Skype **in the Enterprise** Pg. 66

IPContact Centers
Reach Out

Telecom **Expense Management**
Pg. 32

VoIP Testing - **Serious Business**
Pg. 62

Delivering Reliable **QOS**
Pg. 44

Aspect Software Brings Unified Communications to Contact Centers

The first thing I learned when I entered the computer telephony field in 1994 was that the principal way the industry made money was by building call centers. And the acknowledged masters of mission-critical call center technology were the folks over at Aspect (News - Alert) Telecommunications in San Jose, California, now called Aspect Software.

Founded in 1985, Aspect first attracted attention to itself with its superlative Automatic Call Distribution system, upon which they built successive generations of sophisticated, feature-laden communications systems for the world's blue-chip call centers. Around the time I first encountered them, Aspect CallCenter Release 5 was out and Release 6 was in the works, a single-switch solution for all sorts of call operations. Even then it was capable of handling up to 100,000 busy hour calls, along with the inbound and outbound processing of calls, faxes, and email, sophisticated IVR and voice messaging and software agents to provide expanded resources and process automation, the ability to network multiple Aspect CallCenters and operate them as a single site and support for remote clusters of agents and call center personnel working at home. (And oh yes, the company had cool "Aspect Teal" furniture – their corporate color at the time.)

And now, Aspect Software, Inc., the world's largest company solely focused on the contact center, has announced that it's bringing today's hottest communications concept, Unified Communications (News - Alert) (UC), to the call center, in the form of Aspect's all-in-one, IT-ready Aspect Unified IP (its comprehensive SIP-based VoIP unified contact center solution) and their PerformanceEdge contact center optimization suite. Aspect is also going on a campaign to educate the market on the critical role the contact center must play in the development of an organization's overall UC strategy.

Their new approach takes into account the fact that 10 percent of all customer interactions must be taken outside the traditional boundaries of the contact center and into the enterprise to be properly addressed. That means that somebody has to develop a way so that call center agents can determine which outside expert or knowledge worker is best able to help resolve a customer call and boost first-call resolution, then figure out if they are available for consultation and how to reach them in a seamless manner using a particular favored communications device. Moreover, someone also has to develop a way to record those calls for quality of service and provide reports to track how well the whole process is working.

As it happens, the "somebody" who developed all of this functionality is Aspect Software.

Aspect will release new versions of Aspect Unified IP and PerformanceEdge to deliver interoperability with UC software products to enhance collaboration between the enterprise and the contact center. Subsequent Aspect Unified IP releases will enable organizations to route interactions to enterprise experts based on presence and willingness, generate enterprise-level reports of these interactions, and utilize workforce management to forecast expert demand.

And as we went to press, Microsoft (News - Alert) announced that it's making an equity investment in Aspect Software as part of a global strategic alliance. Aspect will ensure that its IP contact center solution interoperates with Microsoft's platform for unified communications.

And Aspect Software is showing us the way, not just with their products but with marketing campaigns, its "Contact Center: Unplugged" blog, an updated website, and educational tools like white papers, web seminars and training. For more information, visit www.aspectcometogether.com. **IT**

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

Microsoft's Call Center Push

There is a level of excitement in the call center space I haven't witnessed since VoIP began transforming the call center into the contact center. The latest revolution to come to contact centers is that of unified communications (UC). In this issue you'll read about how Aspect (News - Alert) has introduced a UC platform enabling call centers to increase service, sales and first call resolution levels.

Just a few days after I first blogged about this, Microsoft (News - Alert) decided to invest in Aspect. Moreover, the two companies are collaborating on a suite of contact center solutions integrating the best of Microsoft OCS and Aspect's UC solutions.

Mike Sheridan, SVP of Strategy for Aspect and Microsoft's Clint Patterson, Director of PR for Unified Communications (News - Alert), told me more about this agreement between the operating system and contact center software leaders. The duo believe that the synergies afforded by this collaboration will be both great and transformational. They see peoples' lives improving because of better call center service levels.

While on the surface it is easy to dismiss such comments as PR speak, one of the most frustrating experiences many of us deal with on a regular basis is communication with rock bottom contact center agents who are still digging. Even an improvement of a few percentage points will likely make our lives a bit better.

The two companies are in a five-year agreement which encompasses a collaborative roadmap between Aspect Unified IP and OCS. Microsoft will help improve the UC readiness of Aspect solutions and in addition will support sales and systems integration efforts which will include an SI practice whose goal it will to ensure end-to-end UC for contact centers. There are also significant go-to-market initiatives as part of this agreement such as PR, marketing and distribution of customer success stories.

Some of our discussion focused on CEBP and how call centers seem to be ideally suited to such integration. In addition Sheridan was quick to point out the synergies between presence in the contact center and the rest of an organization.

Over the next few years we can expect closer ties between the companies' products and by 2010 we can look forward to Aspect solutions which fully leverage the OCS voice media server, allowing the full conferencing and communications facilities of this server to come into play.

The installed base of Aspect customers is just so vast that this agreement should pay back both companies for many years to come. Of course this news puts competitive pressure on Cisco (News - Alert), Avaya and Nortel. Now Aspect has a relationship which gives the company as much clout as Cisco and it also has a suite of software solutions which are more elaborate than most of the major enterprise communications companies.

Before I leave you, the most important part of this article may just be that Aspect will be using Microsoft's telephony solutions in a few years. If Microsoft's solutions are good enough for contact centers they are likely good enough for any enterprise application. This may not be great news for some of the PBX (News - Alert) players in the market.

Grandstream's Grand GXE502X

Many of us know Grandstream for their IP Phones which offer great value as well as an assortment of analog gateways, ATAs, videophones, etc. Recently they've branched out into the IP-PBX space, creating a simple-looking device dubbed the GXE502X which can support up to 100 extensions and over 50 simultaneous calls.

The box has many features and is surprisingly robust. For example, there's a built-in fax server with print-to-fax capability that can convert faxes to PDFs and e-mail them. Furthermore, there is enough memory onboard (512 MB) to store 150 hours of voicemail, 10,000 pages of fax and four hours of video mail. There is an auto-attendant, NAT traversal, PSTN failover, video capability, single-button SIP trunk provisioning (with select service providers), unified messaging, and four conference bridges which allow up to 20 participants in total — yes, you could hold a single 20-person conference call.

There's also call center support with skills-based routing, busy level and other features. Expect integration with CRM packages and MS Outlook/OCS before the end of 2008. Video voice-mail is also under development.

Amazingly, this device's price is under $550. I'm itching to see this PBX in action.

GoTo:
GoTo:
Table of Contents • Ad Index

Contents

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

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

IBM Sees 2008 as Banner Year for Unified Communications and Collaboration

The speed of business is accelerating, which creates a pressing need for organizations to shield users from complexity, while optimizing and extending the value of IT and telephony investments. Adam Gartenberg, offering manager for the company's unified communications and collaboration solutions, shares some insight into what IBM is doing in this space.

www.tmcnet.com/1761.1

Aspect Brings Unified Communications to the Contact Center

Aspect's unified communications solutions bridge the divide between the contact center and the rest of the organization in a way that allows every person in an organization to become an integral part of the contact center in a manner that maximizes efficiency, customer service and sales levels.

www.tmcnet.com/1762.1

CRM Is NOT 'One Size Fits All'

Jason Rushforth, Global Vice President of Financial Services for CDC Software speaks with TMC president Rich Tehrani about the direction the company is headed in the future and the trends that are currently driving the financial services industry.

www.tmcnet.com/1763.1

Speakeasy Goes Off Net with Broadband Services

Speakeasy is not changing its business strategy. It still focuses on smaller businesses that need basic voice and data. But it has discovered the same issue larger providers experience when selling services to larger enterprises: there are headquarters sites and then other locations to support, some of them the "one user" sort.

www.tmcnet.com/1764.1

Tech Data Makes SME IP Communications Move

Tech Data Corporation now offers its reseller partners — especially Cisco shops — a comprehensive suite of hosted IP communications services provided in partnership with Cbeyond, Telovations and XO Communications.

www.tmcnet.com/1765.1

TMC's Whitepapers of the Month

Visit TMCnet's Whitepaper Library (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.

Level The Playing Field With Business VoIP

At Speakeasy, our whole business is helping small businesses. Speakeasy Business VoIP works harder and smarter than a traditional phone system to meet your unique needs. It's a complete solution that includes your choice of business class connectivity, employee calling plans, long distance options, and phones. We designed our Hosted PBX solution to give you unprecedented power and flexibility with significant cost savings – and we stand behind our service with the kind of customer support you only dreamed was possible until now.

www.tmcnet.com/1767.1

Migrating Your Messaging System

When it comes to migrating from your current Octel, Centigram or other end-of-life voicemail-only system to an updated Unified Messaging system, the top priority must be maintaining your business continuity. It's not a question of IF, but WHEN your voicemail system gives out. This guide identifies the key transitional issues you must know.

www.tmcnet.com/1768.1

Enhancing VoIP With Voice Peering

From the invention of the telegraph to the emergence of the Internet, the world has evolved and reinvented itself over and again. Technology has always created efficiencies and opportunities. Despite skepticism from some, history shows that every time there was a change for the better, investors and the public realized and followed. The latest trend in the technology world is voice peering, whether between carriers, enterprises or anyone joining to form this new community. Explore how Voice Peering can help lower operating expenses, simplify network architecture and increase revenues.

www.tmcnet.com/1769.1
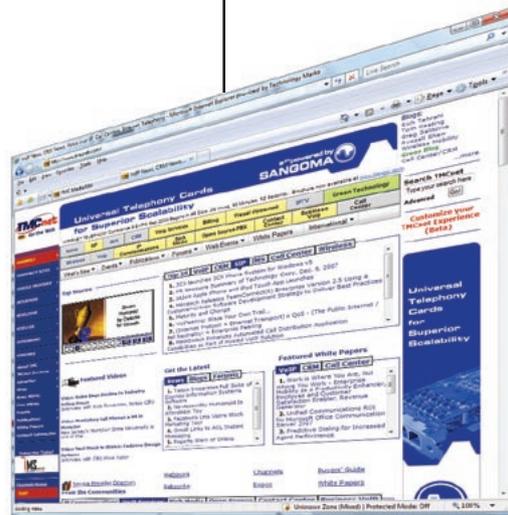
This Month's Featured Channels

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Bandwidth Management

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Contents

GoTo: GoTo:
Table of Contents • Ad Index

By: Brough Turner

Service Creation — Traditional Telecom Still Doesn't Get It

In the late 1980s and through the 1990s the telecom industry defined and then adopted standards for the "Intelligent Network" (IN). The objective was to make it easy to create and deploy new applications and new services. More recently the industry has defined various next generation networks, most notably the IP Multimedia System (IMS). Besides convergence economies (all services on IP), the objective is to facilitate the rapid development and deployment of new applications and new services. Sound familiar? Unfortunately, it's not going to work any better the second time around.

Mind you, the Intelligent Network was not a failure. While it didn't foster a zillion, or even a hundred, new applications it did support massive scaling of few applications, for example, "Freephone" service (800 numbers), roaming (the basis for mobile telephony), voicemail and prepaid.

The first problem is business models. Intelligent Network functionality is service-affecting and therefore carefully controlled. Outside of a few large equipment suppliers, developers don't get access to the IN. As a result, most new services are invented at the edge. For example, voicemail originated as an enterprise application and was only integrated into the network many years later. Even prepaid phone service was implemented from the edge and only integrated into the IN over a period of years.

IMS is following exactly the same path. Again, the network-based SIP application servers that define IMS call flows are critical to basic telephony. As a result, no operator lets third-party developers run applications on their IMS core. Even worse, most operators maintain a walled garden for data access. This means you can't get IP connectivity without a special business relationship. At least with the IN you could get access at the edge (via PSTN phone numbers). With IMS, you can't even count on access to the edge of the operator's IP network.

The second problem is service creation software. Unfortunately, for both the IN and for IMS, the standards focus on basic call control and media flows; i.e., on the plumbing. There are no IMS standards for software APIs or software development environments. Typically, each major equipment provider has a set of service creation tools, but they differ from vendor to vendor.

So what's the most likely outcome? Like the intelligent network, IMS will be used to deploy and massively scale a few applications over the next decade or so, but for innovation, we will have to look to the open Internet where anyone and everyone gets to experiment with their idea of a great new service. **IT**

Brough Turner is Senior VP of Technology, CTO and Co-Founder of NMS Communications (www.nmscommunications.com).

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By: Michael Stanford

What is Enterprise FMC?

The term "Fixed Mobile Convergence ([News](#) - [Alert](#))" (FMC) is clearly defined in the carrier world. It means seamless transition of calls in progress between cellular and WiFi connections on a dual-mode mobile phone. The technologies used are UMA (Kineto's Unlicenced Mobile Access) or the VCC (Voice Call Continuity) part of the IMS (IP Multimedia Subsystem ([News](#) - [Alert](#))) specification. A natural side effect of carrier FMC is that the phone has a single phone number spanning both the cellular and WiFi ([News](#) - [Alert](#)) networks. Carrier FMC also has data session continuity to complement the voice session continuity, but the defining characteristic of carrier FMC remains seamless session continuity between the cellular network and WiFi through the Internet.

One might think that Enterprise FMC would be as clearly defined, but it's not. For years vendors without seamless session continuity solutions have used the term "Enterprise FMC" for various other capabilities instead. This means that when you hear the term "Enterprise FMC," you need to drill down a little to find out what is actually being talked about. There are three main capabilities that have been described as Enterprise FMC:

- PBX ([News](#) - [Alert](#)) Mobility extends the features and functionality of the enterprise PBX out to mobile phones, making them behave like PBX deskphones, but over the cellular network.

- Device Handoff is session continuity over multiple devices, so a single voice session might start on a cell phone and transition to a PBX phone or vice versa. These transitions are not "seamless," since they require the user to press a button or make a menu choice.

- VCC (just like in the carrier world) is session continuity on a single device (a dual-mode phone) over multiple network connections, so a single voice session can start on the cellular network and automatically transition to a WiFi connection or vice versa.

Some PBX Mobility products use dual mode phones, but still fall short of VCC. Like VCC solutions, they have a user interface that looks and works the same for cellular calls and WiFi calls, but the WiFi-cellular handoff isn't automatic; like Device Handoff solutions, the user must transfer the call manually.

In addition to requiring dual-mode phones, VCC requires a device that embodies the call continuity control function. This is the server that anchors a call, seamlessly routing it over the WiFi connection or the cellular connection as needed. The location of this device is a defining difference between Enterprise FMC and consumer FMC. In all implementations of consumer FMC, this device is in the carrier network. In Enterprise FMC this device is on the customer premises, like the PBX. **IT**

Michael Stanford has been an entrepreneur and strategist in Voice-over-IP for over a decade.
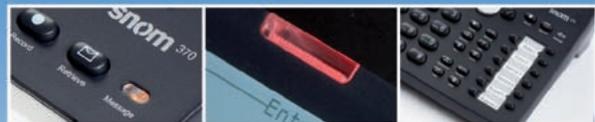
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By: Tony Rybczynski

UC Where You're Going

Just when most enterprises have started to deploy IP telephony systems, unified communications (UC) has become all the buzz. As Steve Ballmer, the CEO of Microsoft ([News](#) - [Alert](#)) said, "it [UC] means everything and it means nothing... If you do a demo, people say, 'I get it, I want that'."

So if you've seen it, you probably want it, but where should you start?

You Have Written Your Last IP Telephony RFP: The advantages of IP Telephony are clear: the economics of network convergence, plug-and-play telephony, business agility and new clients. Going forward, think unified communications, not just IP Telephony, to ensure that there is a clear path, from what you buy today and where you may want to be tomorrow. This includes addressing the needs to provide tight integration between UC and email, calendaring, directories and generally desktop applications, which for the majority of people means Microsoft or IBM ([News](#) - [Alert](#)).

Mobility and UC Are A Marriage Made in Heaven: The roles of many users include a need to stay connected anytime, anywhere. It's all about minimizing the 'time to X', where X is closure with a customer, project decision or problem resolution. Many enterprises recognize that equipping users with UC clients delivers considerably more collaboration value via telephony, IM, presence, collaboration and application sharing, than just having your desktop phone logically with you in the form of a soft client for your laptop.

UC-enable Your Contact Center: Superior more engaging customer service is a strategic imperative for many enterprises, and governments at all levels. Often the key metric is revenues and/or services per customer, achieved through up-selling and cross-selling of products and solutions. Convergence ([News](#) - [Alert](#)) has made it easier to distribute agents anywhere, to leverage UC to improve management across the contact center and to extend the virtual contact centers to experts across the enterprise. One financial institution has deployed multi-media kiosks working into UC-enabled contact centers, to extend the reach of its financial services.

Help Your Distributed Team Collaborate Better: Contact centers represent but one, very important, set of employees that need to collaborate. Other groups include the executive team, field sales and support, and IT itself. The key is to identify distributed groups of employees who work together on a business-impacting time-sensitive common goal, the acceleration of which would lower cost, close more business or shorten delivery intervals.

Do UC the future? Addressing the short-term opportunities identified above can help you leverage unified communications technologies for business advantage. **IT**

Tony Rybczynski is Director of Strategic Enterprise Technologies at Nortel. He has over 20 years experience in the application of packet network technology. For more information, please visit www.nortel.com.

By: Jeff Hudgins

An ATCA "Stateless Server" Update?

In 2007 we explored what was happening in the Advanced TCA (ATCA) storage arena and some of the potential benefits of introducing iSCSI into this architecture. Looking at the upcoming product release of the Astute Networks Caspian blade solution, the time for a stateless ATCA server has arrived.

An ideal way to build a "stateless" ACTA server solution is by combining an Alliance A-13000 platform solution and the Astute Networks' Caspian 10Gb iSCSI Storage Blades with remote iSCSI boot. The stateless server is a simple concept. On a stateless server there are zero disk or flash drives that hold the "state" (OS, Applications, Data) of the server. Upon boot up, the state of the server is loaded on the server from some centralized or remote source. This enables the server to be dynamically allocated without the need to re-build applications, Operating Systems or migrate required data.

Astute's Caspian Storage Blade is a 10Gb iSCSI storage solution for ATCA. It is designed to provide remote boot services for diskless and stateless server environments. Caspian's remote boot support allows NEP and Telcos to centralize their storage to support all servers. They can now store a single set of OS boot images and applications files that can be shared over all servers in the chassis. Centralizing the storage reduces management overhead, capital cost, power consumption and improves recovery time, server deployment time and systems availability of DAS.

Final Score

The stateless server concept will radically improve the overall solution by reducing the time to repurpose servers and eliminating the need to migrate data. Once you throw in the lower acquisition cost for the storage, this new disruptive technology has a bright future. **IT**

Alliance A-13000 with Caspian Storage Blades

iSCSI Storage Pool
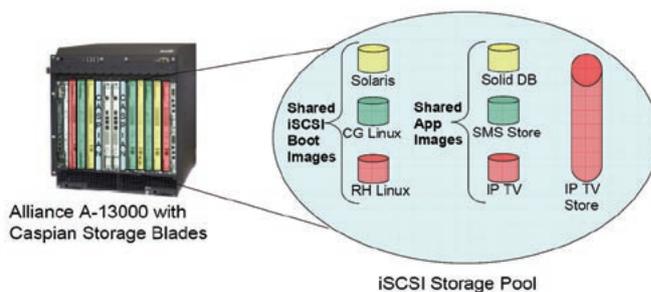
5 Steps to iSCSI Boot
- Create Boot & Applications Images on the Caspian
- Change boot source in BIOS from local to remote
- Assign ATCA Blades to their boot images
- iSCSI Boot Loads the OS image to the state-less server memory
- Launch Application and run as normal

Jeff Hudgins is VP of Engineering at NEI (www.nei.com).

GoTo: GoTo:
Table of Contents • Ad Index

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By: Hunter Newby

VoIPeering – What is a Call Center Anyway?

The PSTN, what's that? Wasn't the last big news report about the PSTN proclaiming its death? The problem for "voice" as a revenue-generating service and a stand-alone business is that it got sucked in to the black hole with the PSTN when IP hit the scene. I suppose voice needs a (better) public relations firm. It really needs to distance itself from the ancient circuit-switching technology. Ironic isn't it that voice needs to add distance in order for it to improve its position. This is clearly the effect of the "gravitational pull" from the massive density of IP and all of its benefits.

Call centers as a function of a larger corporation do not get the attention within the company that the main product or service that they support do. This is natural. Separately, call centers that are stand-alone businesses that provide the labor and software interfaces to deal with other companies' needs and issues see the people, technology and networks that support the business as primary concerns. This is due to the fact that it is their main focus. As a result they are usually better equipped and operate at a better cost base than companies that try to do it themselves. This is one of the key motivators for outsourcing.

Call centers, also sometimes referred to as contact centers, provide support for many types of business that we all interface with almost every day. Those businesses include credit card companies, airlines, computers and software, package delivery, hotels, car rental and entertainment just to name a few. All of these business types are keys to the overall economy and their smooth operation is critical.

Most people, when they hear the term call center, imagine something gloomy or just get a negative feeling in general as it is not a hot and flashy business to be in, really. They're all just big open rooms with cubes, computer terminals and phones, right? Similar to the PSTN, maybe this business needs a PR firm. The truth is that without them the hot and flashy stuff, like the Internet itself, wouldn't run so well. Beyond that there is a real opportunity to not only give the entire industry a makeover, but to take the next big step in harnessing some of the very technology that these centers support. An IP Voice Grid linking the processing power of multiple call center resources together would produce significant savings and create new revenue sources for all involved. **IT**

Hunter Newby is Chief Strategy Officer for telx. For more information, please visit the company online at www.telx.com.

By: Max Schroeder

Reseller Blueprint for Success

Featured Reseller: CiBan LLC (www.ciban.com) CEO and Founder Paul Banco

CiBan specializes in delivering customized technology solutions to professional firms, service groups, food services organizations, trucking companies and government accounts. Although this may appear a very broad selection, CiBan's success is linked to segments within markets. As Paul Banco states, "Our success is to focus on technology segments needed by these industries. For example, CiBan designs VoIP backbones and fault tolerant architectures. We also work closely with other resellers such as Hytec Telephone, which is Inter-Tel's [now Mitel's ([News](#) - [Alert](#))] largest New Jersey reseller".

