartphones will serve as the platform for the mobile real-time VoIP but, as time goes on, all sorts of gizmos and solutions will appear. **IT**

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

**The following companies were mentioned in this article:**

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[www.u4eatech.com](http://www.u4eatech.com)

**xG Technology**  
[www.xgtechnology.com](http://www.xgtechnology.com)

# VoIP Peering for End-to-End IP Communications

By Richard “Zippy” Grigonis

The world is slowly evolving toward an IP utopia wherein any user using any kind of device anywhere will be able to make multimedia-based, “feature rich” calls to anybody else over fixed-lines, WiFi, cellular, 4G broadband wireless or what-not. End-to-end IP communications bypassing the PSTN is starting to take shape. You can already see its beginnings in the form of Stealth Communications’ Voice Peering Fabric that enables VoIP peering interconnect, allowing one provider to plug into one city location and another carrier to plug into another location in another city, with the VPF providing the link connecting the two cities. VoIP can be done on Layer 2 (carriers connect to a separate private network) or on a layer 5 basis (peering occurs on open networks such as the Internet, with routing and signaling managed by a central provider).



For example, during 2008 Stealth altered the original VPF model which was based on an internationally distributed Layer 2 Ethernet network purpose-built for VoIP traffic. Now, instead of accessing the VPF via the large node sites, smaller and out-of-the-way network operators can access the VPF and purchase services on the VPF trading platform via the public Internet. The trading platform, by the way, is based on Sansay session border controllers (SBCs) which can do automated route matching. Also, Stealth opened up their ENUM and SRV Registries are now open for communities wanting to create sub-registries for new social networking and other community-like applications. A CLEC or MSO can now devise their own ENUM root in the VPF ENUM Registry and permit access via the look-up system to anyone agreeing to pay their set termination rate.

## From VoIP Peering to Voice Peering

Arbinet provides innovative voice and IP solutions to communications companies. They manage business relationships, backoffice operations and call routing for their members who route through Arbinet approximately 2 percent of the world’s international voice traffic to more than 1,300 destinations worldwide. These members include fixed-line, mobile, wholesale and VoIP carriers as well as calling card, ISPs and content providers around the world who buy and sell voice and IP telecom capacity and content.

Arbinet offers Marketplace Services (global exchanges for buying and selling voice minutes capacity); Managed Services

involving pricing, routing, reporting, credit risk and settlement; Query Services including advanced routing services to help increase call quality and reduce costs; and IP Services such as cost-effective solutions for managing ISP supplier relationships, streamlining operations and expanding network connectivity. Their global footprint includes Points of Presence (POPs), in New York, Los Angeles, Miami, London, Frankfurt and Hong Kong, with dedicated sales teams operating in North America, Latin America, Europe, the Middle East, Africa and Asia-Pacific.

Arbinet’s Chief Technology Officer, Steve Heap, says, “VoIP Peering is a term used very loosely in the industry. The first area of VoIP peering is what I call VoIP Interconnect, which is very popular and is increasing everywhere. Let’s say you have two service providers or carriers that want to interconnect with each other and they’ve got two core choices. They can string some circuits up and do a TDM interconnect like everyone used to do, or they can interconnect using VoIP as the technology between themselves. That interconnect between two providers is sometimes called VoIP peering. The reason that people jump on that term is because it’s one carrier talking directly to another one and they think, oh, okay, that’s sort of like peering as it would be in IP terms, so we’ll call it VoIP peering. About 60 percent of Arbinet’s traffic is now VoIP and everyone who is coming to connect to Arbinet these days wants to connect via VoIP, not TDM. Many larger carriers are converting their existing TDM connections to VoIP interconnects as quickly as they can. But





## Introducing the **Small Business VoIP Online Community**

Small business VoIP adoption is growing, largely because of the cost benefits, but the fact is that hosted VoIP services for small business, like Packet8's Virtual Office, provide much more than cost savings. The greater versatility of hosted VoIP system allows businesses to customize their telecommunications packages to meet their unique needs, but without requiring large up-front expenditures for equipment, installation, maintenance, or IT staff. For the latest news and information on VoIP services specifically designed for the small business market, visit the Small Business VoIP community on TMCnet, sponsored by Packet8. Packet8 Virtual Office is an affordable, robust and easy-to-manage phone solution with all the premium PBX features and functionality of a traditional telecom system.

**On the Small Business VoIP Community, you'll find:**

- Free consultations
- Free trials
- Free quotes
- Feature articles
- Case studies
- Technology briefs

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TDM won't disappear immediately, because there are massive deployments of international TDM switches that are working fine and will take years to replace."

"But the second area is really based on the original definition of VoIP peering," says Heap. "That involves the identification, down to the full customer number, of, in effect, the ownership of a customer number, and routing the traffic to the carrier that 'owns' that number at a VoIP level. That's really where VoIP peering came from. The original idea was that you don't actually need carriers at all. The person with a VoIP phone could somehow find out the IP address of some distant IP phone and connect to that phone without any service provider in the middle. So the original scheme was end user-to-end user, but there are all sorts of practical reasons why that won't happen any time soon. But that led us to the next stage, which involved having an originating service provider find the location of the terminating service provider and connecting together after some sort of query against the full customer number. To me, that is the proper definition of VoIP peering."

"The third piece of the jigsaw regards the question of whether VoIP peering termination is free or paid or if there's some sort of commercial deal surrounding the process," says Heap. "That question got lumped into the whole mix and people jumped to all sorts of conclusions about that too. There's not much interest in free peering the present time. Most service providers currently get paid for terminating a call to their customer, which is usually counted as revenue, and nobody in this current economic climate wants to give up revenue. Even though you may incur a cost to terminate your calls with someone else, the idea of giving up revenue is not high on anyone's list at the moment. People want to be paid for calls reaching their customers."