A few years back I visited one of CiBan's accounts, Neutrik USA Inc. and I was very impressed with the infrastructure design. It was mission critical for Neutrik to ensure the continuous flow of orders via phone and fax. The design involved the replacement of their legacy phone system with VoIP technology, thus providing mobility and centralized communications. Since redundancy was critical, CiBan architected a fault tolerant, high-availability infrastructure utilizing Microsoft ([News](#) - [Alert](#)) Clustering for the mission critical servers and a fully redundant Layer 3 backbone. Critical servers supported were SQL and all electronic communication servers including the fax servers that process 90 percent of their orders.

Recently, I met with Paul and asked him how the Neutrik site had evolved to keep pace with the latest technologies. Paul stated, "Although our original architecture proved to be a very reliable solution to meet critical needs, their needs continued to grow as did the cost of maintaining such a redundant and high-availability solution, forcing the team to look at other alternatives."

CiBan's recommendation was to migrate Neutrik to VMware. This was based on a number of reasons including the consolidation of the server and desktop environments. Neutrik still utilizes clustering but from within VMware. VMware has a feature that enables the client to achieve both high availability and disaster recovery plus VMware allows them to be more flexible in the server deployment. In addition, the total cost of ownership was dramatically reduced.

CiBan is an excellent example of a successful selling organization that combines a high-degree of technical expertise plus protection of their customer base by focusing on:

1, The customer's bottom line.
2. The critical need — fault tolerant communications.
3. Utilization of service providers such as MXSense for email archiving and eVAULT for offsite storage to enhance the customer experience.

Impressively, it's a true win/win situation where the customer is better protected, has lowered their costs and CiBan has continued to sell additional products and services. **IT**

Max Schroeder is the Sr. Vice President of FaxCore, Inc. (www.faxcore.com)

GoTo:
Table of Contents • **Ad Index**

GoTo:

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By: Rich Tehrani & Max Schroeder

Continuity Planning 101 — A Continuing Educational Series

The DPCF educational series has always stressed using industry experts as a critical component for developing a business continuity plan. The addition of OSHA, EPA, HIPAA and Sarbanes-Oxley means that organizations are now held to stricter compliance and regulatory requirements which only adds to the complexity of the mix. Today, issues left unaddressed or improperly managed can quickly escalate to cause significant business risk.

Fusion Risk Management, headquartered in the suburbs of Chicago, Illinois, is a technology-enabled advisory consulting firm bringing years of top industry experience to the table. The five founding partners alone bring over 100 years of recovery, security and IT risk management experience and are credited with developing and implementing hundreds of plans and actual crisis events plus conducting thousands of test exercises. The Fusion team has combined their experience and ingenuity to develop a state-of-the-art approach to IT risk management which is why we are profiling their offering.

IT risk management, the emerging discipline which seeks to bring together multiple areas of risk into a comprehensive and well-managed program, is a daunting task for any enterprise. Nonetheless, it is vitally important as enterprises are more dependent on information technology as never before. "Vulnerabilities and threats are endless but the funds to address them are not," states Fusion CEO,

David Nolan. This defines the Fusion approach which recognizes executives must strike a balance between fiscal responsibilities while ensuring the business is adequately protected. To help accomplish this goal, Fusion developed the Fusion Framework™ methodology and software platform, which "fuses" such areas as security, recoverability, operational risk and compliance into one easily administered system. Fusion's five-step process provides organizations with a metrics-driven understanding of its current and desired state of risk management maturity, while delivering an ongoing process for reporting the status, priorities and business impact of risk management investments.

Business continuity is more readily affordable than many organizations imagine. It is certainly much less expensive than the alternative since, without a plan in place, most organizations do not survive a major business interruption. Hopefully, this quick look at Fusion Risk Management will persuade you to consider evaluating your existing risk management plan.

For more information on the Disaster Preparedness Communications Forum please go to: http://www.tmcnet.com/disaster-planning/Default.aspx or contact Max Schroeder at maxschroeder@tmcnet.com. IT

Max Schroeder is the Senior Vice President of FaxCore, Inc. (www.faxcore.com nschroeder@faxcore.com).

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

By: Richard "Zippy" Grigonis

Elma's "E-Frame" Open Access Test Chassis

Selecting an electronic enclosure for developing a high-end computing product (e.g. for some sort of rackmount form factor) can be a tricky affair. You obviously want to have direct access to installed boards – such as front-loaded and rear-loaded I/O boards – to test and debug them by probing voltages and signals. To do this requires the use of extender cards on some types of chassis, which usually results in signal distortion and degrades overall board performance.

However, some enclosures created specifically for developers have removable side covers, giving you full access to the component side of installed boards without using extender cards. The best of these general-purpose system development platforms can be used for board-level, software and even production testing. They cut engineering time for getting electronic products to market and allow engineers to fully concentrate on product development and system integration.

Recently, Elma Electronic (News - Alert) (www.elma.com) of Fremont, California, a global maker of electronic packaging products, has announced a new open frame chassis for test/debugging. The unit has no side or back walls around the card cage area, leaving it open for easy access.

The Elma E-frame was designed with the high (and flexible) power and cooling requirements for VPX (VITA 46/48) systems. However, any 3U (5.25-inch) or 6U (10.5-inch) backplanes can be used. This includes VME/64x, VXS, CompactPCI (News - Alert), and other backplane architectures.

With its rugged modular aluminum construction, the E-frame tower can support up to 21 slots at .8-inch or 17 slots at a 1-inch pitch. There are front-accessible test points and monitoring LEDs for all VME, VPX, VXS, and cPCI voltages. This includes +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. The Type 39E Portable Tower version of the product has a convenient carrying handle.

The black-coated powder coated finish of the E-frame enhances aesthetics. Other features include a Rear A/C PEM (Power Entry Module) with fuses, GND Stud, and front-situated ESD (Electrostatic Discharge) jacks. The unit also offers full RTM (Rear Transition Module) support.

The lead-time is 4-6 weeks. IT

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

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By: David Yedwab

2008 — The Year for SMB VoIP

The SMB market huge: the US Census (Source: 2005 County Business Patterns) tells us that almost exactly half of all employees work for firms that fit this SMB model. So why isn't there more SMB VoIP?

My contention is that there have been three major and one tertiary reason why SMB VoIP hasn't taken off until now. And that these impasses are, in 2008, finally largely removed and that SMBs — likely to continue to be the economy's engine, even in a downturn — will be turning to VoIP solutions in greater numbers beginning in 2008.

The first impasse has been the awareness of and confidence in VoIP solutions. The growth of and awareness of consumer VoIP, and its associated dollar savings, as well the public successes of larger Enterprise VoIP deployments has reduced the natural avoidance of "New Technology ([News](#) - [Alert](#))" by most SMBs. VoIP has certainly "Crossed the Chasm" to the mainstream and technology-averse SMBs are becoming more comfortable in deploying this technology.

The second impasse has been the significantly higher price points of VoIP systems *versus* older technology (TDM) systems. Previously, VoIP solutions for SMB had prices two or more times the expectation of from $300 to $500 maximum, per user, that the old technology cost. Now, following Moore's Law, overall VoIP market growth and the introduction of offers to fit the needs of SMBs, the price points have come down significantly to be much more in-line with SMBs' willingness-to-pay.

Thirdly, and perhaps the most important of the impasses: until now, there wasn't a convenient, local place for SMBs to acquire a VoIP system. Now, distribution channels wanting to sell VoIP solutions to SMBs have come on-line — traditional telephony resellers, data VARs, telephony providers and other channels that serve this market, have all added SMB VoIP products to their portfolios as they see that SMBs are now more willing to purchase VoIP solutions.

The tertiary reason: affordable broadband network connectivity is now finally available in most areas (with the exception of the problematical rural market). And bandwidth pricing is much more reasonable than previously — and may even be available from multiple providers in many locations, at competitive rates.

Reaching SMBs with a comfortable-to-adopt, more affordable and locally sold and supported solution is the only way to be successful in the SMB space. With these impasses virtually removed, 2008 will be the Year of SMB VoIP. Also, one might speculate that the growing UC focus on business process improvement may also stimulate SMB adoption of VoIP — but that is the subject of future commentary. **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.

By: William B. Wilhelm, Jr.

Can You Hear Me Now? Hearing Aid Compatibility and VoIP

The FCC (News - Alert) is considering revising its hearing aid compatibility rules to include wireless VoIP and open platform services. These rules could have a significant impact on a variety of VoIP services and equipment.

Under current Commission rules, manufacturers and service providers are required to meet the Commission's hearing aid compatibility standards to the extent that handsets are associated with digital cellular networks that "offer real-time, two-way switched voice or data service that is interconnected with the public switched network and utilize an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls." The FCC is reviewing comments in response to its own proposal to expand its hearing aid compatibility rules to VoIP applications provided over wireless technologies such as WiFi (News - Alert), WiMAX and other emerging technologies. Unlike other FCC actions to date, the proposed rules could apply to both interconnected and non-interconnected VoIP applications.

The Commission also seeks comment on whether to apply hearing aid compatibility rules to devices and applications that utilize "open platform" networks (i.e. Band C Block spectrum). Currently, the FCC's rules impose hearing aid compatibility obligations only on manufacturers and providers of Broadband Personal Communications Services (PCS), Cellular Radiotelephone Service (cellular), and Specialized Mobile Radio (SMR) Services in the 800 MHz and 900 MHz bands. The FCC seeks comment on the applicability of their hearing aid compatibility rules to "independent retailers and other third parties in the context of 'open platform' networks."

In addition, the FCC is asking, "what constitutes a telephone in the context of new devices that more closely resemble mobile computers but have voice communications capabilities?" This question is clearly aimed at VoIP applications that run on laptops or other devices that utilize WiFi or other wireless connectivity. In true form, the Commission is seeking broad comment on what additional regulatory obligations may be appropriate to address the issues raised by emerging wireless technologies, taking into account the statutory goal to promote equal access to communications equipment and services for consumers with hearing loss as well as economic, technological, and legal constraints.

Should the FCC apply these rules to VoIP and open access services, manufacturers will largely bear the burden of developing and producing compatible devices. However, VoIP and other covered providers will remain liable should equipment manufacturers be unable to meet the FCC's standards within the phase-in deadlines. VoIP providers, systems integrators and manufacturers are advised to keep a close eye on the docket. **IT**

William B. Wilhelm is a partner in the law firm of Bingham McCutchen LLP (www.bingham.com). The preceding represents the views of the author and does not necessarily represent the views of Bingham McCutchen LLP or its clients.

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Table of Contents • Ad Index

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By: Mark Hewitt

The History of SIP and Security in Mobile Multimedia Content

Many people believe that the Session Initiation Protocol ([News] - [Alert]), (SIP) is just a VoIP protocol. The impending migration to Mobile VoIP also depends on SIP. It was actually developed by a group of computer science students to monitor and report back the contents of their dorm room vending machines. The first papers directed the protocol toward its use for conferencing systems. The first Internet VoIP gateways designed for multi-party conferences were developed by a Denver-based firm, Confertech, in 1996. The team had high hopes for using the multicast backbone, or "M-Bone", to save on bandwidth.

I recall one of our engineers, Bobby Mahonty, came across a published paper by Henning Schulzrinne ([News] - [Alert]) outlining the protocol as a multi-party multimedia session control solution. We had been working closely with Ike Elliot and the Level 3 team to form an industry alliance and the creation of standards for a "SoftSwitch". Our team quickly rewrote the document and resubmitted it, referenced as SIP "Plus", with the intent to replace our already maturing text based-protocols for our SoftSwitch. We also addressed in this draft the need for a security model much like HTTPS. The teams collaborated and actually built a reference design leveraging the early DNS concept behind FreeS/WAN, a project started back in 1996 to protect Internet traffic from passive wiretapping.

SIP is far more than a protocol for voice communications, as it was designed with multimedia in mind, and today, it's beginning to emerge as a framework for any broadband service that produces a value or contains content. Standards and methods are finally beginning to reemerge after more than a decade of industry conflict. Security methods are needed now more than ever as we see the proliferation of common tools enabling novices to monitor and record SIP traffic from any layer 2 access point on a network.

Consumers may not be aware of the ease of these methods; however, the first time a CEO's conversation is played back over a "blog", the confidence in broadband communications will be shaken.

SIPS, sometimes referred to as Secure SIP, is a standards track that is easy to follow to build products and services. Although FreeS/WAN never really caught on, ENUM has since emerged from DNS standards and may have high value for the convergence of broadband services.

Next month I will address DNS and ENUM services and the critical role they play in providing ubiquitous and secure services to the final legs of convergence in broadband content and services.

References:

History of FreeS/WAN: www.freeswan.org/history.html
SIPS Draft: www.ietf.org/internet-drafts/draft-ietf-sip-sips-08.txt
History of ENUM: www.enum.org/abridged_history.html **IT**

Mark Hewitt is Chief Strategic Officer of i2Telecom International, Inc. (www.i2telecom.com).

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On the factory floor

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ENTERPRISE NEWS

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Linksys Launches WAP2000 AP with PoE

Linksys has launched its Wireless-G Access Point with PoE, the WAP2000, for business network environments. Included in the WAP2000 is RangeBooster technology, which offers improved performance, range, and speed, enabling businesses to effectively double network size and enhance performance.
www.linksys.com
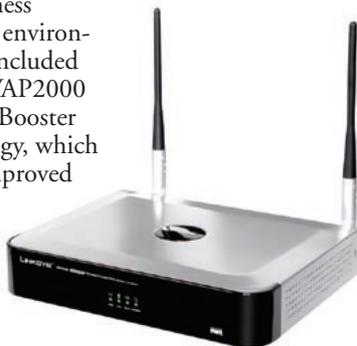
Vertical Communications Launches Vertical SBX IP 320

Vertical Communications announced the Vertical SBX IP 320, a converged IP telephony system for single- and multi-location small businesses. The SBX IP 320 provides small businesses access to the advantages of a big company PBX, including a rich feature set, robust telephony applications, and significant flexibility and cost-savings associated with VoIP.
www.vertical.com

TalkSwitch Compatible with Gamma Telecom

TalkSwitch and Gamma Telecom announced that TalkSwitch IP PBXs are compatible with Gamma Telecom's IP DirectConnect service. "This is a prime example of two like-minded companies coming together."
www.talkswitch.com
www.gammatelecom.com

AT&T Offers Bundled Service to Business Customers

AT&T announced a new bundled service for business customers converging voice, Internet, and data communications over a single network connection. Called "AT&T Business in a Box", the new bundled service comprises an Internet telephone system with Internet access, VPN capabilities, WiFi capabilities, and a LAN.
www.att.com

i2Telecom Issued Patent for VoiceStick

i2Telecom it has received U.S. Patent #7,336,654, for its portable VoIP Service Access Module (VSAM) technology, VoiceStick. VoiceStick is a plug-and-play, portable key chain-sized device that inserts directly into the USB port of a PC or notebook computer, PDA, or other similar device.
www.i2telecom.com

D-Link Announces Expansion of Green Ethernet Technology

D-Link announced the expansion of its Green Ethernet technology series by introducing two new environmentally-friendly small business Gigabit switches. The D-Link DGS-2200 series 5 and 8 port desktop switches reduce energy costs through a reduction in power consumption, with no compromise on operational performance and functionality.
www.dlink.com

F5 Networks Announces Application Ready Network for Windows Server 2008

F5 Networks announced it has extended its Application Ready Network (ARN) for Microsoft to include Windows Server 2008, helping enterprises achieve deployment advantages, including support for the updated versions of MS Internet Information Services (IIS) and Terminal Services and other MX technologies.
ww.f5.com

SightSpeed and VTEL Bring Affordable Videoconferencing to SMBs

SightSpeed and VTEL have teamed up to bring an affordable SIP-based videoconferencing solution to market. This new hardware/software solution combines VTEL's IPanel all-in-one conferencing system with SightSpeed's high quality video conferencing service.
www.sightspeed.com
www.vtel.com

Epygi Launches IP PBX that Blends IP and Key-System Functionality

Epygi Technologies announced general availability for the latest addition to its line of small and medium business telephony appliances, the Quadro 6L. Epygi designed the Quadro 6L for environments that require multiple ringing phones and shared trunk appearance visibility, according to company officials.
www.epygi.com

Sagem-Interstar Announces New XMediusFAX IP Fax Software

Sagem-Interstar announced version 5.5.2 of its XMediusFAX T.38 Fax over IP (FoIP) solution. This latest evolution of Sagem-Interstar's boardless IP fax server software includes new features such as unique, built-in Python scripting and increased flexibility in fax routing.
www.faxserver.com

SpinVox Intros Voicemail-to-Email Solution for BlackBerry Users

SpinVox launched a BlackBerry plug-in, enabling voicemail messages to be converted to text and delivered as email directly to the BlackBerry device. In this way, users can identify the caller and read the message, and then reply with a single click. The conversion from voicemail into text is powered by the SpinVox Voice Message Conversion System (VMCS).
www.spinvox.com

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SERVICE PROVIDER NEWS

Covergence Completes Interoperability Testing with PortaOne

Covergence announced the successful completion of interoperability testing with PortaOne, a global vendor of carrier grade billing and provisioning software.
www.covergence.com

Ciena Completes World Wide Packets Acquisition

Ciena announced completion of its acquisition of World Wide Packets, which gives Ciena additional Ethernet expertise and products to play in the burgeoning Ethernet access market. The deal dovetails nicely with its FlexSelect and Ethernet-over-any-media strategy.
www.ciena.com
www.wwp.com

MERA Systems' New Softswitch Delivers PBX Functionality as a Service

MERA Systems released a new version of the MERA IP Centrex, CLASS 5 softswitch, enabling carriers to deliver PBX functionality as a service. The new release of MERA IP Centrex includes call management capability enhancements as well as database and Control Unit redundancy schemes which provide for reliability and dependability of the system key elements.
www.mera-systems.com

ECI Intros New FTTB Solutions

ECI Telecom announced its gigabit passive optical network and gigabit Ethernet (GbE) additions to its suite of broadband access products — two new Optical Network Units, G-PoweRAM 48V and the MiniCABTM 8V.
www.ecitele.com

Alcatel-Lucent Enhances Switching Capacity of GPON Network Termination Card

Alcatel-Lucent introduced important capacity innovations to its 7342 ISAM FTTU GPON platform. "The 7342 ISAM FTTU is optimized for addressing the bandwidth requirements of single-dwelling unit, multiple-dwelling unit and business customer segments."
www.alcatel-lucent.com

Excel Selects VIXXI's VoIP E911

Excel Telecommunications has selected VIXXI Solutions' next generation VoIP E911 network to provide secure E911 routing that helps drive lower operating costs and provide advanced services throughout the United States. The combination of Excel's carrier-class SIP Trunking bundled service with VIXXI's comprehensive E911 routing is expected to help deliver on the promise of VoIP.
www.excel.com
www.vixxisolutions.com

VoX Communications Launches 8-Port Linksys ATA Support

VoX Communications announced it has launched support for the Linksys SPA8000 small business analog telephone adapter (ATA), as it extends its penetration into the small business wholesale market, providing an affordable and "easy-to-use alternative" to a traditional PBX phone system.
www.voxcorp.net
www.linksys.com

Sunrise Telecom Introduces GTT

Sunrise Telecom introduced the GTT, an all-in-one portable handheld test set designed to speed accurate verification of home networks for triple play deployments. For the first time, field technicians can rely on one, compact test set for virtually every home network testing requirement including Ethernet, WiFi, HomePNA and home wiring.
www.sunrisetelecom.com

i3 Networks Deploys Velleros Mass Communications Emergency Alerting

Velleros announced that i3 Networks has deployed Velleros AlertSlinger mass notification suite of applications. i3 Networks will team to offer Velleros Call Attempt Notifier to over 55,000 VoIP subscribers, Cable MSO's, large enterprises and other carriers interested in a Hosted Solution.
www.i3net.us
www.velleros.com

Ixia Opens New Proof-of-Concept Lab

Network test solutions provider Ixia has opened a new executive briefing center and proof-of-concept (PoC) lab adjacent to its sales and services offices in Santa Clara, California. Dubbed "iSimCity," the new facility lets Ixia's customers "access thousands of test ports and aggregate traffic in the range of 10-100 Gbps; emulate hundreds of thousands of subscribers/users; and generate millions of routes with thousands of routing peers."
www.ixiacom.com

WIRELESS NEWS

www.tmcnet.com/1770.1

Agilent Technologies and Beceem Collaborate on Mobile WiMAX Protocol Test Solution

Agilent Technologies and Beceem Communications announced they will extend their WiMAX collaboration to include Mobile WiMAX Wave 2 Protocol Test. As per the agreement between both the companies, Agilent and Beceem will ensure that customers can confidently use Agilent protocol test systems with Beceem's Mobile WiMAX reference designs.

www.agilent.com

www.beceem.com

www.tmcnet.com/1771.1

JPS and Clarity Integrate Cellular PTT and Land Mobile Radio Interoperability

Raytheon's JPS Communications has collaborated with Clarity Communication Systems to integrate cellular push-to-talk and land mobile radio interoperability product offerings. Using this new technology, digital push-to-talk cellular users will now be able to communicate with land mobile radio users without compromising voice quality and network efficiency.

www.jps.com

www.claritycsi.com

www.tmcnet.com/1772.1

Nextlink Intros 30Mbps Wireless Metro Ethernet Services Offering

Nextlink Wireless launched a new 30Mbps wireless metro Ethernet services offering for carrier reseller partners. This expansion of Nextlink's Wireless Metro Ethernet Services speed options will enable carriers to offer a mid-range Ethernet solution to businesses that require faster network throughput, but may not be ready for a full 100Mbps Ethernet networking solution.

www.nextlink.com

www.tmcnet.com/1780.1

Agito Networks Introduces RoamAnywhere Mobility Router

Agito Networks introduced its RoamAnywhere Mobility Router, using RF-based, location-aware technologies to reliably mobilize and enable voice over 802.11 wireless LANs and data applications, while remaining agnostic to enterprise customers' choices of mobile carriers and equipment vendors.

www.agitonetworks.com

www.tmcnet.com/1774.1

Arieso Accelerates Development of Self Optimizing Wireless Networks

Arieso has secured $10 million in a Series B investment led by Oxford Capital Partners and Qualcomm Ventures, which will be used for accelerating the development of self optimizing wireless networks. Arieso's software not only optimizes the quality of service for mobile cell phone users, but also minimizes capital expenditure and operating costs for network operators.

www.arieso.com

www.tmcnet.com/1775.1

UMA to Support 3G Dual-Mode Handset and Femtocell Deployments

The 3GPP has completed a specification update effort adding 3G support to the UMA/GAN standard. Following the completion of the 3G version of the 3GPP UMA/GAN standard, the vendor community is making efforts to develop UMA-based 3G dual-mode handset and femtocell products in anticipation of operator service deployments later this year.

www.3gpp.org

www.tmcnet.com/1776.1

AirMagnet's Laptop Analyzer Available for Apple MacBook Pro

AirMagnet announced that AirMagnet Laptop Analyzer is now supported on the Apple MacBook Pro. This new platform support allows IT managers or wireless professionals using Apple laptops to leverage AirMagnet's mobile field tool for auditing and troubleshooting wireless enterprise networks.

www.airmagnet.com

www.tmcnet.com/1777.1

XAVi Announces IP-STB with Integrated 802.11n and DVB-T Functionality

XAVi Technologies launched its new HD IPTV STB with integrated 802.11n and DVB-T functionality. Designed for streaming True Full-HD video content (up to 1080p) wirelessly, the Pisces111 IP-STB has new IEEE 802.11n technology, capable of supporting more than 100 Mbps of streaming video.

www.xavi.com.tw

www.tmcnet.com/1778.1

Motorola Intros Wireless Access Point Solution for Branch Offices

Motorola introduced its adaptive AP wireless solution capable of offering secure wireless connectivity and service to mobile users in remote branch offices and support for future 802.11n wireless local area networks (WLANs). Leveraging an adaptive AP architecture, enterprises can enjoy centralized management and local networking. As a result enterprises will save by reducing the need for additional networking equipment and dedicated IT staff at each branch office.

www.motorola.com

www.tmcnet.com/1779.1

Telenor Enters into WiMAX Framework Agreement with Alvarion

Alvarion entered into a framework agreement with Telenor Telecom Solutions, with an option for other Telenor subsidiaries and affiliates to purchase WiMAX solutions using this framework agreement. "The agreement demonstrates that WiMAX is the right technology for achieving optimized coverage in any kind of environment."

www.telenor.com

www.alvarion.com

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OTHER INDUSTRY NEWS

DEVELOPER

www.tmcnet.com/1783.1

Elma's New AMC Extender Card
Elma Electronic announced an extender board for MicroTCA and AMC-based systems. The module extends the signals out of the card cage area so that an Advanced Mezzanine Card (AMC) can be tested or debugged.
www.elma.com

www.tmcnet.com/1784.1

Zannel Opens Developer API
Zannel announced it is launching an open API that will allow developers to leverage the functionality of Zannel's Instant Media Messaging platform to create media-rich mobile applications, widgets, and mashups, enabling the delivery of text, picture, and video messages across SMS, MMS, and email systems and format them for Web browsers or mobile devices.
www.zannel.com

www.tmcnet.com/1785.1

STMicroelectronics Offers TCP/IP Stack Free for STR91x Designers
STMicroelectronics has made the NicheLite TCP/IP stack available free of charge with its STR91x 32-bit Flash microcontrollers featured for networking applications. NicheLite is a fully-featured TCP/IP stack boasting a memory footprint of less than 12 Kbytes. The stack delivers memory efficiency, low cost and power savings in embedded systems and has features including a compact TCP layer optimized for simple memory management, sdata copy prevention, low memory usage and high data throughput.
www.st.com

SIP

www.tmcnet.com/1786.1

Junction Networks Unveils New Bridging Application
Junction Networks launched Inbound Bridge, an accessory service that ties in third-party providers of international and domestic direct inward dial (DID) numbers. Junction Networks' business customers can save money by using Inbound Bridge, and connecting to the onSIP PBX platform, which offers the best available price and flexibility in hosted PBX, auto attendant, voice mail and other voice services.
www.junctionnetworks.com

www.tmcnet.com/1787.1

Esnatech Provides Real-time High Availability and Disaster Recovery
Esnatech introduced its new high availability and disaster recovery release leveraging Sybase Technologies' Mobilink synchronization software. The 7.1 release of the Telephony Office-LinX platform allows customers to distribute the application and resources over multiple servers connected to a single or distributed telephony infrastructure.
www.esnatech.com

www.tmcnet.com/1788.1

M5T Intros New SIP Client Engine
M5T released its new SIP Client Engine, a SIP client implementation based on RFC 3261 and other IETF RFCs. The new engine includes a suite of high-level C++ APIs developers can use to integrate SIP functionality into any type of device with a minimum of fuss.
www.m5t.com

CHANNEL

www.tmcnet.com/1789.1

U4EA Inks New Distributor for VoIP Products
U4EA Technologies has a new distributor for its Fusion 200 and 400 Series Multi-Service Business Gateways (MSBG) — Pulse. "U4EA's solution enables us to provide QoS, survivability, session border control and VoIP/router security features in a single product, and that's a big differentiator."
www.u4eatech.com

www.tmcnet.com/1790.1

Verso Signs Reseller Agreement with Nortel
Verso Technologies has signed a worldwide reseller agreement with Nortel, through which Nortel will be able to sell Verso products through out the world. Provisions in the agreement allow for Verso to offer product installations, support and maintenance for Nortel.
www.verso.com
www.nortel.com

www.tmcnet.com/1791.1

Freedom Wireless Signs Distribution Agreement with Blackstone
TMT Capital subsidiary Freedom Wireless signed a distribution agreement with BlackStone Calling Cards. Under the deal, Blackstone will distribute Freedom's prepaid wireless products, which include Zebra Unlimited and Zebra Everywhere, to traditional wireless and prepaid distributors and retailers.
www.blackstone.com

IP CONTACT CENTER

www.tmcnet.com/1792.1

Vonage Plus SaaS CRM Equals High Functionality For SMBs
CRM ASP announced the availability of Vonage VoIP services fully integrated in the CRM platform. Available immediately, Vonage integration brings small businesses full integration with Free CRM and CRM ASP licensed products, providing one-click calling and automating phone dialing and outbound sales campaigns with Vonage. CRM ASP provides CRM solutions to over 75,000 companies and 90,000 subscribers.
www.vonage.com
www.freecrm.com

www.tmcnet.com/1793.1

FrontRange Announces Goldmine Mobile Version 3
FrontRange Solutions announced the availability of GoldMine Mobile Edition Version 3.0. The new software edition gives sales teams the ability to manage customer contacts, sales activities and opportunities at any time, from anywhere, on their BlackBerry smartphones.
www.frontrange.com

TELECOM EXPENSE
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Rivermine Picked by IBM to Run TEM Solution

IBM unveiled a TEM solution designed to help enterprises manage the costs associated with the communications services needed to stay competitive — it picked Rivermine to supply TEM software. "The comprehensive TEM service from IBM will help drive down the complexity of managing spend and improve processes for order management, bill management and dispute resolution in one integrated, consolidated and automated solution."

www.rivermine.com
www.ibm.com

Control Point Solutions Launches New Data Center

Control Point Solutions has launched a new state-of-the-art data center, to which it successfully migrated while providing uninterrupted service to their clients. Benefits of the new data center include faster system response times, improved storage capacity, greater processing power, expanded security and disaster recovery capabilities, and reduced maintenance windows (scheduled downtime).

www.controlpointsolutions.com

Veramark Joins Ingram Micro as Vendor Partner

Veramark Technologies announced their call accounting software eCAS is now available through Ingram Micro, the world's largest technology distributor. This agreement will make eCAS accessible to Ingram Micro's vast network of reseller customers in the United States, including many of the channel's largest players. Tested and certified by most leading switch manufacturers, including Avaya, Cisco, and Nortel, eCAS offers the ease of point and click navigation with the control of a built-in robust reporting engine.

www.veramark.com

TnT Launches SOA for Global Access to Telecom and IT Expenses

In an effort to further expand its global TEM services and provide access to important financial and IT related information, TnT Expense Management launched a new SOA that will enable clients to access inventory, spend, and rate information directly from their own internal applications. TnT Expense Management maintains in-depth information about clients' IT and telecom assets with its copyrighted Telebase system, and the new SOA allows secure access and synchronization with any application that a client is running regardless of the operating system, language or platform.

www.tntem.com

Evotem Launched Evotem University

Evotem announced the launch of a new professional development program, Evotem University, for enterprise telecom and IT professionals. With the new program, telecom and IT professionals looking for career advancement and educational opportunities will be provided with a structured program for improving the way telecom and IT services are managed. Evotem University courses teach best practices and proven methodologies for financial and operational management processes in an enterprise telecom environment and the program provides a flexible curriculum with both in-class and online courses offering over 230 hours of training.

www.evotem.com

Vocio's TEM Software In Line With AOTMP Study

AOTMP recently published results of a research study titled, CFO and CIO Perspectives: A Top-Down View of IT and Telecom Management, which noted that reduction in telecom expenses was a major challenge for CFOs and CIOs. The study surveyed 275 CFOs and CIOs about managing technology and telecommunications and uncovered that enterprises do not have enough information regarding means and opportunities to reduce telecom expenses.

www.vocio.com
www.aotmp.com

Asentinel Receives Patent for TEM

Asentinel announced it has received a United States patent covering core elements of its TEM software, Asentinel 5.0. "We have long highlighted that when we introduced our Asentinel TEM software, we were the first to develop truly innovative solutions to address the challenging task of processing telecom invoices. This patent, granted from an application filed in 2003, serves as a testament to this view, and recognizes our industry leadership."

www.asentinel.com

Ezwim Boosts Revenues by 50 Percent in 2007

Ezwim reported a 50 percent growth in revenues in 2007 compared to 2006, outperforming the market by 20 percent. "These figures prove that the market is aware of the necessity to professionally manage telecom spending. Both enterprises and operators need services to make telecom spending transparent and manageable. Our SaaS model offers customers competitive advantages by means of a scalable and comprehensive solution that can be implemented quickly and without initial investments."

www.ezwim.com

MTS Announces Sale of its Interest in cVidya Networks

MTS (Mer Telemanagement Solutions) announced it has completed the sale of its ownership interest in cVidya Networks. This sale is part of the Company's plan to improve its liquidity by selling non-core assets in which significant synergies or added values no longer exist. "The sale is the second step of our restructuring plan and efforts to improve our Company's working capital."

www.mtsint.com

By: Albert Subbloie

Is it my imagination, or have carrier non-disclosure agreements gotten tougher lately?

You are not imagining things. For the last six months or so, we've noticed material changes in the Non-Disclosure Agreements (NDAs) that carriers are asking enterprise clients to sign. Companies report these new confidentiality agreements as restrictive and view them as an attempt to take away the company's control of their billing information! There are, of course, many different versions of these NDA agreements in circulation, but the most severe pertains to third party Telecommunications Expense Management (TEM) firms.

One particular NDA states that the billing information provided from the carrier to the client can only be used for the limited purpose of contract management and re-billing, and that all of the information must be returned to the provider upon request. I've seen NDAs that attempted to restrict third party use of rate information, but this expansion of the scope of the NDA to actually claim ownership of the customer billing information is something new. And it may, in fact, violate Customer Proprietary Network Information (CPNI) regulations.

Since fixed and mobile providers are presenting many different versions of these NDAs, an alarming fact in and of itself, it's im-portant to be aware of certain "danger areas" in these agreements. Don't be afraid to redline anything you disagree with and push back on the carrier. In fact, the best practice is to offer your own enterprise NDA version as a starting point and require the carrier to accept it.

Things to look out for include the following:

1. Obligations that run to perpetuity. Define a time limit for all confidentiality obligations, even if it's five years out. This is much better than exposing the enterprise to the risk of a never-ending duty.

2. Information that is to be protected must be clearly defined, which is usually done by marking it "Confidential" and reducing verbal communications of confidential information to writing. The burden of defining what is confidential should be shifted to the disclosing party.

3. Watch for restrictions that prevent you from sharing information with third party consultants, agents, or attorneys. It's fine to agree that third parties be obligated to the same standard of care as the enterprise, but some versions of new NDAs don't mention any third parties at all.

4. If an NDA is being required because you are considering the use of TEM services or other third party assistance, be sure and have the third parties' legal counsel review the agreement and assist in the redlining and negotiations.

While an NDA can seem fairly innocuous, overly restrictive NDAs can prevent full exercise of benchmark clauses and potentially slow down RFP exercises. Some of the new versions out there contain unacceptable limitations. So don't sign any NDA without a thorough review of the obligations it is creating. And know that these agreements are negotiable. Push back — you're protecting your right to use your information. **IT**

Albert Subbloie is President, CEO and Founder of Tangoe, Inc (www.tangoe.com), the leading software provider in the TEM space. Recognized as a telecom technology and Internet pioneer, in 1984 he co-founded and served as CEO of Information Management Associates (IMA), guiding its growth to more than $50M in sales. In 1997, he co-founded Buyersedge.com (acquired by Ensera), an Internet company in the field of reverse auction. (Subbloie is credited with a patent for reverse auction theory, the leading Internet shopping site paradigm.) He also founded Freefire (acquired by Teletech Holdings), a web-enabled e-CRM customer interaction software company, and served on the Board of Acsis, Inc., the leading provider of RFID device management technology solutions (sold to Safeguard Scientific). He now serves on the Board of NYC-based Operative Inc. He was also Chairman of the Connecticut Technology Council (CTC) and now serves as a Board member.

Mediatrix Telecom

Serge Beaudoin
President and COO, Mediatrix

Founded in 1997 and head-quartered in Sherbrooke, Quebec, Canada, Mediatrix (www.mediatrix.com) develops VoIP access devices, gateways and associated software targeting all segments of the telecom/IT market. Their VoIP focus is on solutions at the network edge that enable the convergence of voice traffic onto an all-IP network.

Internet Telephony (News - Alert) magazine recently talked with Mediatrix' President and COO, Serge Beaudoin. Having begun his career more than 15 years ago as a software communications protocol designer for the Société de Micro d'ectronique Industrielle de Sherbrooke (SMIS), his career has since encompassed many operations and engineering assignments, including various leadership positions at SMIS, C-MAC and Mediatrix Telecom (News - Alert). He has served as director of the hardware and low-level software team of Mediatrix as well as General Manager for M5T. In fact, Beaudoin was instrumental in establishing the VoIP hardware and software development team of Mediatrix.

ITMag: Will VoIP Peering (News - Alert) eventually disrupt the gateway market?

Beaudoin: The first question is: who can make money out of VoIP Peering? With the downturn experienced last year with regards to Skype, the Vonage slowdown and the SunRocket (News - Alert) story, the market value of VoIP Peering can be discussed only for a while.

The other question is: will VoIP peering find some room in the enterprise marketplace?

How can you ensure control and security in this world? Security and a certain form of control are paramount. Do I want my business or personal communication system to look like my email inbox with all the SPAM? What about SPIT? Will the large players open their network to the smaller independent ones controlling significant square miles?

When VoIP Peering will arise, it will drive down the demand for high density gateways. Since Mediatrix focuses on low to mid density enterprise premise gateways, VoIP Peering is (and will be) providing some momentum to our sales. Even with VoIP Peering at the service provider level, enterprises want to be able to keep local PSTN access and to interconnect with their legacy PBX (News - Alert). With the IMS system now starting to be deployed to carriers also looking after the enterprise market, we see an increasing demand for gateways. We have also seen the traction of cable operators in telephony in the residential market and the next step is toward the enterprise market.

On the short to mid term, VoIP Peering will also drive the needs for Enterprise hosted Session Border Controller, one of the many features of Multi Service Business Gateways (MSBG), our next flagship.

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

Beaudoin: Our positioning in the next-generation telecom market is looking pretty good, more and more of the large players are beginning to offer a complete and reliable service not only for the residential market but also to the enterprise segment, where Mediatrix is also bringing a complete portfolio and valuable expertise. Those players are not only talking about combining the fixed and mobile infrastructure with IMS but they now also consider replacing the traditional PSTN. In such transitioning, intelligent gateways are bringing to the enterprise and customer premises the missing links in order to solve the Emergency calling issues, lawful intercept, survivability, security and redundancy requirements.

ITMag: Can everything be done centrally at the IMS core?

Beaudoin: Not really, you will need gateways not only during the transition but also after the full transition. This is why Mediatrix is focusing on intelligent gateways enabling service providers to keep the control on their services (and revenues) but also offering the legal services traditionally offered by PSTN in a seamless transition. We are positioning gateways that meet today's requirement but most importantly the one needed tomorrow.

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

Beaudoin: Mediatrix is now increasingly focused on security and convergence. On the security side, the goal is to have a global approach including the voice stream, the SIP signalling and the management of the gateways. Security is of the essence but must also comply with the needs for lawful intercept and emergency calling. Convergence (News - Alert) takes two dimensions in our priority. First, we need to provide convergence of the voice and data in an enterprise deployment with all of the requirements for proper quality of service, survivability, emergency number management and so forth. Second, we are also focusing on the fixed to mobile convergence by offering enterprise based solution IP-PBX addition supporting dual mode phones (SIP over WIFI and GSM) with seamless bi-directional handover.

All this focus is happening through partnership with established technology partners but also working and listening to the leading IMS and IP-PBX players in the market in order to provide integrated and complete solutions for the enterprise and carrier-enterprise markets.

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

Beaudoin: The IP telephony industry will experience some consolidation in the upcoming years. IMS deployments will take more expansion with a clear link with the enterprise IP-PBX systems with more and more reliable SIP trunks. IP telephony will of course converge to multimedia over IP.

Also the whole communication industry will converge to IP. I think we will end-up with a managed IP network supporting various applications — voice, video, entertainment — with different levels of services and features, for small, medium, large enterprise for residential customers. Communication applications will be custom-tailored to the user's needs and not the other way around. It won't be the case of a service provider offering a communication channel, but an application provider offering 'à la carte' services on a universal IP communication system. Can some form of VoIP peering become a reality, most likely yes, but when and how is quite a question. Replacing the mature PSTN by a pure IP infrastructure with the same reliability and country-specific regulation will still require a lot of time. **IT**
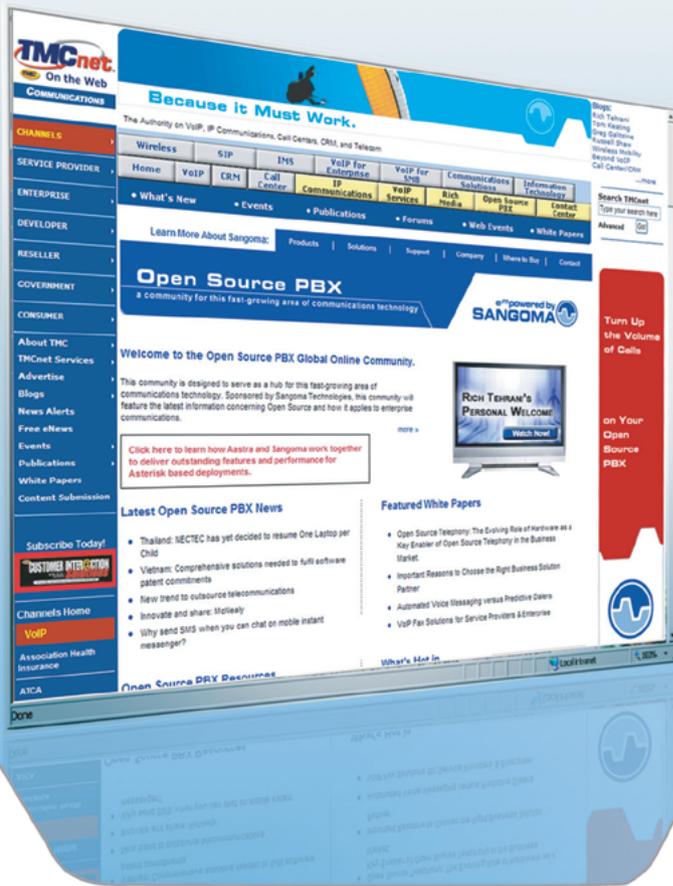
GoTo: **Table of Contents** • GoTo: **Ad Index**

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Special Focus: Telecom Expense Management

By: Richard "Zippy" Grigonis

Conducing business today involves a huge menagerie of devices and networks relating to voice, data and wireless services. What was once a simple phone bill has become a complex, ever-changing maze of costs. Add to that the increasingly mobile and decentralized evolution of both business and telecom, and one can see how businesses can become worried over telecom-related expenses. Even back in the heyday of the PSTN, businesses were already aware that the all-knowing phone company could make billing errors, which led to the first generation of Telecom Expense Management (TEM) experts and their solutions.

Even today, research firms such as Aberdeen ([News](#) - [Alert](#)) estimate that from 2 to 14 percent of telecom invoices are incorrect, and modern-day TEMs claim that a typical organization can realize savings of at least 10 percent of its annual telecom expenditure. TEM expanded a bit to become a business process called upon to order and procure telecom service; to process payment of those services at the proper rates; and to provide the expense and data analytics to manage and control ongoing telecom expense. We soon began to see the first glimmerings of Total Telecom ([News](#) - [Alert](#)) Cost Management (TTCM).

With the rise of IP, wireless and a more complex communications infrastructure, not to mention government deregulation that has enabled complicated contracts and pricing programs to flourish (but also government regulation mandating that certain types of records be kept for certain types of businesses), TEM has had to become more complex and versatile too. Telecom management platforms now go far beyond invoice management and actually assist companies, enterprises and government organizations to manage their communications resources (e.g. inventory) and related business processes more holistically and in real-time, all in an effort to streamline operations, boost productivity and, of course, maximize profit by saving money.

Here's a representative sampling of TEM players. . .

AnchorPoint ([News](#) - [Alert](#))

(Framingham, Massachussets) AnchorPoint's TEM software solutions manage invoices and inventory, evaluate expenditures, and track usage with call accounting software. You can buy their whole package, or they can tailor their software to best fit your business needs.

In addition to their innovative, integrated telecom expense management business solutions, AnchorPoint maintains a list of best TEM practices. For example, a great TEM solution should rely on a common database that can be called upon by an integrated, comprehensive application suite, and the TEM system should be made up of automated, integrated TEM software modules with single entry point.