### VoIP Peering or Voice Peering?

Tata Communications is a Tier-1 ISP with worldwide access through many of its TeleGlobe and Tyco Global Network assets. They're also one of the largest wholesale voice providers, having carried about 23 billion international voice minutes in 2007, 11 billion of which were VoIP. Their huge footprint includes TDM and VoIP-based interconnects. They have over 415 directly bilateral relationships with Tier-1 and other providers worldwide, with 600 VoIP-based interconnects.

Michael Corso, Product Manager for Tata's [VoIPLink](#) IP-based interconnect service, says, "The way we look at VoIP peering is simply as Voice peering. The field started out with some VoIP providers linking up together, whether they were campuses or smaller portal-type providers, or small VoIP shops that really wanted to unify themselves and bypass the fixed TDM models, to exchange information between their different users. That's how it started. From a carrier point of view, that model's nice for smaller providers, but for a wholesale provider, we really want to be able to link up end users to each other. So we look at it as Voice peering because

although broadband and native VoIP traffic is definitely a portion of that, ultimately we'd like to be able to link up providers to other providers, whether they be traditional fixed or new mobile providers. That's because if you look at where the natural traffic exchange is, it's definitely going to be over all these converged models out there. Many early adopters of peering were native VoIP-based traffic, but many fixed TDM-based subscribers will want to have access and be able to partner in these different networks."

"Until now, providers looking into peering traditionally have had small routing tables," says Corso. "I can definitely tell you from our experience as a wholesale provider, that we have many broadband customers and we find that, from an international point of view, they may have as few as three to five routing choices. This may be because of limitations in their billing or routing systems or algorithms. One impact of this is that they try to keep the number small because they may simply be forced to because of technology or staffing limitations. After all, to establish an interconnect with another provider, you go through a provisioning process. In the case of VoIP, for the most part it's a virtual interconnect, where one provider configures its equipment, mapping IP addresses, firewalls, access lists and so forth. In the case of a TDM-based connection you must provision local loops and offer circuits and various other things. All of that can become a burden for a small staff, why may have held back voice peering a bit."

"Also, if there are various solutions in the marketplace," says Corso. "Many of the solutions have typically focused on just bridging VoIP or voice networks together through peering. I call that 'on-net', the uniting of one network with another. This is where you see the limitations of multiple route choices. However, we at Tata Communications have focused on becoming more of a 'one-stop shop' so that a provider can connect into us via voice transmission and international services, but as needed they can provide them the ability to peer with other partners that we already have connected into the network. It's more of a hub-type approach where we become that 'center hub' and we can therefore route traffic wherever it needs to go. We can terminate a call to the last mile if possible. If it's a peered mile, then terrific. If not, we'll send it to the ideal supplier who can terminate that call for us. By becoming a one-stop shop, we can better integrate into the providers."

But whether you call it Voice peering or VoIP peering, there's nothing mysterious about it. It's simply the forwarding of calls from one ITSP to another directly using VoIP technology with no detours through the PSTN. ■

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

### The following companies were mentioned in this article:

**Arbinet**  
www.arbinet.com  
**Sansay**  
www.sansay.com

**Stealth Communications**  
www.stealth.net  
**Tata Communications**  
www.tatacommunications.com



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# 2008 Internet Telephony Product of the Year Awards

Welcome to Internet Telephony magazine's annual feature where we highlight the most interesting and innovative products of the previous year, also known as the Product of the Year awards. Each year, the editors of Internet Telephony pore over hundreds of applications submitted over the course of the preceding several months to determine which products and solutions are worth drawing your attention to.

Speaking of the list, in the view of our editorial brain trust, this annual inventory of the year's best and brightest has never been about selecting a single product. It is an impossible task to choose one product across multiple categories and multiple target audiences that should be considered "the best." For example how does one compare an IP PBX with a fixed-mobile convergence solution with an E911 solution with a development toolkit...?

There are too many different categories and classes of product. For us the list has always been about providing our readers with a group of products that merit their consideration. It's that simple. If one of our readers is in the market for a particular IP communications solution, then there will appear among



this list of vendors several providers of such a solution. The purpose of this list is to provide a starting point for individuals seeking solutions that will help them achieve their goals, be it to save money, grow their business, or embrace the hottest telecommunications technology out there.

And so, we present to you the best of 2008. While hardly exhaustive, this list is a great place to begin your search for the solution that will ultimately serve to fill your unique needs. We remind everyone to do their homework, research these companies thoroughly, follow up, and most importantly: Check out those customer references! **IT**

— The Editors

**Aastra Telecom**  
[www.aastratelecom.com](http://www.aastratelecom.com)  
*AastraLink RP*

**AccessLine Communications**  
[www.digitalbusinessphone-system.com](http://www.digitalbusinessphone-system.com)  
*AccessLine Digital Phone System*

**Acredo Technologies, Inc.**  
[www.acredo.us](http://www.acredo.us)  
*Basix*

**ADTRAN, Inc.**  
[www.adtran.com](http://www.adtran.com)  
*n-Command MSP*

**Agito Networks, Inc.**  
[www.agitonetworks.com](http://www.agitonetworks.com)  
*Agito Networks RoamAnywhere Mobility Router v2.0*