Asentinel ([News](#) - [Alert](#))

(Memphis, Tennessee) This company shines when it comes to automated auditing. Asentinel's web-based software, Asentinel 5.0, has more than 60 cumulative years of development behind it. Available in either a customer-hosted or Asentinel-hosted deployment, Asentinel 5.0 simplifies and streamlines the entire TEM life-cycle process for all wireline, wireless; voice, data and equipment telecom assets, including invoice processing and workflow, asset and inventory management, procurement and provisioning, and business intelligence and reporting. It provides real-time control by identifying errors as they occur, automating the provisioning, invoicing and reporting processes, and maximizing resources, contracts and network configurations while significantly impacting expenditures. Asentinel 5.0 features TouchFree TEM (your telecom invoice go directly to Asentinel), ContractControl (experts input your contracts into the Asentinel 5.0 system), and Optical Invoice Recognition (OIR) technology (intelligently reads paper invoices with near 100% accuracy).

Asentinel continues to grow its list of Fortune 500/1000 companies and government entities.

Avotus ([News](#) - [Alert](#))

(Mississauga, Ontario, Canada) Avotus' Intelligent Communications Management (ICM) realizes significant spend reductions and continuously verifies and permanently implements all cost and process improvements. Avotus ICM is composed of three components that can be implemented in any order to support your TEM requirements:

1) ICM eProcurement is an automated online approach to sourcing and procurement, helping to eliminate hassles and expenses involved with manual RFP processes. Using the power of technology and an online reverse auction, you arrive at contract negotiation after having your suppliers bid their lowest terms and their best terms, conditions and SLAs to win your business.

2) ICM Expense Management manages all of the operational processes across the entire purchasing to payment chain including implementation, inventory management, invoice validation and finance management.

3) ICM Usage Management is an advanced form of call accounting, enabling you to manage and control the costs of all types of communications services from traditional PBX ([News](#) - [Alert](#)) to the latest converged communications platforms to mobile and wireless, calling cards, and video and web conferencing services. Using web-based reports, detailed information on communications usage is available to help you identify areas to reduce costs, enforce corporate policy and comply with legal and regulatory rules.

Avotus ICM can be deployed as licensed enterprise software, a fully outsourced hosted application, value-added Managed Services, or any combination. Avotus also provides consulting and analytical services to examine all areas of your corporate spend, not just voice, data and wireless. Their certified IT services teams support Oracle ([News](#) - [Alert](#)) and SAP environments.

BroadSource

(Atlanta, Georgia) BroadSource's OneSource ([News](#) - [Alert](#)) is a TEM solution powered by "Virtual Auditor", which represents years of experience of BroadSource's staff. OneSource has a friendly, menu-driven user interface, which intuitively guides the user to manage finances, contracts, and inventory, as well as handle disputes

GoTo: **GoTo:**
Table of Contents • Ad Index

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and generate reports. Its patent-pending User Wallet feature enables companies to monitor, report and reconcile telecom inventory and expense on a single user basis. OneSource's Advanced Reporting functions enable companies to customize reports that fit their organizational structure and specialized needs. Advanced Reporting options can include single user and group average spends and utilization by location, department and company. OneSource also gives you one place to electronically view invoices and inventory for services such as voice, data, IP, mobile, CPE and circuits. It automates many of your daily tasks to streamline telecommunications operations into a central inventory, contract and billing system that enables rapid access to the technical and financial aspects of each service.

Cass Information Systems

(Bridgeton, MO) Cass is a big company that includes the Cass Commercial Bank, the Transportation Information Services business unit — a leading provider of freight invoice payment, audit and rating services in North America; a Utility Information Services business unit — a leading back-office provider of energy information in North America; and a Telecom Information Services unit, which has made a name for itself in the growing TEM market. The foundation of their solution is the advanced nCONTROL Technology, a web-based platform that delivers a higher level of automation, visibility, and control than exists in most companies today, reducing overall telecom costs and streamlining your operations. Each nCONTROL service complements the strengths of your internal staff with additional capabilities. Cass' areas of services include: Process and Pay, Audit and Optimize, Order and Inventory, Source and Contract, and Wireless Management.

Control Point Solutions (News - Alert)

(Rutherford, New Jersey) One of the oldest and largest companies in this market, the result of the 2004 merger of TEM vendors Teldata and Broad Margin. Control Point Solutions provides customers visibility into their telecom provisioning, delivery, invoicing and bill payment. They provide sophisticated Provisioning and Inventory Management, maintaining an accurate inventory of assets and services to provide a base upon which invoices can be compared; Invoice Management in the form of a full end-to-end solution for the receipt, reconciliation and dispute resolution of paper and electronic bills. Invoices can be converted into a standard electronic format; Call Accounting is offered with the ability to track usage of equipment and services to an individual's end point; and Audit and Sourcing.

Information Strategies Group

(Parsippany, New Jersey) ISG's Telecommunications Billing Verification Audit Services ensure billing accuracy, reduce costs by eliminating errors and recover revenue from past overcharges. ISG audits include a review of all invoiced items to ensure compliance with government tariffs and/or regulations along with applicable contracts as well as an analysis of all current monthly invoice charges rendered by vendors for discrepancies. An historical review is also done of billed recurring and non-recurring charges rendered by vendors, and the physical inventory is examined as required of sites to verify the existence of facilities and services billed on an invoice, such as ancillary equipment, private lines, special circuits, etc.

ISG's Telecommunications Inventory Management Service (TIMS) is for clients that don't want responsibility for managing the telecom process methodologies and associated software systems. ISG's TIMS service supports inventory database management, facilitates install/move/add/change service order management, reconciles vendor billing with work order activity, and provides information invaluable for controlling technology cost.

Integrated Mobile (News - Alert)

(Columbus, Ohio) Integrated Mobile is a provider of global managed mobility solutions used by over 250 of the Fortune 1000. Their iWIN package simplifies the process of equipping your mobile employees with the services, software and devices that match their business needs by providing a single portal consisting of a standardized catalog for all your wireless carriers. The iManage product handles visibility, control, Rate Plan Optimization, asset management and wireless analytics. iBill takes care of cost allocation, invoice management and integration with AP/GL Systems. They also offer their iPro professional services that help transform your business with mobile technologies.

Invoice Insight

(Manassas, Virginia) Invoice Insight pioneered Software-as-a-Service (SaaS (News - Alert)) for TEM. They provide both technology and outsourcing solutions to commercial and government end-users of telecom services. In particular, the offer BillPort, web-based TEM software offered as a service, as well as other services, which they divide into three categories: 1) Information Management (invoice processing that includes receipt and data loading of every invoice into BillPort, regardless of the format service type, or vendor), 2) Cost Control (monthly invoice validation, ongoing optimization, or other services), and 3) Managed Services (for customers preferring to outsource the TEM function).

MBG Expense Management

(New York City) MBG (News - Alert) provides total enterprise telemanagement solutions for Fortune 500 companies and carriers. Founded in 1990, MBG helps companies understand and control their enterprise-wide voice, data, and wireless telecommunications and associated services and costs. Using their approach, large organizations can analyze, manage, monitor, and order all of their telecom and related IT services through a secure, centralized web-based portal, even when working with multiple providers.

The MBG Enterprise Telemanagement suite of solutions includes Provisioning, Inventory, Invoice Processing, and Corporate Charge-back solutions, which combine to provide complete, modular and scalable end-to-end solutions for customers. MBG's flexible delivery model enables customers to co-manage telemanagement functions with MBG or to rely on MBG for complete management of those activities. The offer an interesting vendor management function and scorecard spanning all MBG solutions that provides a comprehensive strategic view of telemanagement. MBG enables the integration of telemanagement data with all Operating and Enterprise Support Systems (OSS, EOSS) and Enterprise Spend Management (ESM) systems and claims to be the only vendor to offer a Global Telecom QuickStart Vendor and Service Analysis Program, which delivers immediate cost savings and strategic planning benefits.

MDSL ([News](#) - [Alert](#))

(New York City) MDSL's TEM is an OnDemand service, so there is no hardware or software to install or maintain at the customer premise and no capital expenditure. TEM is composed of eight inter-connected functioning categories: 1) Sourcing (make sure you can buy at the best rates), 2) ordering and provisioning (control the process from ordering to payment), 3) invoice reconciliation (validate automatically the veracity of invoices), 4) dispute management (manage inaccuracies, credits and vendor relationships), 5) cost allocation (ensure fair and precise charge back), 6) asset management (enable accurate management of the telecom estate), 7) usage management (visualize usage patterns, detect fraud and abuse), and 8) reporting (give transparency at every level of the organization).

mindWireless

(Houston, Texas) Solely focused on corporate wireless management, mindWireless' clients include Fortune 500 enterprises and organizations having over 2000 wireless devices. Their Wireless Best Practice Lifecycle services help save up to 40 percent and integrates four critical services: enrollment, procurement, billing optimization and allocation, and reporting. When combined with their dedicated wireless help desk, business intelligence via the "mW SMART" package and administrative support, the result is an improvement in efficiency, savings and productivity of a customer's wireless TEM program.

MobilSense

(Westlake Village, California) Their MobilSentry is an end-to-end wireless management system safeguarding companies from abuse and uncontrolled use of wireless assets. It provides continuous control over the entire wireless environment. It provides a secure online view of cell charges for central and local management, electronic bill delivery to employees, and a set of comprehensive reports including rate optimization and exception reports to flag usage outside company policy. The MobilSentry Management Suite consists of three modules:

1) Enterprise Monitor (Rate Plan Optimization and Distributed Reporting)

2) Policy Supervisor (Automated Policy Management and Administration), and

3) Bill Assistant (Online Invoice Access for Employees).

ProfitLine ([News](#) - [Alert](#))

(San Diego, California) ProfitLine is one of the larger TEM vendors. Their TelcoManager is an intelligent, flexible web-based platform that enables the majority of telecom invoices to be input, validated, cross-checked, paid, audited and allocated in a fully automated manner. It also provides complete visibility into your spend and control over many of the parameters that determine how things are managed. MyTelcoManager is essentially a software platform with a web services and distributed database architecture based on standard Microsoft .NET ([News](#) - [Alert](#)) and MS SQL technologies, all running on standard hardware. This loosely coupled modular architecture enables ProfitLine processes to be scaled independently to handle virtually any volume of work in any area of the telecom expense management lifecycle. The platform incorporates proprietary ProfitLine intelligence in the form of business rules encapsulating deep knowledge of carrier operations and hundreds of best practices garnered from decades of experience in TEM. These business rules can be modified to configure the system to your requirements.

Quickcomm

(New York City) Quickcomm's telecom cost management software solution is an in-house enterprise application that reconciles telecom invoices to your inventory. It automatically analyzes every single line item, from mobile and cellular voice services to tie lines, paging services, data and PBX. Quickcomm identifies each of the discrepancies in your bills, including services and personnel who no longer appear in your other records. Indeed, it does automatic reconciliation of telecom bills down the line-item level, reports charges for lines or services that are not in your inventory, as well as charges by personnel who are no longer with your company. Quickcomm's software allocates telecom expenses by cost center and can analyze telecom infrastructure usage to help guide provisioning.

Rivermine

(South Fairfax, Virginia) Having merged with wireless management innovator BBR Wireless Management ([News](#) - [Alert](#)), Rivermine now is a leading provider of solutions (both software and managed services) that automate the entire telecom lifecycle including contract sourcing, ordering, inventory management, invoice processing/auditing and reporting/analytics.

In terms of software, Rivermine's ([News](#) - [Alert](#)) TEM software suite delivers whatever you need for telecom contract negotiation, procurement, provisioning, inventory management, invoice processing, auditing, and business intelligence using four applications:

- Rivermine Inventory Engine — builds and maintains a current repository of all your wired, wireless, and data networking assets.

- Rivermine Service Order Manager — creates, validates, and tracks telecom orders from request through approval and provisioning.

- Rivermine Finance Manager — enables automated invoice processing, bill validation, cost allocation, and auditing.

- Rivermine Clarity — provides visibility into and control over telecom spend through packaged dashboards, reports, and drill-down analytics.

As for managed services, Rivermine's eXPERTSolutions are software-powered services that can be used individually to provide "quick-hit" cost savings or together to provide a complete TEM managed service. They include: eXPERTSourcing (telecom contract analysis, rate benchmarking, and negotiation solution), eXPERTAudit (turnkey solution encompassing historic audit, ongoing audit, and carrier dispute/collection services), eXPERTInventory (software-powered inventory build service — handling circuit, equipment, and services including wireless), eXPERTInvoice Loading (ensures invoice data is quickly and accurately entered into your TEM system; handles both electronic and paper invoices and leverages electronic invoice readers to expedite the loading process), eXPERTHosting (outsources deployment, operation, and support for your Rivermine TEM software implementation, including all hardware, network access, application and database back-up and restore procedures, system security, and monitoring).

Symphony Spend Management Solutions (SMS)

(Palo Alto ([News](#) - [Alert](#)), California) Symphony Spend Management Solutions (SMS) is part of Symphony Service Corp., a global provider of full lifecycle, product engineering outsourcing solutions (www.sympho-

nysv.com). They enable enterprises to manage voice, data, IT, wireless and other services through their expertise and solutions in Telecom Expense Management by providing a systematic approach to invoice management as well as asset management across the lifecycle. This includes automating order processing, ebonding, monitoring expenses, managing vendor invoices, tracking and managing inventory of assets, web based mobile provisioning, providing ongoing invoice reconciliation via workflow (against actual inventory, contract terms and usage), wireless optimization and accurately allocating costs to internal cost centers. With over 350 clients, Symphony SMS (News - Alert) offers flexible business model options based upon their patented EMS 11 TEM software platform. They offer several engagement models: EMS Enterprise (enterprise-based license that includes all TEM software modules), EMS Standard (license for usage management system), SaaS / Hosted (Software as a Service and hosted application services), Managed Services (Symphony provides business process outsourcing services by service line).

Tangoe (News - Alert)

(Orange, Connecticut) Perhaps the TEM industry's most dynamic company, their CommCare Managed Services and Telecom Expense Management Solutions strives to go beyond the simple savings afforded by TEM, and into the world of communications lifecycle management for fixed and mobile communications. The CommCare Communications Lifecycle Management services are built upon patented technologies that optimize all essential voice, data, and mobile communications.

CommCare Management Platform (CMP) application components include:

- CMP Bill Management Module — allocations, payment, approval, credits, and disputes.

- CMP Inventory Module — building a dynamic services inventory footprint.

- CMP Contract Module — managing carrier agreements.

- CMP Provisioning Module — requesting and ordering of fixed and mobile services and equipment.

- CMP Auditing Module — audit contractual commitments, billing, service levels…and more.

- Reports and Analytics — transforming telecom expense management data into useful management information.

- CMP Knowledgebase — delivering expense management industry reference metrics.

Telesoft Corporation

(Phoenix, Arizona) Telesoft's Total Cost Management Suite is software for enterprise-sized businesses. It utilizes complete web-based telemanagement automation and back-office integration to validate vendor billing and inventory, manages call accounting, manage work orders and trouble tickets, and measures and optimize wireless plans. Telesoft's software enables customers to effectively manage their telecom expenses while using flexible and friendly software. Each software module performs on a single platform and centralized database. Customers select modules that are applicable to the organization. Modules such as Invoice Validation, Call Accounting, Wireless Device Management and Asset Management run in concert to track inventory and products with internal resources while optimizing and

validating those same products with external vendors. The system can handle about 1 million calls per hour.

Telesoft's Quick Validate engine can review thousands of invoices in second. CD, EDI and other electronic formats from every vendor are mapped to the database for accurate and quick validation. Thanks to the modular design of the software, other telecom related management tools can be added, such as Invoice Processing, Asset Management, Cell Phone Optimization and other tools. You can also automate data exchanges among telecom, HR and Accounting departments — integration can be done with SAP (News - Alert), Oracle Financials, JD Edwards, Peoplesoft and virtually every Enterprise market system.

Telwares

(Greenwood Village, Colorado) Formerly Vercuity, Telwares offers an integrated technology platform that integrates all of a company's wireless and wireline, domestic and international, services and network assets into a single application. Telwares' (News - Alert) solutions suite encompasses the entire telecom spend lifecycle from sourcing, procurement and negotiation, audit and recovery, to inventory and invoice management, call accounting and expense allocation. Thus, you can now manage your entire network spend through one application, and Telwares will integrate this with any of your related in-house applications, including HR, Finance, Accounts Payable, and Procurement systems. **IT**

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

The following companies were mentioned in this article:

AnchorPoint www.anchorpoint.com	**MDSL** www.mdsl.com
Asentinel www.asentinel.com	**mindWireless** www.mindwireless.com
Avotus www.avotus.com	**MobilSense** www.mobilsense.com
BBR Wireless Management www.bbrwm.com	**ProfitLine** www.profitline.com
BroadSource www.broadsource.com	**Quickcomm** www.quickcomm.com
Cass Information Systems www.cassinfo.com	**Rivermine** www.rivermine.com
Control Point Solutions www.controlpointsolutions.com	**Symphony SMS** www.psytechnics.com
Information Strategies Group www.infostrategiesgroup.com	**Tangoe** www.tangoe.com
Integrated Mobile www.integratedmobile.com	**Telesoft** www.telesoft.com
Invoice Insight www.invoiceinsight.com	**Telwares** www.telwares.com
MBG Expense Management www.mbg-inc.com	

ApplianX by Aculab —
Easy to Deploy, Easy to Use.

By: Richard "Zippy" Grigonis

Aculab (News - Alert) has long been known worldwide as a highly-regarded provider of enabling technology for solution providers and VoIP developers. For example, their Prosody X board was the first to combine packet and legacy circuit-switched technologies for complex media processing and signalling on a single, cost effective piece of hardware, making it popular among developers of converged telephony solutions. The company is also a pioneer and major proponent of Host Media Processing (HMP), as embodied in its software-based Prosody S platform.

Aculab's latest innovation is ApplianX (www.applianx.com), a family or "range" of single-purpose appliances designed for quick deployment in the telecom network infrastructure of enterprises, data centers and service providers. Today's solutions providers want the benefits of advanced telecom technology involving Voice-over-IP (VoIP), SIP (Session Initiation Protocol (News - Alert)), as well as traditional TDM (Time Division Multiplexing) telephony. But such far-sighted organizations want to focus solely on the applications themselves, avoiding the associated development costs and time needed to build a solution and integrate enabling technology by writing software using C++ or application programming interfaces. Similarly, IT managers prefer the easy installation and management of reliable hardware and software rather than wasting time dealing with low-level technical details. For these people, Aculab has brought forth the ApplianX range.

With the ApplianX product portfolio, Aculab has begun a new era in economical, fixed-function devices which are powerful in their operation and yet easy to use.

Faye McClenahan, Aculab's Head of Strategic Marketing, says, "ApplianX is pronounced 'appliance'. The 'X' represents Aculab's enabling technology on which they are based, our award-winning Prosody X IP media processing cards. ApplianX was developed after talking to our existing customer base and prospects, in addition to taking input from the marketplace. It became apparent that companies want something that's easy to use, a plug-and-play device that can be deployed far quicker than building something with enabling technologies, and yet it should be able to call upon the resources of enabling technologies. Moreover, there's a growing trend whereby the customer wants to personally select individual components for a total communications system and network. Finally, such devices must have great deal of high availability and resiliency."

"So, with those customer requirements in hand," says McClenahan, "Aculab decided to launch a completely new product range, ApplianX. All of the products in the ApplianX portfolio share some common characteristics. They're all plug-and-play devices. They have a set-up Wizard and an intuitive graphical user interface. For example, with the ApplianX IP gateway, you literally go through just five screens to get the system up and running and accepting calls."

"But we've also made these products to be single-purpose," says McClenahan, "Companies don't have to endure a lengthy process to set up and configure a general-purpose device to a particular situation. Each ApplianX is a box they can plug into their network, and it can then almost immediately fulfill a particular network role. We are looking to offer a comprehensive range of ApplianX 'boxes'."

Indeed. The ApplianX portfolio will encompasses a remarkable, diverse array of single-purpose devices, with each product having more features than one would expect in a plug-and-play appliance, yet at the same time being the most cost-effective alternative, thus making each device highly competitive in its particular market sector. The two Gateway products being the first to be made available in the range:

• The ApplianX Gateway for Microsoft (News - Alert) Office Communications Server 2007
Working in partnership with Microsoft, the ApplianX Gateway for Microsoft Office Communications Server 2007 is an easy to deploy, standards-based SIP-to-TDM gateway, which has been specifically designed to allow enterprises to take full advantage of Microsoft Office Communications Server 2007 in a mixed IP and TDM environment. As a certified 'basic hybrid' gateway the Microsoft Mediation Server is incorporated within a single ApplianX Gateway (News - Alert) device. As such it can significantly lower the total cost of ownership, as fewer components are required.

• The ApplianX IP Gateway, an easy to deploy SIP-to-TDM gateway for enterprises and service centers, capable of briding an internal VoIP or packet-switched telecoms network and the external PSTN, a PBX (News - Alert) or private circuit-switched network. It supports an extensive portfolio of global PSTN protocols, such as DPNSS and Q.SIG.

• The ApplianX VoiceXML Media Server, a standards-based media service platform for service center and enterprise installations, can link to either TDM or IP (SIP) networks and execute applications written to VXML 2.0 and CCXML 1.0.

• The ApplianX SIP Trunking Gateway, a TDM-to-SIP (VoIP) gateway, usually installed in an enterprise or service centre. It supports an internal TDM-based telecoms infrastructure (PBXs etc.) and provides access to either remote PSTN services provisioned over a public or managed IP network, or as a VPN replacement using a public or private IP network for transport.

• The ApplianX 3G Video Gateway, extends the abilities of the ApplianX IP Gateway by providing gateway capability between IP-based Video streams and the 3G mobile network. It's suited for service provider and enterprise deployments and supports the popular 3G-324M multimedia protocol.

• The ApplianX SS7 Signalling Node, an SS7 interface unit supporting various 'flavors' of SS7 signalling , including ETSI (News - Alert) ISUP, ANSI ISUP, China ISUP, and many national variants and derivatives. It also supports several TCAP variants, for non-connection

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GoTo:
Table of Contents • Ad Index

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oriented-signaling. ApplianX SS7 Signalling Nodes can be deployed singly, or in load-sharing, resilient, redundant pairs, providing multiple links across multiple trunks, within a single link-set.