**AireSpring**  
[www.airespring.com](http://www.airespring.com)  
*AireSpring Network Long Distance*

**AirMagnet, Inc.**  
[www.airmagnet.com](http://www.airmagnet.com)  
*AirMagnet VoFi Analyzer*

**AnchorPoint**  
[www.anchorpoint.com](http://www.anchorpoint.com)  
*AnchorPoint 6.3*

**Aplicor Inc.**  
[www.aplicor.com](http://www.aplicor.com)  
*Aplicor Enterprise*

**AppTrigger**  
[www.apptrigger.com](http://www.apptrigger.com)  
*Application Session Controller - ServiceExtender*

**Aspect Software**  
[www.aspect.com](http://www.aspect.com)  
*Aspect Unified IP*

**AudioCodes**  
[www.audiocodes.com](http://www.audiocodes.com)  
*Mediant 3000*

**Brekeke Software, Inc.**  
[www.brekeke.com](http://www.brekeke.com)  
*Brekeke PBX Multi-Tenant Edition*

**Brocade Communication Systems**  
[www.brocade.com](http://www.brocade.com)  
*FastIron WS Series*

**Citrix Online**  
[www.citrixonline.com](http://www.citrixonline.com)  
*Citrix GoToMeeting 4.0*

**ClearOne**  
[www.clearone.com](http://www.clearone.com)  
*MAX IP Response Point*

**ClearSight Networks**  
[www.clearsightnet.com](http://www.clearsightnet.com)  
*Network Time Machine (NTM) and Atlas*

**Ifbyphone**  
[www.ifbyphone.com](http://www.ifbyphone.com)  
*IFBYPHON*

**Junction Networks**  
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*OnSIP Hosted PBX*

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[www.voxbone.com](http://www.voxbone.com)  
*iNum*

**CosmoCom**  
[www.cosmocom.com](http://www.cosmocom.com)  
*CosmoCall Universe 5.2*

**Cylogistics**  
[www.cylogistics.com](http://www.cylogistics.com)  
*TrueBill Ver. 3.0*

**Cypress Communications**  
[www.cypresscom.net](http://www.cypresscom.net)  
*C4 IP*

**Dalcon Communication Systems Inc.**  
[www.dalcon.com](http://www.dalcon.com)  
*Dalcon Communications Manager/Healthcare Edition*



**Dialogic Corporation**  
[www.dialogic.com](http://www.dialogic.com)  
*Dialogic Vision CX Video Gateway (formerly NMS)*

**DIGITALK**  
[www.digitalk.com](http://www.digitalk.com)  
*DIGITALK IP Virtual Office*

**Digium**  
[www.digium.com](http://www.digium.com)  
*Digium Switchvox SMB 3. 5*

**DiVitas Networks**  
[www.divitas.com](http://www.divitas.com)  
*DiVitas Mobile Unified Communications Solution*

**Eaton Corporation**  
[www.eaton.com](http://www.eaton.com)  
*Eaton 9130 UPS*

**Enablence**  
[www.enablence.com](http://www.enablence.com)  
*T7-PIM-8984 8-Port ITU G.984 GPON Platform Interface Module*

**Ensim Corporation**  
[www.ensim.com](http://www.ensim.com)  
*Ensim Unify Enterprise, Version 2.5*

**Envision Telephony, Inc.**  
[www.envisioninc.com](http://www.envisioninc.com)  
*Envision Centricity*

**ESCAUX**  
[www.escaux.com](http://www.escaux.com)  
*ESCAUX net.PBX*

**Evangelize Communications**  
[www.evangelize.net](http://www.evangelize.net)  
*SmartVoIP*

**FacetCorp**  
[www.facetcorp.com](http://www.facetcorp.com)  
*FacetPhone*

**Fanfare**  
[www.fanfaresoftware.com](http://www.fanfaresoftware.com)  
*iTest 3.3*

**FaxBack**  
[www.faxback.com](http://www.faxback.com)  
*Net SatisFAXtion*

**FaxCore Inc**  
[www.faxcore.com](http://www.faxcore.com)  
*FaxCore Mini-Appliance Bundle*

**Fonality**  
[www.fonality.com](http://www.fonality.com)  
*HUD 3.0*

**Global IP Solutions**  
[www.gipscorp.com](http://www.gipscorp.com)  
*VideoEngine Mobile*

**Global IP Solutions**  
[www.gipscorp.com](http://www.gipscorp.com)  
*VoiceEngine Mobile for the iPhone*

**GN Netcom**  
[www.jabra.com](http://www.jabra.com)  
*Jabra M5390 Multiuse*

**Grandstream Networks**  
[www.grandstream.com](http://www.grandstream.com)  
*GXW4024*

**Hatteras Networks**  
[www.hatterasnetworks.com](http://www.hatterasnetworks.com)  
*HN4000 EtherFLEX*

**Highdeal**  
[www.highdeal.com](http://www.highdeal.com)  
*Transactive 4.1*

**i2Telecom International, Inc.**  
[www.i2telecom.com](http://www.i2telecom.com)  
*MyGlobalTalk*

**iKnowWare**  
[www.iknowware.com](http://www.iknowware.com)  
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**IneoQuest Technologies**  
[www.ineoquest.com](http://www.ineoquest.com)  
*VeriFrame*

**InsideSales.com**  
[www.insidesales.com](http://www.insidesales.com)  
*PowerDialer for Salesforce.com*

**IntelePeer**  
[www.intelepeer.com](http://www.intelepeer.com)  
*IntelePeer AppworX open communications platform*

**Interactive Intelligence Inc.**  
[www.inin.com](http://www.inin.com)  
*Enterprise Interaction Center (EIC)*

**Intertex Data AB**  
[www.intertexdata.com](http://www.intertexdata.com)  
*Intertex IX78 E-SBC – ADSL modem for SIP Trunking*