So, if your enterprise or service center invests in Aculab's ApplianX devices, you'll first discover that there's no extensive set up or configuration process, then you'll see that you no longer need to source and integrate different hardware and software components from multiple vendors, nor do you have to manage relations and support issues involving multiple vendors. You don't even need to know anything about programming or any low-level enabling technology. You can just sit back and immediately enjoy the exciting new, feature-laden services brought about by your ApplianX product.

With the ApplianX product portfolio, Aculab has begun a new era in economical, fixed-function devices which are powerful in their operation and yet easy to use.

ApplianX products can be purchased through Aculab's network of distribution partners, all of which can be found on the ApplianX website: http://www.applianx.com.   **IT**

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

Microsoft Office Communications Server 2007 — Considerations for Voice Integration

By: Faye McClenahan, Head of Strategic Marketing, Aculab

Microsoft ([News](#) - [Alert](#)) Office Communications Server (OCS) 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.

Within the Microsoft OCS 2007 system a number of different components are required, some providing the means to connect to an organization's existing TDM equipment. These include OCS 2007, Mediation Server, a gateway and office communicator endpoints.

Microsoft Office Communications Server 2007 Voice Components are as follows:

• Microsoft OCS 2007 — this is the main controlling application, exclusively routing all calls. It has its own built-in auto-attendant for answering and routing inbound voice calls. In addition, by adding Exchange 2007 you can gain unified messaging, which presents voice mail and email in a single in-box.

• Microsoft Mediation Server — Mediation Servers enable OCS 2007 to communicate with VoIP endpoints using standard codecs and SIP.

• Office Communicator Endpoints — these include: Office Communicator 2007, an Office Communicator handset or peripheral device, Office Live Meeting console and Microsoft Office Roundtable.

• Gateway ([News](#) - [Alert](#))— bridging between TDM and IP endpoints.

The gateway component plays an essential role in allowing enterprises to maintain an existing TDM infrastructure yet benefit from the advantages Microsoft OCS 2007 can bring. Microsoft certification, Total Cost of Ownership (TCO), ease of deployment and configuration, TDM network interoperability and finally voice quality are all important factors to consider when selecting a gateway. Aculab ([News](#) - [Alert](#)) has worked closely with Microsoft to ensure the ApplianX Gateway for Microsoft Office Communications Server 2007 'ticks the box' in all these areas.

Two types of gateway can be used with Microsoft OCS 2007 – the 'basic' and 'basic hybrid' gateway. As its name suggests, the 'basic' gateway simply acts as a standard gateway device, converting IP traffic to TDM traffic and vice versa. It connects to Microsoft OCS 2007 for call control and to a Mediation Server for transcoding and security.

Time and effort must be dedicated to configuring the 'basic' gateway to work with Microsoft OCS 2007 and additional time and effort to integrate and connect to the Mediation Server.

Similar to the 'basic' gateway, the 'basic hybrid' gateway converts IP traffic to TDM traffic and connects to Microsoft OCS 2007 for call control. However, instead of a separate Mediation Server being required, the Mediation Server function is run inside the 'basic hybrid' gateway. This lowers TCO, as fewer hardware components are required, which in turn makes integration easier. Furthermore, voice quality is guaranteed because audio is not unnecessarily forced through the network.

The ApplianX Gateway is a certified 'basic hybrid' gateway. It has undergone a very rigorous testing process to ensure optimum performance is gained from the combined gateway and Mediation Server and it has been fully tested under full four-port T1 load to ensure there is no degradation of audio quality. In addition, it has been preconfigured to work with Microsoft OCS 2007. A setup wizard will have the ApplianX Gateway accepting calls in four simple steps — as such it takes less time to install, allowing for further time savings.

The integration of telephony with IP-based communications is no easy task. The telephony world is still subject to government regulation of varying degrees, be it of service providers, devices or even standards. Additionally, many national networks operate using different varieties of telephony protocols. And finally, many countries will require that products are certified to connect to the national PSTN.

A similar scenario exists for PBXs. Many variants exist, supporting different protocol 'flavors'. Whether you are concerned about the country you hope to deploy Microsoft OCS 2007 or the PBX ([News](#) - [Alert](#)) you will be connecting to, the ApplianX Gateway supports the widest range of network and PBX protocols — increasing the likelihood of a trouble-free deployment.

For further information please review Aculab's Webinar: "Microsoft Office Communications Server 2007 — Considerations for Voice integration" (www.tmcnet.com/webinar/applianx-aculab).

Contact Faye McClenahan at Faye.McClenahan@Aculab.com.

Talking with David Mandelstam, CEO of Sangoma

By: Richard "Zippy" Grigonis

David Mandelstam ([News](#) - [Alert](#)) is the Founder, President and CEO of Sangoma Technologies Corporation (www.sangoma.com) a provider of advanced PC-based telephony hardware and software products – such as telephony cards and drivers – for networking and telephony solutions that are proprietary or open source-based (such as Asterisk ([News](#) - [Alert](#)), Call-Weaver, FreeSwitch and Yate).

In a May 2000 reverse takeover, Sangoma Technologies became publicly traded on the Toronto Venture Exchange as Sangoma Technologies ([News](#) - [Alert](#)) Corporation. Mandelstam holds a B.Sc. degree in Mechanical Engineering from the University of Witwatersrand in South Africa, a M.Sc. in Aerodynamics from the Cranfield Institute of Technology in the U.K. and a Bachelor of Commerce from the University of South Africa.
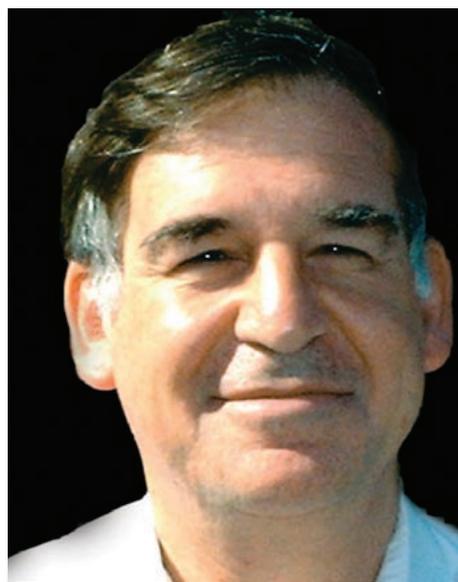
RG: Has open source finally 'matured'?

DM: Open Source technology, telephony in particular, is at a very interesting stage where people are actually starting to make some reasonable amounts of money out of it. The field used to consist of relatively few people who did specialized products for specialized requirements: call centers, special PBX ([News](#) - [Alert](#)) configurations, special connections between old PBXs and new VoIP systems, that kind of thing. They were all individually engineered. People are now building appliances and PBXs and so on, more on a cookie-cutter, production-line basis. It's quite a different business model.

RG: I thought it was always difficult to make money with open source, because you don't sell the thing itself, you sell the 'surround stuff' such as hardware and support.

DM: Yes, it's strange, because there's this great big hole in the middle of the model, and it's the 'satellite stuff' that generates revenue. People price this satellite stuff in ways which imply the value of the open source. They'll sell something which you might think isn't quite worth what they're charging for it, but in conjunction with the open source software, it is in fact very much worth it. Take Red Hat's server, which is not very different in price from Microsoft's ([News](#) - [Alert](#)) server, but the bulk of it is 'free'. Of course, in the end, nothing is absolutely free. But the trick is how to monetize your open source code. I mean, look at what's happening to Digium ([News](#) - [Alert](#))– they're becoming a PBX company. They still make money from open source by doing peripheral stuff like selling cards, G.729 licenses, support and conducing training. In theory, they could take what they've got and just package it and sell it. It's interesting how many people are happier to pay for something than to get it absolutely free. People who are uncomfortable wearing a beautifully done $125 suit of clothes will nevertheless proudly wear a $1,200 fashionable brand.

RG: Is the open source industry evolving?

DM: We're pioneering a mixture, at the driver level, of open source and closed source projects. There are certain things open source does very well and there are other things that it doesn't. Let's take SS7, which has large certification costs in terms of time, effort and money. SS7 is a very poor candidate for an open source product because the payoff for certification is one or two installations for one or two customers. It just doesn't work. Successful open source projects that don't involve any kind of certification generally tend to be more pragmatic – such as Lippri. Nobody is going to take something like Lippri and try to certify the whole stack. First, you can get away without it, and secondly, it's very expensive to do. But with SS7 you don't have that choice – you must certify it, and so it just doesn't work as an open source project.

That's why our SS7 software is a closed source product – we acquired the company that made it, in fact. Our code is amalgamated in such a way that it's sufficiently isolated from open source so that no one can accuse us of any kind of license violation or whatever. After our SS7 success, we built our BRI card, bought a BRI stack and we amalgamated it into the Asterisk environment the same way we did SS7. The value of doing that could be seen just last week when we discovered a code bug, told the people who provided the code, and two days later we had a fix. If that had been an open source project, those issues would have hung around for some time before they would have been corrected.

So there's a place for proprietary code, and a place for open source code, and we'll produce more closed source component projects. There nothing wrong with introducing proprietary stacks into the open source mix to improve the system. After all, somebody could say, 'Asterisk voicemail is good, but I want to use my own superb proprietary voicemail system.' And that can be amalgamated with the Asterisk code too – why not?   **IT**

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

GoTo:
GoTo:
Table of Contents • Ad Index

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Sangoma Intros New Data Cards for Mission-Critical Communications

Sangoma Technologies introduced its new A142 and A144 data cards. These high-speed, two-port and four-port synchronous serial data cards reduce system load. Replacing the legacy S5141 and S5142 cards, the new A142 and A144 data cards improve system efficiency, and support multi-megabit speeds on all ports. The design of the cards is based on the same advanced engineering as the AFT product line.
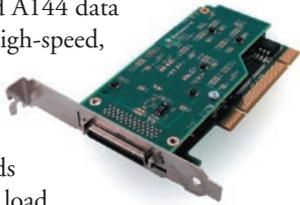
www.sangoma.com

Brix Networks Signs Reseller Agreement with Harris Stratex

Brix Networks has entered into a worldwide reseller agreement with Harris Stratex Networks, an independent supplier of turnkey wireless transmission and service assurance solutions, through which, Harris Stratex is reselling Brix Networks' product portfolio around the world as part of its NetBoss network management offering.

www.brixnet.com
www.harrisstratex.com

Pika Expands to Support Fax Apps on Asterisk

Pika Technologies announced it has expanded its product range to support fax applications built on the Asterisk platform. In a logical evolution of the product, Pika Fax software is now extended to Asterisk, allowing developers on the platform to build fax capabilities into their applications.

www.pikatechnologies.com

Sun Completes Acquisition of MySQL

Sun Microsystems has completed the acquisition of MySQL, a developer of open source database, for approximately $1 billion in total consideration. Sun also unveiled the availability of MySQL's complete portfolio of products and enterprise services backed by its 17,000 sales and services organization and its extensive international network of authorized distribution channels.

www.sun.com
www.mysql.com

SoftLayer Launches Next Generation of Industry's First Open API

SoftLayer launched its Application Protocol Interface (API) 3.0, an even more enhanced version of the industry's first open source API, providing system-to-system access to the more than 100 backend functions also available through SoftLayer's proprietary, industry-leading Customer Portal. It can securely connect any system regardless of device or location — even mobile devices such as a RIM Blackberry or Apple iPhone — via SoftLayer's innovative "network-within-a-network."

www.softlayer.com

Adobe Flex-es New Tools, Breathes Fresh AIR Into Development Community

Adobe announced the availability of its new Adobe AIR and Adobe Flex 3 software, a pair of new offerings that are designed to expand Adobe's technology platform for rich Internet applications (RIAs). "Businesses that leverage the Web as a platform are now using the latest Adobe RIA technologies to build and deploy more engaging applications with the widest reach across browsers, desktops and operating systems."

www.adobe.com

Digium and Metaphor Solutions Announce Partnership to Offer Speech Recognition-based IVR Solutions to the Asterisk Market

Digium and Metaphor Solutions announced a partnership offering Metaphor's On-Demand Plug & Play IVR application suite for the Asterisk market. Plug & Play IVR allows Digium customers to use the Web to self-configure, customize, deploy, manage and report on high quality speech recognition-based application packages in minutes. Small and mid-sized businesses can easily configure these speech IVR solutions to connect to their on-premise or managed Asterisk IP-PBX platforms.

www.digium.com
www.metaphorivr.com

Open Solutions Alliance Marks First Birthday

The Open Solutions Alliance, which describes itself as "a nonprofit, vendor-neutral consortium," dedicated to "driving the interoperability and mainstream adoption of comprehensive open products," marked its one-year anniversary. "The commercial open-source industry is no longer in an early-adopter phase. Now that we've entered the mainstream phase of adoption, it's even more important that open products have the fit, form and function that an enterprise organization expects."

www.opensolutionsalliance.org

Telecom Leaders to Build CP-TA Products Based on AdvancedTCA, AMC, and MicroTCA Specifications

Ten telecom leaders have signed on to support, design, and build CP-TA tested products that meet CP-TA interoperability requirements. They are: Continuous Computing, Emerson Network Power, Intel, Interphase, Kontron, Pentair/Schroff, Performance Technologies, Polaris Networks, RadiSys, and ZNYX Networks.

www.cp-ta.org

Concordia University Gives BlueNote the Green Light for Web-based Voice

By:Erik Linask

Concordia University, a 34-year-old university in Montreal, Quebec, Canada with two campuses about seven kilometers apart, boasts an innovative academic environment for its more than 40,000 students.

Naturally, an innovative institution strives to provide advanced technology to provide an enhanced educational ecosystem for its students and faculty. Concordia's IITS (Instructional and Information Technology Services) group already oversees a fiber optic network connecting the downtown and west-end campuses, as well as a WLAN infrastructure that provides wireless access to nearly all parts of both campuses, which include 75 buildings.

Its extensive IP infrastructure also includes Cisco (News - Alert) Unified Communications Manager, which enables VoIP services to faculty, staff, and some students. However, IITS was keen to leverage its existing infrastructure to further enhance the communications capabilities across its facilities.

More specifically, it was looking to provide convenient, available voice capabilities to its existing IP services, while also enhancing support for its users, including improved Help Desk capabilities.

To meet these goals, IITS opted to add interactive voice services to its Web-based student portal, which would provide a simple means of communication within the community. It also decided to implement click-to-call and click-to-chat facilities to the IT Help Desk, which it hoped would improve support services. The final piece of the project was an IP softphone client that would complement existing voice, video, and data services with easy access from any location.

"In reviewing and selecting a communications services solution, we were focused on companies that understood our current needs, and that also had the vision to provide for our future growth," said Andrew McAusland, associate vice president of IITS at Concordia.

After considering several alternatives, the university chose BlueNote Networks' (News - Alert) SessionSuite solution to provide the enhancements to its communications system.

"BlueNote's SessionSuite solution allows us to efficiently deploy advanced interactive communications capabilities for our faculty, staff, students, and extended user community. This is made possible by using a single, flexible software platform that leverages our current infrastructure."

BlueNote delivered three elements of the SessionSuite family as it delivered on the initiative: the SessionSuite SOA Edition platform, the SessionSuite WebCaller thin telephony client, and the SessionSuite Desktop IP softphone client.

SessionSuite is designed to facilitate the integration of real-time communications into business processes and applications, improving productivity and convenience. One key is that its pieces can coexist with Concordia's Cisco deployment, thanks to its open, modular software architecture. Rather than replacing existing infrastructure, BlueNote is delivering a solution that will enhance it.

At the heart of the BlueNote solution is the SessionSuite SOA Edition Business Communications Platform, which delivers Web-based IP voice to the Cisco infrastructure, allowing the University to easily incorporate voice and video to its Web services and applications. While it can perform as a standalone solution, the value proposition for IITS is in SessionSuite's ability to seamlessly interface with the Cisco Unified Communications (News - Alert) Manager.

The SessionSuite WebCaller component is a customizable telephony client — supporting both voice and text — that is ideal for Websites, Web 2.0, and software applications, which is specifically designed to implement interactive Web-based communications. With WebCaller, IITS was able to easily add real-time voice communications to its student portal, as well as add the improved functionality it envisioned for its Help Desk, including providing the capability to participate in multiple chats at once to maximize productivity. It also adds the click-to-call and click-to-chat features IITS wanted.

Finally, SessionSuite Desktop is a Windows-based softphone application that can be loaded onto students' laptops, with which they can place VoIP calls wherever they are, adding a mobility aspect to the productivity enhancing features enabled by SessionSuite.

According to IITS, SessionSuite desktop is easy to install and use, yet offers all the features it requires, including integration with other popular applications, including the Microsoft (News - Alert) Office suite. In particular, Concordia says it enjoys the freedom SessionSuite Desktop provides, letting users access phone services from anywhere they have a broadband connection.

"In less than a month, we were able to implement the click-to-talk feature — in plenty of time for a major roll-out at the beginning of the school year."

Now, in addition to enjoying the benefits from its Cisco infrastructure, Concordia has delivered mobile VoIP to its entire user base of more than 44,000, as well as having significantly improved the usefulness of its IT Help Desk — a resource that likely is among the most widely used on campus.

GoTo:
GoTo:
Table of Contents • Ad Index

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Delivering Reliable Quality of Service

By: Richard "Zippy" Grigonis

Quality of Service (QoS), which refers to simple network quality parameters such as packet loss, delay and jitter, long ago gave way to Quality of Experience (QoE) which takes into account echo, comfort noise, volume, and Mean Opinion Scores (MOS) in a total end-to-end scenario. Although things have improved over the years with regards to VoIP and video, triple and quad-play service bundles, multivendor environments and hybrid networks still present challenges to service providers and their customers.

Cisco (News - Alert) was one of the first major vendors to tackle QoS / QoE. Cisco's IOS Multiprotocol Label Switching (MPLS) and its underlying concept of assigning high delivery "priorities" to real-time voice and video packet streams serves as the basis for much of QoS and QoE in networks ranging from IP, Frame Relay, ATM, to Ethernet. Subscribers with differing access links can easily be aggregated on an MPLS network edge since MPLS is independent of access technologies.

Today Cisco offers AutoQoS, which incorporates intelligence involving queuing, dropping, traffic conditioning, queue-depth, drop thresholds, burst parameters, etc., into Cisco IOS Software and Cisco Catalyst Operating Service Software to provision and manage large-scale QoS deployments. It automates consistent deployment of QoS features across Cisco routers and switches for Cisco QoS features and variables with the correct parameters. Users can subsequently tune parameters generated by Cisco AutoQoS to suit their particular application needs, as desired.

With Cisco AutoQoS, service providers can use its 'template driven' approach to reduce the operational expense of provisioning managed services and QoS for voice traffic to large numbers of customer premise devices. Enterprises can also benefit from deployment costs and time up to three times cheaper and faster than a manual approach.

Some forms of quality control are byproducts of new technologies appearing in certain layers in the OSI stack and specific areas in the network. Matisse Networks (News - Alert), for example, pioneered the field of Optical Burst Switching (OBS) with its EtherBurst packet optical transport system that delivers both the efficiencies of Ethernet packet switching and the huge bandwidth of Dense Wave Division Multiplexed DWDM optical technology. Optical burst switching uses optical burst transponders that can communicate directly with all destinations across a metro network. This means no optical circuits need to be pre-provisioned, and expensive circuit transponders don't need to be dedicated for every single communication path. This frees up expensive capital, simplifies network design, and enables the creation of pure packet metro networks where bandwidth shifts in real-time to where it is needed in the network. Relative utilization is further increased by finer-grain QoS and more efficient handling of multicast traffic.

As for companies that specifically target QoS/QoE capabilities, they obviously try to encompass as many networks and services as possible. Brix Networks (News - Alert), for example, offers a wide range of converged service assurance solutions that address the specific VoIP, IPTV, and VPN management needs of carriers, cable MSOs, man-aged service providers, large enterprises, and mobile operators. Their "Brix System" includes BrixWorx (service assurance correlation and analysis software engine), various monitoring sources (Brix Verifiers, Brix software agents, and other performance verification options), BrixCall (voice quality and performance management software), Brix-Vision (comprehensive IP video quality and performance management software), BrixNGN (scalable software that verifies the quality of next-generation networks), and BrixView (advanced analytics and business intelligence software).

In general the Brix System features what's called Brix Tri-Q Analysis, that provides complete VoIP and IP video-based service testing across the three vital areas that impact the success of a real-time service: signaling quality (signaling path performance), delivery quality (media transport performance), and content quality (overall quality experience).

Charles Baker, Director of Product Management at Brix, says, "We definitely see many operators offering bundled services. T-Mobile (www.t-mobile.com), for example, offers their WiFi (News - Alert)-based HotSpot @ Home service, which enables T-Mobile cell phone subscribers to seamlessly transfer calls seamlessly between the cellular network and a WiFi hot spot in the home. It's better than a femtocell, because you don't need a specific device out there. You can just use

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"Another mechanism now being standardized by the ITU is called SOS, (News - Alert)" says MacDonald. "That tries to eliminate line drops for video cell services by detecting increases in crosstalk and rapidly adjusting the data rate to compensate, so the line isn't dropped if somebody else turns on their VDSL modem, and it cross-talks into your line."

"Other mechanisms have been proposed, such as a retransmission mechanism at the physical layer," says MacDonald. "That attempts to reduce the data loss associated with impulse noise on DSL lines." "So, lots of things can be done at the physical layer to improve QoS for broadband access," says MacDonald.

MacDonald elaborates: "As you work your way up the protocol stack, there are various QoS mechanisms you can put in place at the different layers. For example, in our devices we have hardware-based mechanisms in our gateway / router devices which can classify services at layer 2,

3 or 4 using different criteria. The services are classified into different hardware-based queues, and then we provide a scheduling mechanism to ensure that the high-priority services get the highest priority and the low priority services don't get completely starved. So, there's a lot that can be done in gateway-chip type of devices that can be implemented in hardware so as to guarantee QoS for the different service types."