**Intuitive Voice Technology**  
[www.intuitivevoice.com](http://www.intuitivevoice.com)  
*Evolution PBX*

**IPitomy Communications LLC**  
[www.ipitomy.com](http://www.ipitomy.com)  
*IPitomy IP PBX Systems and IP550 Telephones Lead the Way*

**ISI Telemanagement Solutions, Inc.**  
[www.isi-info.com](http://www.isi-info.com)  
*Business Intelligence Solutions*

**Ixia**  
[www.ixiacom.com](http://www.ixiacom.com)  
*IxGreen*

**JDSU**  
[www.jdsu.com](http://www.jdsu.com)  
*JDSU NetComplete Home Performance Monitoring (PM)*

**JDSU**  
[www.jdsu.com](http://www.jdsu.com)  
*NetComplete Service Assurance Solution for Wireless Backhaul*

**Kentrox**  
[www.kentrox.com](http://www.kentrox.com)  
*Polled Device Monitor*

**KnoahSoft, Inc**  
[www.knoahsoft.com](http://www.knoahsoft.com)  
*Harmony Suite 2.0*

**LG-Nortel**  
[www.lg-nortel.com](http://www.lg-nortel.com)  
*LG-Nortel IP3870*

**LifeSize Communications**  
[www.lifesize.com](http://www.lifesize.com)  
*LifeSize Room 200*

**Media5**  
[www.mediatrix.com](http://www.mediatrix.com)  
*mediatrix 4100 Series*

**MegaPath, Inc.**  
[www.megapath.com](http://www.megapath.com)  
*Duet*

**MERA Systems**  
[www.mera-systems.com](http://www.mera-systems.com)  
*MERA VoIP Transit Softswitch Pro (MVTs Pro)*

**Merced Systems, Inc.**  
[www.mercedsystems.com](http://www.mercedsystems.com)  
*Merced Systems Enterprise Sales and Service Performance Management Solutions*

**Microsemi PowerDsine**  
[www.microsemi.com/pow-erdsine](http://www.microsemi.com/pow-erdsine)  
*PD7000G Series*

**Mindspeed Technologies, Inc.**  
[www.mindspeed.com](http://www.mindspeed.com)  
*Mindspeed Concerto 300 Series of Carrier Access VoIP processors*

**Mitel**  
[www.mitel.com](http://www.mitel.com)  
*Mitel Communications suite Integrated with Sun Servers*

**Mitel**  
[www.mitel.com](http://www.mitel.com)  
*Mitel Communications suite*

**Motorola, Inc.**  
[www.motorola.com](http://www.motorola.com)  
*Motorola's wi4 WiMAX USBw 100*

**Mu Dynamics, Inc.**  
[www.mudynamics.com](http://www.mudynamics.com)  
*Mu Service Analyzer*

**Multi-Tech Systems, Inc.**  
[www.multitech.com](http://www.multitech.com)  
*MultiVOIP GSM SIP-TO-Cellular Gateway*

**Narus, Inc.**  
<http://narus.com>  
*NarusInsight*

**NEC Unified Solutions Inc.**  
[www.necunified.com](http://www.necunified.com)  
*UNIVERGE SV8100 Communications Server*

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*UNIVERGE SV8500 Communications Server*

**NEI**  
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*SN-2500 R2*

**NET Quintum**  
[www.quintum.com](http://www.quintum.com)  
*Response Point Gateways*

**NetCracker Technology Corporation**  
[www.netcracker.com](http://www.netcracker.com)  
*Pasadena*

**Nextiva**  
[www.nextiva.com](http://www.nextiva.com)  
*Nextiva Connect 360*

**Nortel**  
[www.nortel.com/selfservice](http://www.nortel.com/selfservice)  
*Interactive Communications Portal*

**Nortel**  
[www.nortel.com/bcm450](http://www.nortel.com/bcm450)  
*Business Communications Manager 450*

**Nortel**  
[www.nortel.com](http://www.nortel.com)  
*Nortel Agile Communication Environment*

### Occam Networks

[www.occamnetworks.com](http://www.occamnetworks.com)  
*The Broadband Loop Carrier (BLC)*  
*6012i High Capacity Chassis*

### Octasic Inc.

[www.octasic.com](http://www.octasic.com)  
*Vocallo Video*

### Openet

[www.openet.com](http://www.openet.com)  
*FusionWorks Framework 5.0*

### Pannaway Technologies

[www.pannaway.com](http://www.pannaway.com)  
*BAS-150 (Broadband Access Switch)*

### Paradial

[www.paradial.com](http://www.paradial.com)  
*RealTunnel 3.0*

### Patton Electronics, Co.

[www.patton.com](http://www.patton.com)  
*SmartNode 4961 PRI VoIP IAD with E1*  
*Failover and High-Precision Clock*

### Phone.com

[www.phone.com](http://www.phone.com)  
*Phone.com Virtual Office*

### PhoneFusion

[www.phonefusion.com](http://www.phonefusion.com)  
*PhoneFusion Office Edition*

### Polycom

[www.polycom.com](http://www.polycom.com)  
*Polycom HDX 8006*

### Polycom, Inc.

[www.polycom.com](http://www.polycom.com)  
*Polycom SoundStation IP 7000*

### Pronexus Inc.

[www.pronexus.com](http://www.pronexus.com)  
*VBVoice 5.6 IVR Development ToolKit*

### Protus

[www.protus.com](http://www.protus.com)  
*my1voice*

### Protus

[www.protus.com](http://www.protus.com)  
*MyFax*

### Psytechnics

[www.psytechnics.com](http://www.psytechnics.com)  
*Experience Manager 4.0*

### QUESCOM

[www.quescom.com](http://www.quescom.com)  
*Enterprise One Number*

### RadiSys

[www.radisys.com](http://www.radisys.com)  
*Promentum ATCA-9100 Media*  
*Resource Module*

### RADVISION

[www.radvision.com](http://www.radvision.com)  
*SCOPIA Desktop*

### Radware, Inc.

[www.radware.com](http://www.radware.com)  
*SIP Director*

### Redback Networks

[www.redback.com](http://www.redback.com)  
*SM480*

### Ring Carrier

[www.ringcarrier.com](http://www.ringcarrier.com)  
*Ring Carrier VoIP Hosted End-to-End Solution*

### RingCentral

[www.ringcentral.com](http://www.ringcentral.com)  
*RingCentral*

### SevOne, Inc.

[www.sevone.com](http://www.sevone.com)  
*PAS (Performance Appliance Solution)*

### Shenick Network Systems

[www.shenick.com](http://www.shenick.com)  
*servicEye*

### Shunra Software

[www.shunra.com](http://www.shunra.com)  
*Shunra Virtual Enterprise*

### Siemens Enterprise Communications, Inc.

[www.siemensenterprise.com](http://www.siemensenterprise.com)  
*OpenScape Voice*

### Sigma Systems

[www.sigma-systems.com](http://www.sigma-systems.com)  
*Sigma Hosted Commercial Voice*  
*Service Package*

### SIP Print

[www.sipprint.com](http://www.sipprint.com)  
*SIP Print*

### snom

[www.snom.com](http://www.snom.com)  
*snom 820*

### Spirent Communications

[www.spirent.com](http://www.spirent.com)  
*Spirent TestCenter 3000 Series*

### SR Telecom & Co. S.E.C.

[www.srtelecom.com](http://www.srtelecom.com)  
*SYMMETRY MX Dynamic SIP*  
*Service Control*

### Sumitomo Electric Lightwave - FutureFLEX Air-blown Fiber Division

[www.futureflex.com](http://www.futureflex.com)  
*FutureFLEX Air-blown Fiber Infrastructure*

### Syntellect

[www.syntellect.com](http://www.syntellect.com)  
*Syntellect Communications Portal (SCP)*

### TANDBERG

[www.tandberg.com](http://www.tandberg.com)  
*E20, the Video IP Phone*

### Taqua LLC

[www.taqua.com](http://www.taqua.com)  
*Taqua MobileWorks*

### Tektronix Communications

[www.tek.com/communications](http://www.tek.com/communications)  
*Zoey for Active Assurance*

### TelCentris, Inc.

[www.telcentris.com](http://www.telcentris.com)  
*TelCentris Unified Communications*  
*Service Delivery Platform*

### TelcoBridges

[www.telcobridges.com](http://www.telcobridges.com)  
*TMedia*

### TeleCommunication Systems Inc.

[www.telecomsys.com](http://www.telecomsys.com)  
*VoIP Verify*

### Thinking Phone Networks

[www.thinkingphones.com](http://www.thinkingphones.com)  
*C3 Analytics*

### TOPEX

[www.topex.ro](http://www.topex.ro)  
*TOPEX VoisTel*

### Toshiba America Information Systems, Telecommunication Systems Division

[www.telecom.toshiba.com](http://www.telecom.toshiba.com)  
*Toshiba Strata CIX1200 IP Business*  
*Communication System*

### Verint Witness Actionable Solutions

[www.verint.com](http://www.verint.com)  
*Impact 360 IP Recording*

### Virtual PBX

[www.virtualpbx.com](http://www.virtualpbx.com)  
*Virtual PBX Open VoIP Peering*

### VoIPshield Systems Inc.

[www.voipshield.com](http://www.voipshield.com)  
*VoIPguard*

### Voxeo Corporation

[www.voxeo.com](http://www.voxeo.com)  
*Voxeo Prophecy 9*

### XO Communications

[www.xo.com](http://www.xo.com)  
*XO Anywhere*

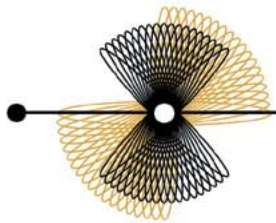
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# Unified Communications in the Enterprise

By Richard “Zippy” Grigonis

Unified Communications (UC) is the descendant of desktop-bound, single in-box unified messaging systems of the 1990s. UC adds to the mix Presence technology that enables you to determine what everyone in your organization is doing (On the phone? In a meeting? Out to lunch? Just plain busy?). UC also is increasingly becoming “Mobile UC”, a vital part of the toolkit of every road warrior who must now survive by foraging the business landscape. Soon social networking tools will also become a major interface to UC communications solutions. (Even now, [Facebook](#) participants can receive emails, view the presence status of others in their network and can gather other pertinent information with a single interface.)



Most heartening is the fact that unified communications vendors are themselves using UC internally. (It's amusing that, in the whole history of *Computer Telephony* magazine (1994-2004), we never actually used computer telephony, aside from a RightFax server and a Repartee voice mail system!)

For example, [Spanlink](#) Communications, led by their forward-looking CEO Brett Shockley, uses their UC technology internally. Eric Lebow, Vice President of Business Transformation at Spanlink, lives 32 miles from work (a 45 minute trip each way). With unified communications, and the ability to tie his telephone, email, voicemail, instant messaging, desktop video, web collaboration, presence and mobile phone together, he is able to be in a full office environment regardless of his location – at the office, home or even that the local Starbucks. By working from home only two days a week, Eric says he's able to reclaim three hours of productivity per week and about \$1,200 per year in gas money. (That's a lot of coffee.)