"Then there are ways that you can architect your processor in the gateway," says MacDonald. "With our System-on-a-Chip [SoC] architecture, we have one or two RISC processors which handle routing, management-type functions and customer applications, but we offload the voice processing – the codecs, the echo cancellation – to a separate DSP [Digital Signal Processor (News - Alert)]. That's important because you if have a high call volume at a particular time, your DSP can handle those voice calls without impacting the routing being done on the RISC."

Bridging the Service Quality Gap

By: Yaron Eisenstein

Guaranteeing reliable QoS seems to be an elusive goal for many telecom service providers, particularly given that defining "reliable QoS" in meaningful, concrete terms can be a challenge. We have seen from enough cases that even when a service provider is meeting its own internal KPI benchmarks, customers may still complain of poor service quality. Reliable QoS is QoS which meets subscriber expectations. Therefore, the issue is much larger than simply a healthy network; the service delivery process must be managed in relation to subscriber expectations, their perception of the end-user experience, and how well the gap between these points is minimized.

New service management technology has enabled an improved set of best practices that enable service providers to define and deliver reliable QoS in a way that is more meaningful in terms of customer retention and other business-level objectives.

In order to reliable QoS from the subscribers' point of view, service providers first need to gain a clear understanding of their priorities and expectations. To create a solid knowledge base for policymaking, the necessary data can be gathered to a large extent from within the network, such as current performance and quality levels, usage trends, and any other information which may be leveraged provide insight on subscriber needs and demands. External sources must also be included, such as feedback from customer care centers or other business intelligence. For example, if subscriber expectations change to emphasize disconnection rates, responsiveness to customer feedback, or any other aspect of the user experience, then the operator must update their definition of "reliable QoS" accordingly and adjust their quality monitoring standards.

Having outlined their business-level objectives, service providers can then move on to define meaningful metrics from the customer point of view. In order to take concrete steps towards meeting customers' expectations, operators can take advantage of new OSS tools to create a wide variety of KPIs and KQIs to measure service performance and quality. Since customer expectations — and therefore the Service Level Objectives (SLOs) — can rapidly shift with a new service offering or other market development, a service provider needs tools which can display these custom indicators according to each key customer or customer group, rather than by just by service or network domain. For example, if a provider's subscriber base includes VNOs, enterprises, and private users, each will have different expectations, and so the

operator must monitor its performance for each. Flexibility is also key, as each new service launched may require new custom indicators.

With the tight competition in today's marketplace, it is not simply enough for an operator to meet its SLOs, but it is necessary to do so as efficiently as possible. First of all, operators need end-to-end visibility of traffic and services, with the ability to present service performance in a customer-centric display. A unified mediation layer is an important basis of any OSS platform, consolidating vast amount of data feeds and enabling smooth integration with new data resources as they become available. With a certain level of integration between Fault and Performance Management systems, this information can then be leveraged by more advanced algorithms, such as service-impact analyses, displaying network and service events in terms of their impact on each user's experience. Robust root-cause and drill-down OSS functionalities can analyze these data sources to monitor individual customers or subscriber groups as part of manual or automated processes in the fault resolution cycle, helping to align all aspects of network operation with the organization's SLOs as well as the larger business-level objectives.

Reliable QoS doesn't end with SLO assurance. Service providers must continually manage perceptions, working to improve customer awareness of their capabilities and commitments. With key business customers, this can be done through tailoring SLAs to realistically define what their expectations should be. For the general consumer base, a provider can define reasonable SLOs for both technical indicators such as call success rate and service availability, as well as broader aspects of service delivery such as customer support responsiveness.

Service providers must address the issue from both angles: it is equally as important to meet customer expectations as it is to let customers know what to expect. It can be easy to place more of an emphasis on the delivery aspect, and rightly so, as this is the area which makes the most concrete impact on the end user experience. Nevertheless, in designing their SQM solutions, operators must keep all aspects of operations aligned with their larger business-level goals in order to achieve meaningful success for the organization as a whole. **IT**

Yaron Eisenstein is the Director of Marketing of TTI Telecom. For more information, visit the company online at www.tti-telecom.com.

Quality Ethernet

Extreme Networks ([News](#) - [Alert](#)) designs, builds, and installs Ethernet infrastructure solutions for enterprises and service providers demanding high performance, converged networks that support voice, video and data, over a wired and wireless infrastructure. Extreme Networks provides automation functionality with its Universal Port software, integrated in their ExtremeXOS operating system.
Peter Lunk, Director of Service Provider Marketing, says, "If you look at both telephony and triple play services, and if you think about residential networks, we fit in there at an aggregation layer, where we might be bringing in a number of DSLAMs or similar equipment and we aggregate the traffic. We don't typically make the 'first mile' gear, that's usually done through partners. We find that the place that we must perform the QoS function is at the first aggregation point. ATM-based DSLAMs have more or less gone away, and there's been a big move to Ethernet, so there's been an increased need for QoS methodologies on Ethernet aggregation gear."

Multilayered QoS for Reliable VoIP Service

By: Oded Tubias

The advancement of broadband technologies has opened the frontier for wide-scale service provider deployment of VoIP services. Service providers that take advantage of this opportunity cannot compete on price alone. For a VoIP service to be a success, it must rival PSTN reliability and voice quality. This can be achieved by deploying a VoIP system with Quality of Service (QoS) mechanisms that ensure the delivery of the toll quality voice that customers expect from traditional fixed line telephony.

Despite the standardization of IP telephony protocols, not all VoIP systems are created equal. A system with a multilayered QoS architecture best provides the safeguards to neutralize the factors that can degrade voice quality in transporting IP phone calls. The failure of a VoIP service to deliver quality communications can quickly eat into profits and run it out of business. Effective QoS thereby enables VoIP service providers to keep Opex down while maintaining customer satisfaction.

The Resource Layer

While the beauty of VoIP is cost-savings from the convergence of voice and data networks, the flip side is the co-sharing of the data communications bandwidth resources at the customer's disposal. To overcome the resource competition between voice and data that can potentially harm voice quality, a VoIP service provider must enable customers to control resource distribution, giving processing preference to real time voice packet traffic. The base of a multilayered QoS design for ensuring voice prioritization is therefore the resource layer.

To ensure that the quality of phone conversations is never compromised, the CPE should carry out traffic shaping, giving priority to the real time traffic. In this method, bandwidth use is controlled dynamically, reducing the amount of bandwidth serving data applications and making more available for voice. This QoS provision controls bandwidth according to demand, with voice always getting preferential use of customer resources. The passage of data should be halted completely by the CPE if necessary to ensure maximum bandwidth for voice traffic.

The best solution to the QoS resource challenge is to offer customers a "private virtual connection" (PVC). In this architecture, separate channels are created for voice and data transmission from the CPE to ensure there is no competition for resources, with each application having its own reserved path. In this way QoS is guaranteed, since there are dedicated channels for separate voice and data traffic, removing the risk of congestion created by the flow of two traffic types.

The Priority Layer

In the best-effort world of IP, standards for conduct are being widely adapted throughout networks, resulting in the rapid transformation of VoIP into a service with end-to-end QoS. This is achieved by using tagging, the priority layer of multilayered QoS architecture. The labeling of the header of a packet according to Type of Service (ToS) gives instructions to the IP network on how to handle the packets and how to prioritize the traffic according to the type of packet's content. According to this regime, real time voice packets should be given the right of way by all networks.

VoIP QoS can also be guaranteed at the priority layer by offering customers a system with VLAN, which is another type of tagging. If the provider supports VLAN along the network, it can give priority to a specific VLAN tag according to a pre-defined prioritization mechanism, handling VLAN-tagged traffic with its highest QoS capabilities. The priority layer is, therefore, the heart of VoIP QoS, transporting instructions to the network to ensure the uninterrupted flow of voice traffic in the network.

The Management Layer

The top layer for delivering QoS to customers is a centralized VoIP network management system. A central integrated management and provisioning system supplies the voice quality monitoring that is crucial for providing a quality service. The management layer needs analysis tools for end-to-end, real-time service monitoring. The provisioning system should receive call quality data on the levels of delay, jitter and packet loss, delivering alerts when problems arise.

VoIP QoS does not only depend on the service provider's equipment and technology. Many service disruptions arise from problems with Last Mile ([News](#) - [Alert](#)) access technology, usually DSL lines provided by a third party. A service provider has to be able to monitor the quality of the access line and send the information to the central provisioning system for analysis. This capability has the added benefit of enabling service providers to set up QoS before the VoIP telephony service is operated, thereby ensuring customer Quality of Experience right off the bat.

Quality of Service brings Quality of Experience

A VoIP system with the right composition of QoS tools can ensures service provider delivery of a Quality of Experience that rivals the toll quality of PSTN service. VoIP service providers that provide customers with a smooth transition to VoIP with consistent voice quality can succeed in this competitive market. **IT**

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GoTo: GoTo:
Table of Contents • Ad Index

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"With triple play services, in the past there was a model where you would assign a VLAN [Virtual LAN] for each service type running back to some sort of service router in the POP [Point of Presence] or the cable head-end," says Lunk. "But now, we see service providers adopting a different model where they actually offer a VLAN for each subscriber, and they would like to provide distinct QoS for each subscriber application, whether that be voice, video or just data connectivity. It becomes a tiered QoS where, on a port on an Extreme Networks aggregation switch, you want to be able to limit how much bandwidth is coming in on that port. We might have 300 to 500 subscribers coming through if there's a DSLAM on that port, and we might want to limit each one of those subscribers to some fixed bandwidth. And, with each one of those subscribers we also might want to classify their voice traffic as having the highest priority, even above video, then make sure video is prioritized above the data bandwidth, but then allowing the data to peak if the subscriber isn't watching video. You also want the flexibility to be able to offer different packages."

"If you have 300 to 500 subscribers on each Ethernet port, and then you have a switch that has 20 ports, you're talking about tens of thousands of subscribers on a single module in the worst case," says Lunk. "So, one trend we see is a move toward silicon-based QoS processing, specifically around the residential model where you have a tiered, hierarchical QoS. For the past ten years we've had Ethernet switches equipped with a hardware-based QoS capabilities with, say, eight queues going onto a backbone, but now we're dealing with something different – controlling things down to the application level and going out to the subscriber-facing ports. We were one of the first to do that in silicon."

QoE Drills Down

Psytechnics ([News](#) - [Alert](#)) is a leading provider of software solutions for assessing and managing QoE for real-time voice and video. Service providers and enterprises worldwide use their products to monitor, manage and improve IP telephony, video and unified communications solutions in both fixed and mobile environments. Psytechnics' Experience Manager product augments traditional data network management applications by delivering real-time alarms, drill-down analysis and advanced diagnostics involving voice and video. Experience Manager can identify call-ruining issues that many other solutions are unable to detect, such as echo and noise. Besides analytics and diagnostics, Experience Manager aggregates Quality metrics for SLA reporting and trending.

Benjamin Ellis, Psytechnics' Vice President of Marketing, says "We see that VoIP is really bringing home the practical issues and applications of QoS. People have been talking about QoS for a long time but now it's becoming more of a visible service issue since people are making heavier and heavier user of VoIP technologies. A few years ago, people took a network view of QoS, measuring packet loss, delay and jitter at one point in the network. But as soon as you introduce VoIP or videoconferencing into the network, existing definitions become problematic for a number of reasons. The first is that you're looking at links, and when delivering voice or video, people care less about the link and more about what happens with the actual user. When you look at QoS for non-real-time applications such as web access, you can get away with a fair amount of variation. But as soon as you start dealing with real-time voice and video, quality becomes really visible to the end user in terms of what the actual QoS is that's delivered. Now you're looking at individual user streams or user experiences, as opposed to what's happening with a whole 'pipe' of packets."

"If I have 100 voice calls traversing a circuit," says Ellis, "I need to understand what's happening with every single one of them, as opposed to what's happening with the whole gigabit Ethernet link."

"The term QoS itself is evolving," says Ellis. "Many people use the term QoE for Quality of Experience. We've used it for a long time, just to differentiate what we call a network view, which is operationally useful. But when you talk about real-time voice and video, it's more about QoE, which includes what's happening up at the application layer. QoE is more than just packet loss, delay and jitter, it's about echo, whether the call was loud enough, whether it was distorted in some way, and so forth. These things are completely invisible to the IP world, and many of these other problems come from voice gateways. The challenge is that they don't show up as packet loss and jitter. You have to look at the streams, and you have to be aware of what's happening in the network too."

Making packetized voice and video an enjoyable user experience is a major challenge these days, but it's also a major opportunity for those innovative companies with the technologies that successfully help service providers as well as their corporate and residential customers. **IT**

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

Service Creation for Service Providers

By: Richard "Zippy" Grigonis

Thanks to such innovations as Service-Oriented Architecture (SOA), Web Services and the panoply of items making up the world of Web 2.0 (or 3.0), service providers now have an array of modularized, productivity-enhancing techniques for creating new services. Rather than reinventing the wheel, service-independent logic modules can be assembled along with existing "converged" network product solutions. Thus, advanced IP Communications services can be rapidly developed and deployed. But which services will outshine the competition?

BEA Systems (News - Alert), Inc. is a global leader in enterprise infrastructure software. BEA Enterprise 360° combines their product technologies, people, best practices, and a huge network of partners to create what BEA calls the Liquid Enterprise, a flexible adaptive environment that combines SOA, Business Process Management (BPM) and Enterprise Social Computing. BEA is famous for such products as BEA AquaLogic, WebLogic, and Tuxedo.

BEA's Ken Lee (News - Alert), Director of Worldwide Marketing for the Communications Platform Division, says, "Service creation is a very important topic for all service providers as they move to an IP-based architectural foundation. BEA has been pretty consistent in what it has been doing over the past three or four years. As operators have evolved their legacy networks toward converged network architectures, they've consistently looked at an IP-based services layer. That's a layer above the core network or session network where you find service creation, execution, orchestration and exposure. These are all ultimately needed under the label of a service delivery platform."

"What's critical is to have the core technical features and capabilities and to do two things with that," says Lee. "Not only do you need to have those capabilities in terms of messaging, call control, presence, location, conferencing and so forth, but if you have those, you need to be able to 'expose' them to third parties and developers. The reason you want to do that is because you want service creation 'proliferation', if you will, within your ecosystem of application providers and content providers. Not all operators have enough engineers with the skill set or resources to create all of the services that they will need, because what everyone is looking for is not a single 'killer app' but a portfolio or ecosystem of services. Some will survive and be successful as a commercial service, others will not."

"The architectural view that BEA has consistently proposed and has successfully implemented with many operators is one based on open industry standards, such as Java, SIP sevlets and Web Services," says Lee. "Increasingly, they're combining those attributes to serve the segment of their customer base interested in what Telecom Web 2.0 can do for them. The comprehensiveness of what you need here is pretty challenging, and I think that it has become obvious that vendors can supply this comprehensive combination of IT, web and telecom capabilities as a sort of a middleware application infrastructure, such as our WebLogic communications platform product family."

"The crux of what BEA does in terms of service creation and service delivery centers around our WebLogic SIP application server and our service exposure and policy platform called WebLogic Network Gatekeeper," says Lee. "Both of them are critical to implementing service creation and execution. If you want to have a lot of service capabilities, you need an application server that can first and foremost implement those capabilities. It's a multi-step process to realize service creation — its core has a sort of application 'container' or service container that will execute those capabilities, such as instant messaging, presence, conferencing, VoIP and call control. These are pieces

GoTo: GoTo:
Table of Contents • Ad Index

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of software that need to executive within a container, which increasingly needs to be a single converged container that can cut across and bridge IT, web and telecom protocols. As it happens, WebLogic SIP Server is that container foundation for all of the network operators that have implemented our products."

"The second piece is that, if you have many of these capabilities, you need to be able to reuse and recompose these capabilities," says Lee. "You can't build a silo every time you need new applications. You really need to use them horizontally. The way to do that, the way to allow one application to use features of other applications, can be found in the concept of SOA. And at the core of SOA is the universal language of Web Services. What you need here is not only a SIP IMS [IP Multimedia Subsystem (News - Alert)] container, but a Web Services container, and you need that in a single architectural foundation. Again, WebLogic SIP Server and WebLogic Network Gatekeeper both have native Web Services containers."

"So, from a service creation perspective, some operators and service providers go out and buy a Web Services container and buy another one for a SIP container and then have another one for a presence server and another one for a conference server — well, they can do that if they want to," says Lee. "But BEA offers an architectural alternative that says, 'Look, in a single container, you get SIP, IMS and Web Services, and then when you're ready to start orchestrating them, you can expose these new capabilities as Web Services. When you look at SOA components such as Enterprise Service Buses, and also Business Process Engines, and service repositories — these are all working high up in the OSI stack, and once you build out a lot of services, you need to orchestrate them and allow them to be discovered and registered."

"Finally, you need to be able to have alternative business models — meaning that, as an operator, you can brand these services and roll them out to your core subscribers," says Lee, "but then you might want to build out a sort of a consumer portal community too. So not only do you have a branded service, you can have a sort of open community service and that's where the Web 2.0 paradigm comes in, along with concepts such as mash-ups of various network and Internet capabilities, the ability to blog and Wiki, to be able to syndicate content, and also to enable user-created content. These aren't big money-makers, but people find them interesting."

"Service creation is essentially the ability to create new capabilities and then orchestrate those capabilities and then expose those capabilities to consumers as well as your core subscribers who will pay for those services," says Lee.

Man in the Middle

In order to quickly develop and deploy services, having solid middleware is a major consideration. One this "glue" is in place, other components can follow suit.

Take for example VoIP Logic (News - Alert) (www.voiplogic.com), global provider of VoIP managed services and solutions enabling service providers to build and manage customized, flexible and scalable IP telephony rollouts. Their principal tool is the Cortex middleware system that enables service providers to provision and monitor service

offerings on best-of-breed systems and provides their end-users with a single point of self-care. Cortex is a friendly software-based services creation environment in which providers can provision new users and design their requirements such as billing, CDRs, voicemail, DID management systems, etc. for a VoIP rollout, and then deploy the offering with minimal delay and expense. Cortex serves as a secure, unified system management portal from which all the components of a multi-system VoIP rollout can be controlled, and visible to all levels of an enterprise. Cortex even enables wholesale carrier technical support professionals to remotely monitor and service customer sites with a scalable, secure, customizable solution that leverages a client's existing best practices.

The Art of the Transaction

Openet (News - Alert) is a well-known provider of event processing and transaction management solutions. The "Transactional Intelligence" of the company's solutions extracts increased value from service provider networks, allowing for the rapid introduction of new services and reliable, cost-effective management of existing services. Openet focuses on delivering best-in-class network edge solutions and specialized engagement processes that create business value from network activity. Their clients include such service providers such as AT&T, British Telecom, Orange and Verizon (News - Alert) Wireless.

"...the way to allow one application to use features of other applications, can be found in the concept of SOA. And at the core of SOA is the universal language of Web Services..."

Mike Manzo, CMO of Openet, says, "We provide a transactional set of solutions that enable providers to monetize and personalize their services as well as control what's happening on the network. We're not explicitly a service provisioning or creation company, though we do have elements that perform some of those functions. However, in large part we work 'downstream'."

"There are a number of important angles to this subject," says Manzo. "The first is the business process for actually creating and services and how it happens. Secondly, one should ask what's important to carriers going forward about the services they offer and how they get created."

"We see service creation criteria as morphing over time," says Manzo. "There appears to be a great push by the operators to ensure that there's greater level of control in their network to be able to monetize and personalize services as well as to be able to control what happens on the network. When I say 'monetize' I mean doing things such as real-time billing, tier-grade plans, in-session promotions of various capabilities. For example, 'People who bought such-and-such item number one were also interested in item number two'. Then there's upselling of network capabilities. We can give you a one-time bandwidth boost or enable QoS for an extra dollar or two. Then there's enforcing credit limits. We've all seen the wonderful AT&T hubbub about the $87,000 iPhone (News - Alert) bills, because of the inability to enforce usage limits. And of course, there's the matter of settlement with partners."

"We see providers doing all of these kinds of things," says Manzo. "We see loyalty programs being imposed. We see them giving a flexible self-care portal to end users that allows them to create their own usage limits — for themselves, for corporate employees, for children on family accounts and so forth — so that there's a pretty robust ability to control how much of what service gets used, when, where and by whom. We see a great deal of work being done in flexible account types and billing plans. So, let's say I'm a corporate user and but I want the ability to do more with my phone than my company authorizes me to do — in that case, let me have a second individual account that can be prepaid or postpaid, so I can do all the calling activities that my company won't normally let me do."

"All of these different use cases relate to an infrastructure that is much more flexible than it has been previously," says Manzo. "It enables providers to allow a great level of personalization to the end user over how their account is designed and how their services are provisioned. It also allows them to control what's happening in the network in real time. When creating services, these are all considerations. You're out there creating a much more flexible set of services — this is not a 'one-size-fits-all' model — and so the infrastructure needs to be easy to use and pre-integrated as well as enabling a great level of control over the network."

"The specific solutions that all of these imply include more flexible balance management capabilities that prepaid platforms will allow, so they can come up with any type of balance for any type of account structure and payment plan," says Manzo. "They also need a policy enforcement or policy decision infrastructure that allows them to, in real time, have transactional-based request-responses enabling access to services by end users and/or to allocate network resources on demand. Obviously, the charging and rating infrastructures should be able to do both voice and data charging in tier-grade plans, enable the configuration of MRCs, loyalty programs and things of that nature."

It looks like it's time that users let their service providers know what kinds of churn-reducing services they'd like to see in the marketplace. **IT**

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

The following companies were mentioned in this article:

BEA Systems
www.bea.com

VoIP Logic
www.voiplogic.com

Openet
www.openet.com

How to Launch a VoIP Service Provider
By: Micah Singer

The frequency of services being introduced to the market that leverage VoIP technology is accelerating. The majority of the 'killer' Voice 2.0 applications use VoIP in concert with mobile networks and the traditional PSTN. So whether you are launching a standard consumer VoIP service, or a much more complex integrated, converged application, here are six simple "rules of thumb" as you prepare to launch (or re-launch):

1. The Team. It is of the utmost importance to ensure that a solid, experienced project manager is leading your team, who understands VoIP engineering and who has a clear plan for customer support services — which often is more time intensive than anticipated. Even when working with an outsourced provider, you will most likely want to keep technical understanding of the mission-critical systems in-house. If systems integration is required, then a person knowledgeable about your legacy systems should be on the team as well.