## UC on the Move

Critical Links of Fairfield, New Jersey, develops and markets edgeBOX, a multi-service gateway they call “the first Unified Communications Appliance” and “Office-in-a-Box” that provides all the vital voice and data communication services required by Small and Medium-Sized Businesses (SMBs), branch offices, remote workers and telecommuters with the same voice, data and IT capabilities in an office

system so as to increase productivity. The edgeBOX can replace at least six separate devices that would normally handle VoIP/ IP-PBX, VPNs, security, NAC, QoS, WiFi access, as well as a fax server, web server, email server, print server and data storage. It's available on hardware platforms that support up to 300 users, with different form factors and a broadband interfaces such as BRI/PRI (T1/E1), FX0/FXS, Ethernet, etc. Critical Links serves SMBs through a global network of VARs, System Integrators, OEMs and Service Providers.

Recently, Critical Links announced edgeMobility, a new set of features for the edgeBOX that enhance its communication and networking capabilities to serve the growing mobile workforce

Critical Links' Abdul Kasim, Vice President of Global Marketing and Business Development, says, “Our new set of features for the edgeBOX specifically target the mobile worker market segment. Increasingly, many employees are working remotely or on the road, especially in the case of SMBs. We've discovered that many of them wear ‘multiple hats’ and are frequently on the road visiting customers, suppliers and so forth. For them, the important thing is to stay connected to the customer, because the customer experience is increasingly becoming an important element. So, we've developed features for the edgeBOX that enable such roving employees to stay connected and be reachable at anytime.”

“edgeMobility includes such features as Follow Me/Find Me, which forwards unanswered calls to another designated number,” says Kasim. “It also supports twinning, which enables both work phones and cell phones to ring simultaneously.”

The edgeMobility feature set also includes capabilities familiar to users of major PBX systems, such as Direct Inward System Access (DISA), a function that allows teleworkers to dial into the office system from a remote location and make calls as if they were present in the office. This allows for use of in-house dialing plans and placing toll calls, among other things. Moreover, voicemail transcription is supported (it can be sent to a designated email address); and Fax2mail enables faxes to be received via email. Email push technology allows mail to be read from Blackberry, [Nokia](#) and other handsets.

A groupware package called edgeExchange can also run on the edgeBOX which can do PDA synchronization, thus allowing mobile employees to share calendars, contacts, resources and tasks. Remote worker VoIP and other traffic (e.g. applications and file sharing) moves via a secure VPN.

Digium is the company that got the open source telephony software ball rolling with their Asterisk IP PBX. Wanting to offer a top-notch customer premise solution with a superb GUI, Digium acquired [Switchvox](#) in 2007, which had taken the open source Asterisk GPL code and had added their own proprietary code.

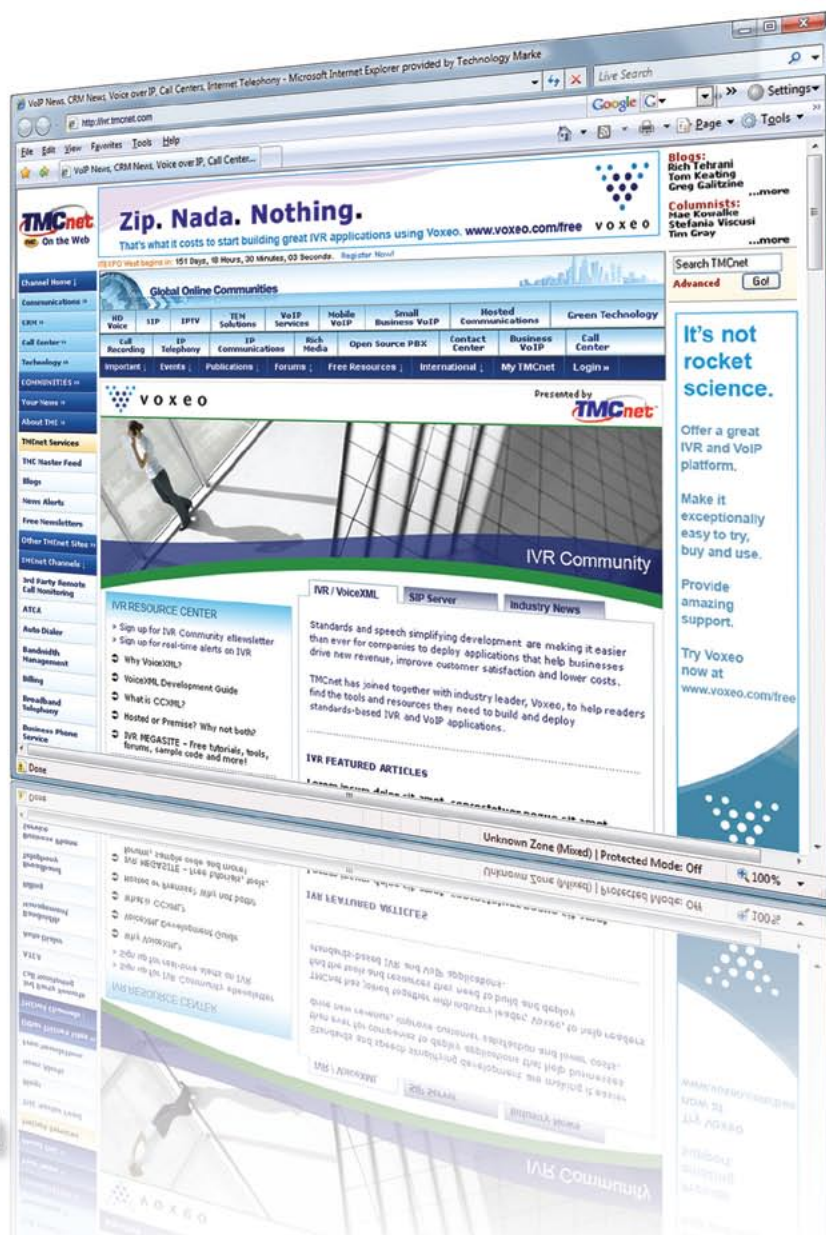


## Introducing the Global IVR Community

Evolving standards and speech technologies are driving the business case for companies to deploy new speech applications to create additional revenue streams, increase customer satisfaction, and trim costs. Voxeo's IVR Global Online Community on TMCnet is the industry destination for tools, information, and resources for building and deploying enhanced IVR and VoIP applications.

- **Hosted and on-premise IVR**
- **VoIP Platforms**
- **Free developer tools**
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Digium's Product Line Director, Tristan Degenhardt, says, "We're releasing a new version of Switchvox that's focused on unified communications, and more specifically on web-aware UC. In the past, we've offered different components of UC — certainly Asterisk can be made to do just about anything, since it is open source. But what we're doing with Switchvox is tying all of that together into a package that is UC-capable and consists of more than just the typical things that you'd think of UC, such as voicemail-to-email, fax and chat. The web-aware component enters the picture when you consider how all of these different communications methods are great, and they all know what you're doing — in the best case scenario your PBX 'knows' that you're on the phone, so it shouldn't be forward calls out to your cell phone. It knows all about your communications components and what they're doing, but with Switchvox you can now pull in data from the Internet. It enables end users to really make better decisions."

"For example, when I see a phone call coming in from my company, the company's name appears on the phone along with the phone number, which is nothing new," says Degenhardt. "But with the Switchvox Switchboard, I also get the web-aware component, which can stick a pin on a map, thus showing me where they're calling me from, and it pops up data from our CRM database about who they are, and it notifies me that we had a call scheduled at this time. I can also see any other data that might be pulled out of the system. For example, when our tech support people get a call they may see completely different kinds of notes displayed, with reminders and so forth. So it can pull in data from outside of the internal system, from Google Maps, say, or Google itself. Or if you're running a call center and you need to immediately do a credit check automatically, it can do that too. It's about all of those things you would be frantically doing in the background if you could while taking a call from a person whom you're attempting to identify and figure out how to best help them. So we tend to categorize this as a web-aware communications solution, not just a typical phone solution. It resembles a sort of mash-up middleware methodology. The API is simple — it takes only a few minutes or even less for me to add a capability so that the phone system

can, say, Google your caller ID name automatically when you call me."

### Just Like Being There

Unified communications relies on broadband, and end-to-end broadband connections can support high fidelity, "HD Audio" audio codecs. Companies such as AudioCodes — whose wideband audio VoIPerfectHD encoder as we went to press is being considered by Microsoft for use in the Office Communicator — will be releasing products in early 2009, many ending up in the audio components of UC suites.

Alan Percy, Director of Market Development for AudioCodes, says, "The time is right for HD VoIP. Due to the growing penetration of IP in both enterprise and consumer markets, the foundation is now in place to operate in an all-IP environment, allowing the use of HD VoIP to dramatically improve the voice quality. HD VoIP delivers dramatically improved quality because these codecs increase the sample rate from 8 kHz used in the PSTN to 16 kHz. The side effect of increased sampling is that much more of the high and low frequencies in human speech are captured and transmitted to the listener. You can hear the difference between 'Fifty' and 'Fifteen' on an HD VoIP call, where they are very hard to tell apart on a standard PSTN narrow-band call."

"The AudioCodes HD VoIP initiative is based on industry standards that include SIP and an array of standard voice coding formats including G.722, G.722.2, G.729.1, G.711.1 and selected proprietary coders including Microsoft's Real Time Audio [RTA]," says Percy. "These standards are in line with other manufacturers that make IP phones, tele-presence systems and software applications. For HD to work, it must be based on standards that all the manufacturers agree upon. No sense starting another HD-DVD / Blu-Ray war."

"We believe enterprises will be quick to adopt HD VoIP within their networks as Microsoft Office Communicator 2007 penetrates the market," says Percy. "OCS and its RTA voice coder give users an opportunity to experience HD at the desktop."

"At the same time, we think HD VoIP will gain early adoption in the smaller, more

agile service provider space, allowing them to differentiate their services from the 'big guys'," says Percy. "Up until now, all the legacy and VoIP service providers have delivered virtually the same voice quality and therefore have had to differentiate their services in areas other than the actual product you actually buy — voice communications. Most of the differentiation today is accomplished with billing tricks like 'Friends and Family' billing or additional service like three-way calling or voice mail. With HD VoIP, service providers can finally deliver a superior product that customers can hear the difference and would be willing to pay extra to use."

"Based on the initial feedback from our partners and our experience inside AudioCodes, once you hear it, you'll never go back," beams Percy.

### The Mercy of Quality

Adopting such high quality sound codecs and combining different forms of bandwidth-hungry real-time media on hybrid networks can lead to concerns over Quality of Service (QoS) and the more ineffable, subjective Quality of Experience (QoE) — a term championed by [Psytechnics](#), the master provider of software solutions for voice and video performance management in IP communications applications. Both service providers and Enterprises use Psytechnics' Experience Manager solution to augment conventional data and IP network management applications, by monitoring, managing and generally improving IP telephony, video and UC in both fixed and mobile environments. The Experience Manager can deliver specific performance and diagnostic visibility on a per user, per call basis, measuring and diagnosing the actual user experience. It identifies specific issues that many other solutions can't detect, such as echo, noise and distortion. Experience Manager also aggregates user and quality metrics for SLA compliance reporting and trending.