2. IP Network. If you choose to run your VoIP service over the public Internet, then you need a target customer base that technologically savvy (it's not working because the DSL isn't working!), as there is a limit to what customer service can do to remedy repeated problems. If you choose a pricey MPLS or private network, make sure it works as well as the PSTN and take your 100% uptime goal seriously.

3. Offer Logic and OSS. This is where the marketing magic meets the technology. To be successful, it is essential to develop a pricing and marketing strategy that can be supported by your underlying systems, and presented and managed by all actors — end-user, group manager, customer service, management — with proper access and control. End-user customers will not tolerate underperforming Web applications.

4. Billing/Payment. BSS — Business Support Systems — billing and collections integration with the overall management infrastructure allows scalability, but is often expensive when you first start out. Many carriers start with a very easy flat rate model with no moving parts, which is most likely your best option (unless you invest some time and money in a flexible system that can anticipate changes you might need to make).

5. Keep it Running. Your team and your network of outsourced partners, including collocation facilities hardware vendors and system vendors, and the ability of your in-house technical staff to access information and alerts in a timely manner, are crucial. It is smart to keep customer support speaking with engineering internally, and to be very structured in upgrading to new software versions on core systems (have a rollback plan, for instance).

6. Make it Sizzle. There are lots of really innovative and useful ideas out there for service providers — one number, click-to-call, ad-supported VoIP, voicemail-to-text, voicemail to email, etc. — come up with your idea. Many of the current crop of Voice 2.0 service providers are recycling older technology integrated into some newer systems. What this means is the technology integration to make it sizzle might be within your budget. **IT**

Micah Singer is CEO of VoIP Logic (www.voiplogic.com), a global provider of VoIP managed services and solutions. The company enables telecommunications service providers worldwide to build and manage customized, flexible and scalable IP telephony rollouts. From VoIP managed services to its award-winning Cortex® middleware system, VoIP Logic provides a comprehensive set of on-demand solutions for service providers looking to use VoIP technology.

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By: Richard "Zippy" Grigonis

IP Contact Centers Reach Out

The IP Contact Center, like VoIP itself, was considered a way to save money on placing and receiving massive numbers of phone calls. Today, however, the potent combination of IP, SIP (Session Initiation Protocol), Unified Communications (News - Alert) (UC) and Presence technology means that agents at remote locations can be added as needed, and that experts outside of the contact center – even mobile ones – can be scheduled for consultation to improve first-call resolution and/or sales. Moreover, the IP communications underpinning these centers can connect to back-office systems in a way that helps optimize an entire organization's workflow and business processes.

Yes, today's customers have never had it so good, thanks to the coming of IP and its related technologies to the contact center.

The clear benefits these centers deliver to both customers and their parent companies is such that vendors have been rushing to overhaul their product lines.

One company has always had innovative products and services for the contact center, enterprise IP telephony and enterprise messaging – Interactive Intelligence (News - Alert). They originally gained fame in the 1990s with advanced contact center automation applications - including Automatic Call Distribution (ACD), Interactive Voice Response (IVR), speech recognition, web collaboration, remote agent support, supervisory monitoring, predictive dialing, call recording, reporting and more. Today they've also added to their capabilities SIP-based enterprise IP telephony, unified communications and messaging, and customer self-service technologies capable of handling anything from a small company to giant distributed enterprises encompassing mobile workers. You can find their systems in such vertical markets as financial services, healthcare, legal, and higher education.

Interactive Intelligence's Microsoft (News - Alert)-based IP communications suite, Vonexus Enterprise Interaction Center (Vonexus EIC) 3.0, pretty much embodies everything they've perfected over the years – ACD for queued calls, web chat and web callback capability, the Interaction Attendant automated attendant for intelligent call and email routing, and a pre-integrated Interaction Supervisor module for monitoring workgroup activities and EIC system performance. This software-centric platform also includes pre-integrated plug-ins for Microsoft Dynamics CRM and GP, along with support of Microsoft Windows Mobile 5 and 6 in its new Interaction Mobile Office application.

As with the most advanced of today's systems, Vonexus (News - Alert) EIC's ACD can quickly find the best match between agent and interaction, thus boosting the ability of workgroups and users to provide a consistently high level of customer service.

UC Comes to the Call Center

Historically, one of the greatest names in the call center business has been Aspect (News - Alert) Software. Years ago, their first ACD immediately established them as masters of call center technology.

Aspect's Candace Berman, Director of Corporate Marketing, says, "We're announcing in March 2008 a repositioning of our whole company. We are now going to market as a provider of unified communications for the contact center. Obviously, UC is a very important phenomenon that various people and organizations define differently. We've spent the last few months putting together the positioning of how Aspect fits into this, what we bring to the market that's different and how we can help our customers and prospects through the process that we know and believe will impact everyone."

Tom Chamberlain, Aspect's Director of Business Process Marketing, says, "We saw that companies such as Cisco (News - Alert), Avaya, Microsoft and IBM were focusing primarily on enterprise communications – how employees within an organization communicate and collaborate. That's all well and good and certainly that will bring some ROI [Return On Investment]. But we believe that there's a perspective and opportunity that's missing from such an approach – the consumer or customer with which people do business. The perspective of the consumer for the most part is missing from these strategies. We see that as an opportunity for us, as the contact center is the corporate 'face' to customers for most businesses. The ability to integrate contact centers into unified communications strategies is a huge opportunity for companies to bring in some return on investment."

"As you know, we publish our Aspect Contact Center Satisfaction Index," says Chamberlain, "which is an independent survey of consumer experience versus expectations of contact center interactions in North America. With the Index we've found that a customer is about four times as likely to do more business with a company in terms of products and services, if that customer finds their call experience to be satisfactory. We've also found that if you can increase your first-call resolution rates with customers, then that becomes a really a huge driver for customer satisfaction. Increasing first-call resolution can increase the top-line part of your business dramatically."

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"As we studied our market and our customers," continues Chamberlain, "we realized that there's a certain portion of calls handled by the contact center that requires some resources outside of the formal contact center domain, such as a warehouse, shipping area, or a finance department. We wanted more precise information, and our Corporate Marketing Manager, Aleassa Schambers, worked hard to gather data on this."

"Yes," says Schambers, "we tried to get some data that had already been collected from organization such as Datamonitor to see how often calls were going outside the boundaries of the traditional contact center. That data didn't seem to exist anywhere, so we commissioned a survey from the same group that does the Aspect Index, Leo J. Shapiro and Associates, and they polled 50 agents and 50 contact center managers to see how many calls they were sending outside on a daily basis. This refers to putting a customer on hold and contacting someone in the enterprise or actually transferring that call out of the center. They found that 10.3 percent of the calls were leaving the contact center. Throughout the world, 95 million calls a day are being transferred. Agents and managers have said that calls transferred to the enterprise take an additional 2.5 minutes to resolve. In fact, it takes them roughly two calls to resolve a customer's inquiry. That adds up to 238 million minutes a day spent sending calls out of the contact center. If you can reduce that time or take that down to first-call resolution, you would save significant amounts of time and money."

Tom Chamberlain, adds, "So we believe that by extending the contact center into the enterprise via presence engines such as Microsoft OCS and IBM (News - Alert) Sametime, it really becomes a natural extension of what contact centers can do today. They can impact the business by reducing the amount of time it takes to get to these casual or knowledge workers and getting them engaged in the customer interaction. Also, in a managed way, you can ensure that the customer doesn't have to call back again to get that same result, thus increasing first-call resolution. We call presence in the contact center 'agent state', a term we've used for 30 years.

"What makes this all unique is that we're going to bring this customer perspective into the process and help bring a tangible benefit to a UC strategy," says Chamberlain. "Also, as you extend the contact center into the enterprise – or really anything into the enterprise with UC – you're going to have an issue as to how you manage the casual agents, who all have full-time, high-paying jobs. So how do you make sure that you know how many of these experts you need? And how do you work with the scheduled times so that they can be interrupted for a call? And how do you report on the use of these people so you don't have certain numbers of people within the organization that are just getting overwhelmed and can't do their regular job? The idea is to be able to utilize our workforce management capabilities to forecast, to schedule these casual agents and to report and analyze the activities going on in relationship to the contact center, so you can make progressive improvements in those business processes as well. These are unique capabilities that Aspect can bring to bear."

"What this does for contact centers and UC strategies is a completely visibility of a transaction into the enterprise, which today occurs only on an ad hoc basis," says Chamberlain. "Customer service reps know of somebody in another department personally or through experience and they IM them, interrupting them whenever they have the need to do so. Responses are therefore ad hoc as well. We can impose a schedule on that, making the whole process viable from a casual or knowledge worker perspective. From an agent perspective, we know that when you ask somebody to get involved with an interaction, if they're scheduled they're

happy to help you as a part of that role."

"So we're announcing unified communications for the contact center on March 10, 2008," says Chamberlain. "After all, that's what we do. Our products and offerings remain focused on the contact center, extending it beyond its four brick walls, to bring in those casual agents as is necessary. In mid-summer 2008, you'll start to see integrations with Microsoft OCS and IBM Sametime. Those are the presence engines that we're starting with, and they will allow us to get out to touch the presence/availability of those expert agents. We're also wrapping into that the ability to record skill-sets for those casual agents so that an agent sitting at the desktop can say, 'I need someone who knows something about X or make a decision about Y, such as a credit line increase.' So if you know the skill-sets of the casual agents as they relate to the call center, you can request not just the person who is available, but the person with the skill-set or the knowledge who can actually do that. You'll start to see such integrations rolling out around our Aspect Unified IP product."

100 Percent IP

Cistera (News - Alert) Networks' Convergence Server enables customers to build a scalable environment that is flexible enough to adapt to their changing needs over time. The CCS platform scales up to support organizations with thousands of users and scales down for offices with fewer than 100, allowing it to fit into just about any kind of organization.

Cistera's Greg Royal (News - Alert), CTO and EVP, says, "Our perspective differs a bit from the competition. We only deal with IP. We believe that IP is the future of world communications. We don't support TDM-based systems. There are a number of philosophical reasons behind this. IP underpins all of modern communications capabilities that were formerly out of the reach of the average user. Many of the capabilities that large call centers and corporations have taken for granted are now beginning, because of IP, to seep down into the sub-25 seat contact center market. That's because both the infrastructure required to run these systems, and the cost of implementing these systems over the years have been dramatically reduced, and the fundamental underpinning that we have in the IP communications market, specifically in contact center customer interaction, is that the whole business becomes a contact center. That sounds like a bit of a cliché, but the idea moving forward with IP communications is that if we can do interaction management on every level of an organization, then that's a far more effective way of managing interaction capabilities and the customer's experience."

"We do IP contact centers and specifically work in the area of customer interactions – that's what we call quality assurance and compliant systems, which is recording and monitoring of IP systems and IP devices that allows you to do quality metrics and quality reporting," says Royal. "So if you have a particular requirement for the government or you've got to report back on third parties, etc., we can do that."

"The example I give in the compliance area for contact systems is a customer called Credit Recovery," says Royal. "They do customer-facing activities for banks, so if you've got a mortgage and you're late with the payments, then somebody will call you up who is a third-party hired by the bank. The banks have a requirement in that they audit those interactions on an ad hoc and a semi-surreptitious basis through an access point that is remote to the actual call center itself. With our system, the bank can actually monitor the Call Center Representatives [CCRs] by dialing into the system via a secure IVR and actually do scorecards of both live conversations and recordings. So, the CCRs' activities can be audited remotely, and independently of

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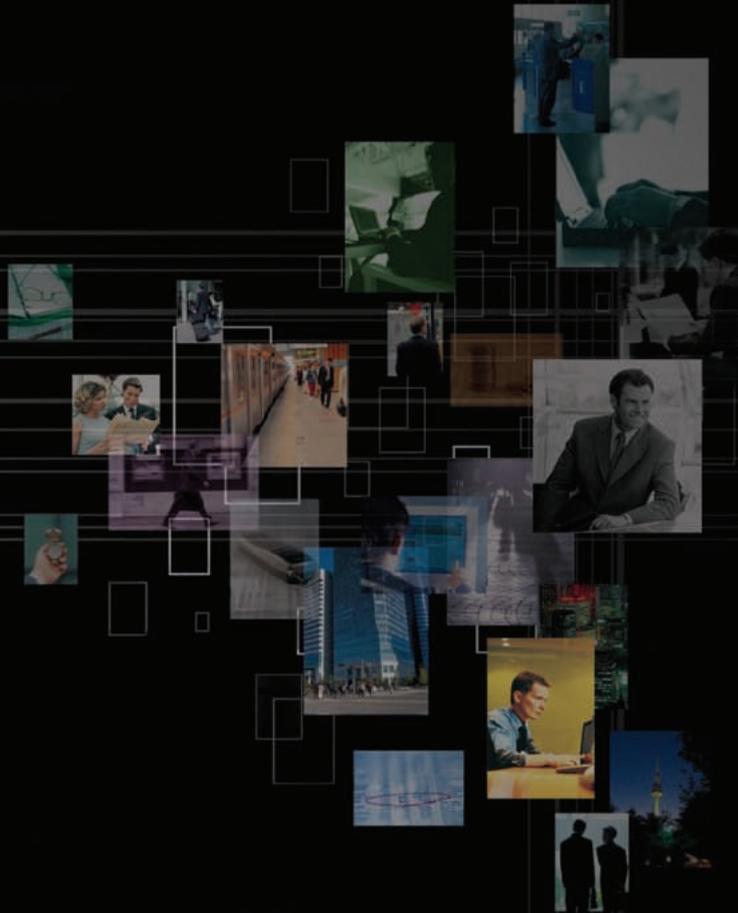
the internal mechanisms. That feature has been quite popular in both our financial services area and some ISVs run that because they provision third-party broadband and wireless capabilities which are branded for another company. The company that we've done our case study on in this area is Whiteport, based in Austin, Texas, which does white label broadband wireless for companies such as AT&T and McDonalds."

In Unity There is Strength

Spanlink ([News](#) - [Alert](#)) Communications is a leading provider of unified communications and customer interaction solutions leveraging Cisco's technology. Spanlink helps companies exploit the benefits of virtual UC networks for business transformation. Spanlink applies expert consulting, deployment, integration and managed services to tailor each customer's solution and support plan to its business needs for transformational business improvements in productivity, efficiency and customer satisfaction. Spanlink is a Master certified Cisco partner serving mid-size businesses and large enterprises.

Brett Shockley ([News](#) - [Alert](#)), Spanlink's CEO, says, "Spanlink jumped into the IP contact center arena in a big way in 2000. Cisco made a big investment in our company and we refocused all the company's efforts into 2000 around the IP contact center. I was at Cisco in 2000 and was running their contact center business. I came to Spanlink in 2002 and have been rapidly growing the business. The primary focus in that timeframe was entirely around IP contact centers. So we have very much have been on the forefront of this industry. We did early implementations of IP contact centers, both innovative and complex. We also created a number of software products for the IP contact center that we sell both directly to customers and OEM through companies such as Cisco. We have about 1,500 IP contact center sites deployed and they include some of the biggest and most well-known applications out there, such as Grainger [www.grainger.com]."

"We also do a lot of work with international IP contact centers," says Shockley. "With customers such as First American, we help them build some of their contact centers around the world. Even though we're a Minnesota-based company, last year we did IP contact center deployments on five continents."

"We [Spanlink] led the industry with customers such as Grainger [www.grainger.com], which virtualized 500 of their store locations into a single virtual contact center, with thousands of agents across all of those sites.

"In October 2007 we spun off our Calabrio ([News](#) - [Alert](#)) Software division," says Shockley. "Calabrio operates as a separate, independent company and focuses directly on the development and distribution of customer interaction and workforce optimization software for IP-based contact centers. The new company began with a presence on about 500,000 installed desktops maintains an OEM relationship with Cisco. Spanlink Communications itself remains focused on selling, delivering and supporting unified communications solutions. We've been broadening the scope of our business from just being narrowly focused on the IP contact center, to a wider base of unified communications. We view the two as being interrelated."

"When I take a look at the big market picture," says Shockley, "I've seen several trends unfold over the past six or seven years. The first one, of course, was the convergence of the data and voice networks, which led to cheap long distance and all of those good things. One of the next trends that we were very much at the forefront of in the contact center arena was business virtualization. We led the industry with customers such as Grainger [www.grainger.com], which virtualized 500 of their store locations into a single virtual contact center, with thousands of agents across all of those sites. With Grainger we also pioneered a market-based routing algorithm which enables customers to call local resources and get local service even if the office handling the call is 30 miles away. Some companies may not realize that they have a true contact center until suddenly they're using this technology to tie together many different sites and virtualize their business."

"We see ourselves as stepping into the next arena," says Shockley, "which is the unification of the applications. We work with many of our customers today and end up with an inseparable combination of convergence, virtualization and unification of applications. We often help companies figure out what the business value is of bringing all of these things together."

"So those are the key areas," says Shockley. "The last few weeks I was running around the country visiting about a dozen customers. I'm seeing the former early adopters of IP telephony and IP contact centers now saying, 'Okay, that's great, now what's next?'. I also see the people who were somewhat later adopters and they're saying, 'I'm reading about all of this technology and I'm just getting ready to implement it, so how do I really bring all of this together? What is unified communications? What are IP contact centers? What's the benefit over just upgrading what I have today?' Interestingly, you end up with similar conversations with both groups of people. The difference is that one is a more 'educated' audience than the other, I guess. But both groups are asking about many of the same kinds of applications."

"We're dealing with a healthcare company that's doing nationwide health insurance applications for Fortune 500 companies," says Shockley. "They're really interested in how they can combine the resources of their formal contact center with all of the informal experts that they've got around their enterprise. In the insurance industry you've got an issue with licensing requirements and you find yourself talking to your customers about various topics based on the state from which they're calling. As soon as you start trying to build something that's nationwide in scope, and competing with companies in that business occupying narrow geographies, you suddenly run into the funny issue of how to ensure that you are highly efficient in providing the basic bread-and-butter types of services to the customers calling in – or customers you are calling out to – and, secondly, how can you find the appropriately-licensed expert to talk to a customer or to provide advice relative to wherever the customer is calling from?"

"I ran into something similar in the mortgage title services industry," says Shockley, "also serving customers nationwide and involving many regional experts. The company had to be able to handle regional licensing issues and appear to be 'local', which is not only informative but helps to establish a personal relationship with the customer."
"So we're starting to see more of these kinds of approaches. As soon as you adopt them in call centers, you begin to see more blended UC, and informal agents tied to formal contact center agents so you can call upon their expertise whenever necessary," says Shockley.
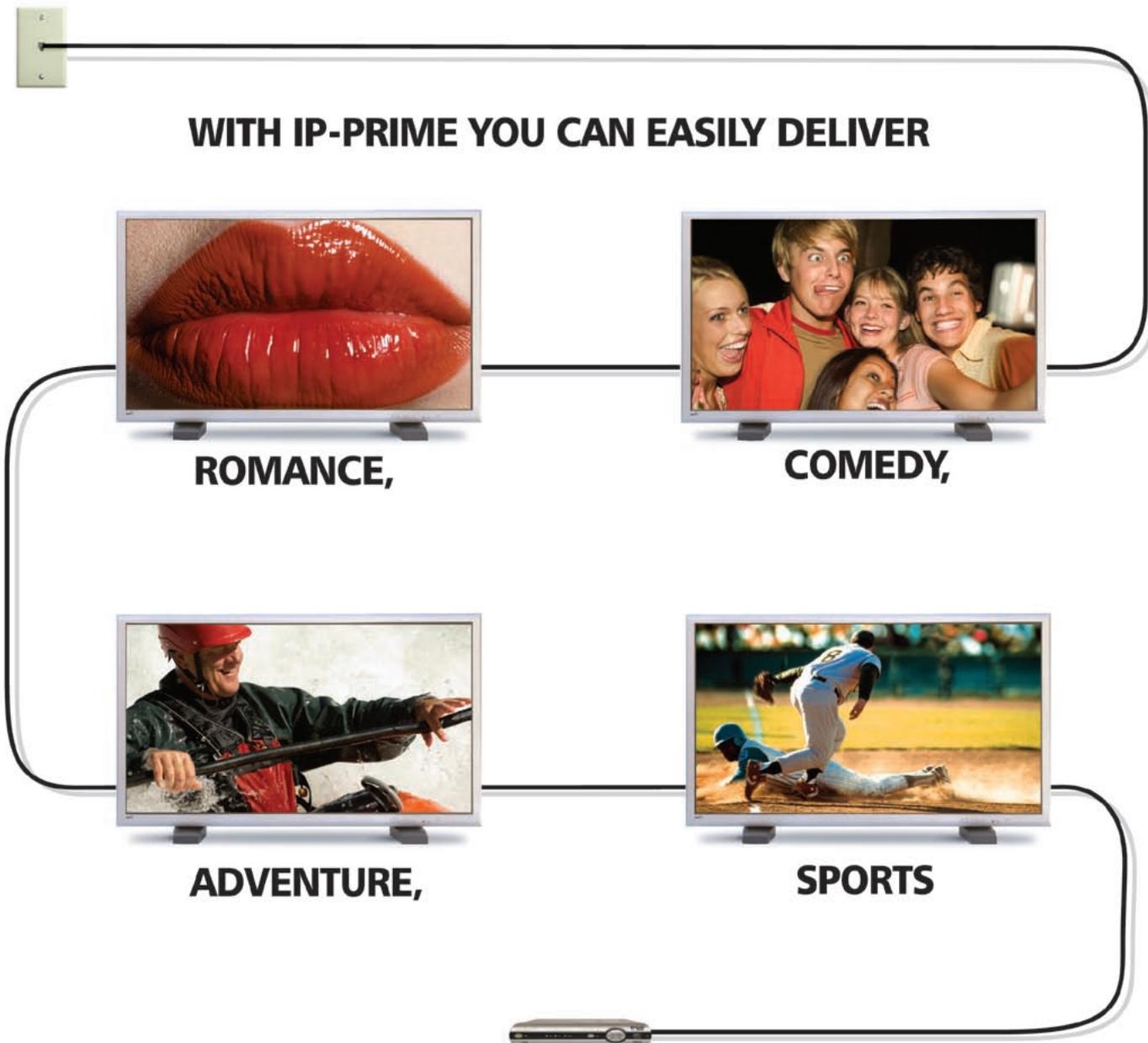
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Digging Deep for Data

Verint (News - Alert) Systems is a major provider of actionable intelligence solutions for workforce optimization, IP video, communications interception, and public safety. Their technology helps organizations make sense of the vast information they collect as part of their daily operations – for example, trends buried in millions of calls, threats hidden in billions of interactions. The Verint Enterprise Workforce Optimization Solutions thus enable organizations to capture and analyze customer interactions, improve workforce performance, and enhance service processes in contact center, branch, and back-office operations. These were developed in combination with the workforce optimization software provider Witness Systems (News - Alert) (which was acquired by Verint).