Psytechnics' Vice President of Marketing, Joe Frost, says, "In November 2008 we announced our most recent major release, which can handle video conferencing performance management too. We've been tracking the evolution the UC industry. There's much debate about where on the road many enterprises are



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in terms of unified communications. Almost all of them start on their journey to UC by installing IP telephony. They then tend to overlay applications on top of that or integrate IP telephony into other applications as they evolve towards full-blown UC. Depending on who you talk to or whatever survey you read, the next major application to be deployed following VoIP is Presence or unified messaging. Both are interdependent and there's not too much difference between the two. Most of the larger enterprises are still having problems coping with being able to manage larger deploy-

ments of just the VoIP side of UC. That's great for us because fixing that is our business. But it is fair to say that most large enterprises and most managed service providers have recognized that they have a hole in their arsenal of tools in terms of being able to have a good level of visibility on how any given application is performing and how well a user is making use of the application, which is his or her application 'experience'. Existing tools are too inward-looking and just focus on QoS in the internal infrastructure. Fortunately, we offer a more expansive product." **IT**

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

#### The following companies were mentioned in this article:

**AudioCodes**  
www.audiocodes.com

**Critical Links**  
www.critical-links.com

**Digium**  
www.digium.com

**Psytechnics**  
www.psytechnics.com

**Spanlink Communications**  
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# Obama, Economy to Impact IP Communications

By Greg Galitzine

Over the course of several weeks at the tail end of 2008, I conducted a series of interviews with industry leaders, asking them a number of questions regarding the macro economy as well as the potential impact a new administration might have on the communications industry.

The executives I interviewed all shared a positive, yet realistically cautious outlook on 2009. With the uncertain nature of the economy and limited visibility deep into the coming year they nevertheless maintain a positive point of view, driven in part by the Obama administration's stated goals of pursuing a more prevalent "green policy" than previous administrations.

For example, [Teliris](#)' CEO Marc Trachtenberg believes that interest in telepresence technology is increasing as companies struggle to reduce expenses in these challenging economic times.

When asked about the current economy and what that means for technologies like telepresence and for his company's business specifically, Trachtenberg replied, "...[companies] are looking to not only survive these economic times, but also to grow their business. [Telepresence](#) gives them the tools to accomplish these objectives. It's interesting that in recent months, Teliris has seen a 30 percent increase in both usage and participants for its current customers. Additionally, we have also experienced an increase in inquiries as companies quickly realize that they must find long-term avenues to accomplish their goals and still reduce expenses."

[Polycom](#)'s Chalan Aras, the vice president of marketing for the company's Voice Communications Solutions division also sees an uptick in interest in and adoption of collaboration tools.

Says Aras, "Due to what many are calling a 'perfect storm,' consisting of technology, business, and socio-economic drivers, there has been significant momentum for the adoption of key collaboration technologies tailored to the way people want to work, enhance overall productivity, and help to improve/streamline communications. For example, we've seen increased uptake of both our visual communications."

For companies like Polycom and Teliris, the changing of the guard in Washington, D.C. portends positive change inasmuch as the incoming Obama administration has stated its desire to speed up the greening of both the public and private sector, and the collaboration technologies that these companies provide will likely be in high demand.

According to Trachtenberg, "the new administration promises new programs to incent businesses to reduce their carbon emissions. Telepresence is positioned to help companies achieve this worthwhile goal while also reducing expenses."

Aras too believes that by committing to modernizing communication infrastructure, encouraging more rapid broadband de-

ployment, and supporting green initiatives, the new administration will stimulate the adoption of communication solutions designed to enhance collaboration, improve efficiency, and reduce carbon emissions.

"In particular," he says, "we see potential for visual communication solutions like telepresence to change how government agencies operate, making them more efficient, effective and environmentally friendly. The attention to healthcare costs will compel the administration to encourage improved operating efficiencies in medical facilities and the like."

Jeff Cavins, President and CEO of [CallWave](#) believes the greening of America will impact the business environment in the U.S. in a way that companies pushing web-based collaboration tools will be in a position to benefit.

"Telecommuting will certainly be a big part of the push toward reaching energy efficiency and sustainability, and all businesses will be asked to do their part. That said, the communications industry, and IP communications in particular, will have to effectively handle rapidly growing communication demands and increased use," said Cavins. "President-Elect Obama has already stated that he is a supporter of mobile and remote workers; this further emphasizes the need for mobile conferencing and collaboration solutions that can be put in place quickly with reasonable cost."

However, Danny Windham, CEO of Digium, struck a more sober tone with regard to his view of what the incoming administration might mean to telecom.

"I suspect in the first couple of years the administration will be preoccupied with bigger issues such as the ailing economy and the war in Iraq," Windham said, "and that little will be done that will directly impact the communications industry. However, with the growing sentiment in Washington that government involvement is necessary to maintain regulation in the free market system, I fear that the policy pendulum will swing too far to the side of regulation — possibly impacting past decisions regarding deregulation of our industry and protection of Internet-based service offerings."

Windham is intrigued by the opportunities that the coming year may bring, as enterprises come to grips with the financial situation and begin to move ahead — ever so cautiously — to make the purchases they need to remain competitive.

"In the short term purchasing patterns are frozen — mostly out of fear for what may happen in the future," Windham said. "As the uncertainty wanes and the economy begins to recover, a new economic conservatism will drive buying behavior. Organizations will be forced to do more with less — and will become more receptive to lower cost ways of doing business. Premium branded offerings will suffer in the process."

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