Verint has recognized the benefits of IP telephony and has leveraged this technology in IP Recording as part of their Impact 360 Suite. Beyond the advantages of cost saving by virtue of IP, Verint's solution captures, indexes, and retrieves customer/caller interactions in traditional TDM, IP, and mixed telephony environments. Additionally, IP Recording is flexible in that it can be used with traditional contact centers as well as contact centers with remote or home-based agents, branch offices or distributed service centers. Furthermore, IP Recording through Verint's Impact 360 software is compatible with VoIP systems such as Avaya, Cisco and Nortel (News - Alert). Full integration with a VoIP system and SIP-enable it to capture additional information, such as call date, duration, call ID, and more.:

Greg Sherry, Director of Marketing at Verint Systems, says, "Companies have started leveraging VoIP for business and workforce optimization and what they do also impacts and benefits customers. One of my favorite examples is a company in the Los Angeles area called LifeCare Assurance. They've been on Cisco IP since 2003. All of their 140 agents have been using VoIP. Basically they're optimizing their company. It's not a giant company – 140 seats is about average. The big mission-critical centers of 800 agents or so aren't quite going 100 percent VoIP yet, though they're piloting it more and more at the ancillary centers. But with LifeCare, it's interesting that they're optimizing all the people, not just the call agents. Two-thirds of the people being optimized are underwriters and outbound people at remote locations, so they're distributed. There are about 40 or 50 people we'd typically refer to as call center agents, but the other 90 or 100 people, if they were at any other company and not on VoIP, they wouldn't come under workforce or business optimization processes, because they couldn't do it if they were on a traditional PBX (News - Alert) or a different kind of network."

"VoIP is really making a difference now in helping customers in terms of ROI and platform and infrastructure perspectives," says Sherry.

"There's another example I can think of concerning a credit union that captures best practices and improves training," says Sherry. "In another example, they use root cause analysis and business optimization. This technology is very real now. Companies are using IP contact centers for remote agents or individual agents that wouldn't or couldn't be in a traditional call center. With today's technology they can be tied into the centers. Sometimes it's not VoIP all the way. It could be VoIP as far as a TDM switch having a gateway. But even without a full VoIP infrastructure, if you need more agents, it's possible to extend call center functionality to wherever the agents are – three in Idaho, two in Philadelphia and six in New Jersey, for example."

"SIP, the Session Initiation Protocol (News - Alert), has become a tremendous aid in enabling agents to handle more types of interactions with customers," says Sherry. "Agents using systems based on SIP and presence-based capabilities can talk with a customer, or use web chat, or pass it to some other media, or some outside expert, or consult with somebody via instant messaging. You haven't seen wide use of this in the optimization space, but I would say that 10 percent of the early adopters are doing this cutting-edge stuff."

So, within a short time it appears that we'll all be official or unofficial members of our workplaces' IP contact center. Practice your diction. **IT**

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

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VoIP Testing – Serious Business

By: Richard "Zippy" Grigonis

What's been commonly referred to as VoIP testing has expanded in recent years to include all of IP Communications. Networks are simulated and as many tests as possible are done before actual deployments of VoIP, mobile or triple play networks and or equipment. Developers are spending more time in the interoperability testing labs as they face a combinatorial explosion of testing other equipment as well as load testing and simulating operations under typical hybrid network scenarios.

For as long as Yours Truly has been exposed to testing in telecom, computer telephony and IP communications, the name of Empirix ([News](#) - [Alert](#)) continues to stand head and shoulders above the rest. Empirix gained great notoriety in the 1990s with their Hammer testing platform that could subject computer telephony systems to full load tests, generating thousands of calls to simulate real world traffic. (I should know – I had two of their $40,000 boxes – along with an Ameritec Squirt analog call generator – in the lab I designed for the now-defunct *Computer Telephony* magazine.)

As IP began to infiltrate the world's telecom infrastructure, Empirix has kept pace, expanding the number and capabilities of their testing portfolio. Perhaps their crowning achievement came last year when they debuted the mighty Hammer G5, a testing platform that embodies much the technical expertise they've accumulated over these many years.

VoIP, next-gen and IMS (IP Multimedia Subsystem ([News](#) - [Alert](#))) devices and networks have unique sets of testing requirements. Many devices and technicians are often needed. Fortunately, the Empirix Hammer G5 has loads of super-scalable feature testing capabilities in a single box, accessed by one GUI. The G5's comprehensive test environment can be used throughout a test lifecycle by application developers, network equipment manufacturers and service providers, from R&D prototype testing to service verification in trial lab situations.

The Hammer G5 can emulate an endpoint and simulate user interaction from virtually any point in a network on the call or session path. It can generate and/or analyze features, loads, voice quality, signaling, and media. It can scale up to thousands of calls, it supports and can run multiple protocols simultaneously using the same tests and scripts, calling upon such protocols as SIP, MGCP, NCS, H.323, QSIG, and Cisco's ([News](#) - [Alert](#)) Skinny. It supports a plethora of narrowband and wideband codecs for wireline and wireless, as well as various real media types such as tones, DTMF, voice, fax, and video. Certainly the mysteries inherent in any new application server, call agent, firewall, gateway controller, IP PBX ([News](#) - [Alert](#)), IVR system, or session border controller will be revealed after getting a "hammering" (pardon the pun) by the Hammer G5. In short, it can handle just about any test scenario, from automatic failover/handoff to denial-of-service attacks, to mass calling events, to service oversubscriptions.

Empirix' great rival, Tektronix ([News](#) - [Alert](#)), is no slouch either. As Keith Cobler, Marketing Manager, Network Management Solutions, says, "Let's take a look at the technology lifecycle: you start with the Network Equipment Manufacturer [NEM] who may be developing some softswitch or other device for a VoIP network. From that point it moves into the carrier labs where they do the acceptance testing and interoperability testing on it. At that point the product goes out into a network pilot project, and if it's successful there then it goes to a full network-wide deployment. All four of those stages are becoming 'compressed' because it all comes back to the importance of time-to-market and getting these services and applications turned up and generating revenue as quickly as possible."

Cobler continues: "Our Spectra2 [now joined by the Spectra2XL] test platform for VoIP, IMS and converged networks is a protocol analyzer focused on use in the NEM and carrier labs to get a product stress and load tested and have the individual network elements fully optimized before it gets shipped over to the operator side. But once it arrives on the operator side, that's where the network management aspects come into play. In any case, you're starting to see more and more of the tools 'bridge the gap' between acceptance testing and interoperability testing in the labs, all the way over to the point where it's first brought into a pilot, and eventually to full deployment."

"So in terms of bringing and new products and services to market," says Cobler, "there's a telescoping or compression of that whole testing cycle. From my perspective, we focus more on the network management side. As for VoIP testing, we've definitely seen a couple of really key

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trends that are impacting what our customer needs are today as well as the monitoring and test products that we're developing."

"If you look back ten years ago at PSTN networks, the types of test and monitoring solutions then available were very different," says Cobler. "They were very much focused on testing individual elements or 'nodes' and things were assumed to be taking place at the network level. Now, moving to VoIP and IP networks in general, there has been an upshift towards the service level and monitoring applications and services at that service level. That in itself has really fundamentally changed the way testing and monitoring products have to address this need. Just the very nature of IP means that you must have a distributed monitoring system throughout your network to pick up all of the IP packets as they transverse the network."

"If you think about today's IP networks, including voice," says Cobler, "they also carry video and data. You now have a wide variety of data traffic transversing your network, and you've got a constantly changing service and application mix. As new services and applications are brought to market, you see scenarios such as when the iPhone (News - Alert) was rolled out by AT&T Mobility. Suddenly the demands of the network change, and you have to be able to monitor those changes in real time within your network, so you can proactively provision your network resources and ensure that you can really offer a high quality of service to your end users."

Zaid Ally, Marketing Manager of Active Test Solutions at Tektronix, adds, "What this all translates into is that you must ensure that you have a good end-to-end service across your network and a product travels from a NEMs lab all the way through to the carrier deployment phase, moving all of these technologies into a deployment means that you have a hybrid 'mix' of networks, whether they are 3G, WiMAX (News - Alert), PSTN or even just a plain simple IP environment. We perfected our original testing methodologies back in the days of the PSTN, some of the metrics that we examined in the PSTN are now creeping up into these newer technologies in the wireless 3G and IP/VoIP networks. So it's all really about making sure that we can reach the 'end dream' of having some sort of session 'persistency' across all of these hybrid networks."

Hybrid networks pose one set of challenges. Even more challenges are posed by networks having to deal with bundled services in a triple- or quad-play scenario. Ixia, a major provider of IP performance test systems, has distinguished itself by demonstrating triple-play testing for Gateway (News - Alert) GPRS Support Nodes (GGSNs, pat of the packet-switched core network in both 2.5G and 3G mobile systems) using an enhanced version of their popular IxLoad 4.10 application. Ixia's (News - Alert) IxLoad emulates thousands of triple-play (voice, video and data) subscribers along with any associated protocols. Hardware vendors and mobile operators canuse it to run stress tests on devices and networks to gauge performance.

Ixia also offers ixChariot, a sophisticated test tool for simulating real-world applications to predict device and system performance under realistic load conditions, and ixVoice, a wide-ranging hardware and software test framework that provides unified VoIP and PSTN test solutions for the equipment makers, carriers and enterprises. It can handle any pretty much any VoIP protocol: SIP, SCCP (Skinny), H.323, MGCP, H.248 (MEGACO) as well as TDM and analog telephony services. Functional, load and interoperability tests are easily formulated via a drag and drop architecture, enabling quick creation of test scenarios with pre-defined visual blocks. IxVoice;'s semi-automated, multi-interface, multi-technology approach can facilitate the measurement and analysis of both voice and fax quality.

Ixia has also opened a new advanced testing facility in Silicon Valley, called iSimCity. iSimCity is a state-of-the-art proof-of-concept (PoC) lab and Executive Briefing Center adjacent to its sales and services offices in Santa Clara, California. Local companies such as Cisco and Force 10 Networks can use iSimCity to test their new products and services prior to deployment, including multi-play, VoIP, wireless, and other items.

Sounds Like My Network. . .

Corporate paranoia over how a new VoIP system is going to sound has spurred long-overdue pre-installation testing and simulation of networks. One interesting example of a tool in this area is Shunra (News - Alert) Virtual Enterprise (Shunra VE) by Shunra Software. It's a flexible, feature-laden network simulation solution that can synthesize an exact replica of your pre-deployment production network and remote end-user locations right in your lab. It also integrates with and controls VoIP call generators, such as Ixia's IxChariot, IxVoice, and Spirent's Abacus. You can even attach SIP phones

directly to Shunra VE and hear how voice calls will sound over existing or projected network conditions. It can scale up to point where it can accurately determine the network capacity resources needed to support triple play and it can be used to optimize QoS and MPLS architecture infrastructures. Shunra VE can also be used to assess the impact of planned changes to an existing network on VoIP performance.

"How do you test an intermittent, remote problem? Streamline can alarm on a problem and let you roll back in time and see what issues correlate with the problem..."

"Streamlining" Service Providers

Communicado, Inc., formerly known as SyncVoice ([News](#) - [Alert](#)) Communications, provides management software for managing converged voice/data communications that carry real-time person-to-person business communications. The VXTracker software product line and Communicado's ([News](#) - [Alert](#)) Streamline Management as a Service Platform are used by more than 400 advanced technology adopters.

In particular, service providers or even integrators can offer their customers the benefits of a converged-communications solution with none of the risk or IT burden for them (and no capital expenditure by the provider) by franchising the Communicado Streamline Service Management Platform. It doesn't matter with the provider specializes Microsoft/Nortel ([News](#) - [Alert](#)), Avaya, Siemens, ShorTel or Cisco, Streamline can handle just about anything, enabling the remote management of a customer's environment as the trusted provider of a complete converged-communications solution.

To make this functionality possible, some sophisticated testing capabilities had to be built into the product.

Kevin Strehlo, Vice President of Marketing for Communicado, says, "Communicado Streamline does network assessment testing based on modeling historic traffic in order to generate VoIP traffic as a way to test convergence readiness. Streamline then analyzes the impact deeply in terms of MOS scores and per-call QoS. Daycom used their testing techniques periodically on themselves and noted a gradual MOS score degradation, consequently looked at it and adjusted packet sizes, and fixed the problem before it caused user complaints.

Strehlo continues: "How do you test an intermittent, remote problem? Streamline can alarm on a problem and let you roll back in time and see what issues correlate with the problem. Then you can use Granted Access to start the protocol analyzer loaded on our premise device and look at the traffic captured at that point in time. There's no requirement for — what would it take? — a truck roll to a remote site based on a premonition a problem is going to occur?"

GoTo:
GoTo:
Table of Contents • Ad Index

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"You can also store a packet capture file on the remote Streamline premise device for later analysis," says Strehlo. "It works in combination with the Ethereal software loaded on the Streamline Remote Toolbox Appliance to allow rolling back in time for deep analysis and troubleshooting, which is especially effective when used with Streamline's Correlated Zoom."

Seeing What's Wrong

Another great testing name, dating from 1996, is RADCOM, which provides probe-based network monitoring solutions for telecom service providers and equipment vendors. They specialize in next-gen cellular as well as voice, data and VoIP networks. Their products are used in support of facilitate fault management, service performance monitoring and analysis, troubleshooting and pre-mediation.

Even in the case of a complex, finicky service such as IPTV (News - Alert), RADCOM has a sterling testing tool – Omni-Q for IPTV, which gives service providers a detailed view of the various services available in their IPTV deployment. Omni-Q for IPTV monitors the transactions between the users set-top box (STB) and the middleware as well as those between the middleware and any external application servers. The system can reveal the performance of every component in the service delivery chain, with regard to each request generated by the STB and propagated to the middleware VOD (Voice on Demand) or other IPTV-related service delivery servers.

Wild Wireless

With all of our talk of packets traveling along fiber and copper, we forget that the future frontier of packetized communications (e.g. 4G) resides in the mobile world. In terms of testing, cellular wireless telephony has always had its own can of worms (make that a whole shelf of cans). Mobile services subscribers have a limited tolerance of problems such as incomplete or dropped calls, interrupted data downloads and device lock-ups, resulting in a lot of returned devices and cancelled service subscriptions. Rising to the occasion, however, is Spirent Communications (News - Alert), which has introduced a new UMTS Call Reliability Module for its 8100 Mobile Device Test System. Spirent claims to be the first company in the industry to provide mobile operators with comprehensive call reliability performance testing capability for UMTS devices under real-world conditions.

Spirent is also known for its Spirent Abacus voice, video and data over IP testing platform, often used to reveal scalability, performance interoperability, and QoS parameters prior to and during deployments. Spirent enables equipment manufacturers and service providers to test the migration from legacy to converged network equipment — including triple play testing for voice, video and data.

Any way you look at it, the testing of IP Communications products, services and networks can be done in a more thorough manner than ever before. Sometimes it seems that new stuff takes forever to make its appearance, but I'd rather wait for something that has passed every test with flying colors, rather than take a chance on unknown quantities. **IT**

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

Skype in the Enterprise

By Richard "Zippy" Grigonis

Skype (News - Alert) is the most popular IP-related communications program in the world. As of December 31, 2007 Skype had 276 million user accounts, and 12,051,566 concurrent Skype users were online as of February 18, 2008. Skype's popularity stems in part from enabling users to make free Internet phone calls to other Skype users, and for conventional phone users to communicate with Skype users for a relatively small fee (via the SkypeIn and SkypeOut services). Skype can also do instant messaging, file transfer, short message service, videoconferencing and it runs easily because it can effortless penetrate firewalls. And it's estimated that about a third of Skype aficionados are using it for business purposes. So it's okay for the enterprise, right? Well, sort of. . .

One of Skype's greatest strengths, being able to poke a hole in a firewall to communicate with the outside world, is also one of its scariest features. It's so effective, other software products piggy-back on Skype's firewall-penetrating ability. For example, Timbuktu Pro is a desktop-to-desktop remote control program enabling users to connect to, collaborate with, and control remote machines through a Skype tunnel with other Timbuktu Pro users. Users can even launch a Skype Internet telephony call from within Timbuktu Pro. Timbuktu Pro leverages Skype's API to automatically navigate through routers, firewalls, and NAT devices. The advantage is that, whether you're on the road, in the office, or at home, you can place Skype calls and show and share your desktop over Skype remote desktop connections. The disadvantage that you have to pay attention to is the security aspect (or lack thereof?).

One of Skype's greatest strengths, being able to poke a hole in a firewall to communicate with the outside world, is also one of its scariest features.

Instead of SIP (Session Initiation Protocol (News - Alert)) Skype uses a proprietary protocol that operates on an almost totally decentralized and distributed overlay peer-to-peer (P2P) model, which is why the amazingly scalable Skype network could quickly grow to nearly 280 million accounts without a huge central directory and server farm/datacenter, as one would require in a client/server model. Being a P2P model, like the Internet, Skype can survive disasters. If a natural catastrophe occurs (or if your boss or local tyrannical government official takes down a command and control node) the P2P network will accept orders from another network node. The VoIP client was developed by KaZaa in 2003. The peer nodes fall into three categories: Super Nodes, Ordinary Nodes and the Login Server.

An Ordinary Node is the Skype client application software running on your host computer. Each Skype client builds and refreshes a table of reachable nodes, called the host cache, which is stored in the Windows registry for each Skype node. The host cache contains the IP addresses and port numbers of the Super Nodes. All Super Nodes in turn connect to Skype's only central device, the Login Server, situated in Denmark. The Login Server is used to verify your Skype Name, your email address and an encrypted version of your username password. Communication is done via RC4 encryption. When you load Skype, it reads the date from the host cache, takes the first IP address and port from the table, and attempts to connect to that particular Super Node by sending to its address a UDP (News - Alert) (User Datagram Packet) and awaiting a response. If no response arrives after five seconds, it sends a TCP packet to the same address. It attempts to forge a TCP connection to the host cache IP address and port 80 (the HTTP port). If unsuccessful, it tries to connect via port 443 (HTTPS port). If that Super Node is no longer connected to the network, your computer reads the next entry in the table. If there is no connection to any Super Node in the table, then Skype returns a login error upon start-up.

If you run Skype and you aren't using a firewall, have good bandwidth and a reasonably powerful CPU, your host may find itself transformed into a Super Node without your knowledge or permission, in which case you'll notice a performance hit, since Skype routes calls through fellow Skype peers on the network and provide data routing for users behind certain firewalls.

Banned in Boston?

For this reason, some organizations such as universities have banned use of Skype. For example, Oxford University, the University of Minnesota, the University of Texas, the University of California's Santa Barbara and Dominguez Hills campuses, and Jose State University (which, ironically is not far from Skype's parent company, eBay (News - Alert)) have banned Skype because of security concerns and excessive Super Node bandwidth consumption (about a gigabyte a month). The Pharmaceutical giant Novartis in Basel, Switzerland

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bars employees from using Skype. So does Goldman Sachs and the German chemicals colossus, Degussa. The French ministry of research discourages Skype use in all French public universities and laboratories working on high security projects. The Max Planck Society, a German government-funded research organization has outlawed use of P2P software (Skype in particular) at all of its institutes. Fermilab in Chicago takes a different tack, telling its employees how to disable

Skype hired security expert Tom Berson who audited the technology and found two problems that were fixed in October 2005. Berson rated Skype "secure and reliable".

the Super Node process.

In 2005, Info-Tech Research Group published a research note titled "Five Reasons to Ban Skype" that 17 million people (at that time) were using Skype for business purposes, but that Skype was not standards-compliant, allowing it and any vulnerability to pass through corporate firewalls. It also said that much of Skype's technology is closed source and subject to man-in-the-middle attacks; enterprises can't communicate with countries and institutions that have banned the service; Skype is undetectable, untraceable, and unauditable, putting organizations at risk that are subject to retention laws such as imposed by HIPAA, Sarbanes-Oxley, etc. Securities brokers, for example, must record and track all of their phone calls.

Later that same year, Skype hired security expert Tom Berson who audited the technology and found two problems that were fixed in October 2005. Berson rated Skype "secure and reliable".

A year later, a third party paper analyzing Skype was presented at Black Hat Europe 2006. It noted that Skype has blind trust in anything speaking the Skype protocol and there's a lack of privacy. Skype has the keys to decrypt calls or sessions. The paper also revealed that Skype makes it difficult to enforce a corporate security policy and that there is "no way to know" if Skype's programmers (or somebody else) has created a backdoor to the program, thus converting it into a Trojan.

To assuage your concerns, eBay/Skype maintains a Skype security page at www.skype.com/security/safety, where you'll find Skype Security Bulletins.

There's also a Skype Security Blog at http://share.skype.com/sites/security, where you'll find such tips as these: "We've seen some instances where a chat message masquerading as a link to an image file instead leads to a piece of malware," and, "We recently disabled the ability to use Skype's Live tab to download clips from the Dailymotion and Metacafe video galleries. We took this step as a cautionary measure after security researchers found a vulnerability in Skype 3.5 and 3.6 for Windows that would have allowed an attacker to execute arbitrary code on a Skype user's Windows PC without their consent. As we said in our post on January 18, the measure would be temporary. That is, until an official fix to the vulnerability would be made available. We are pleased to report that the core vulnerability has now been addressed and a fix is included in the latest build of Skype for Windows, 3.6.0.248."

Skype, like many U.S. companies, has cooperated with the Chinese government in the development and implementation of Internet censorship in the People's Republic of China. Skype has a joint venture with TOM Online, involving a co-braded version of Skype called TOM-Skype, available in mainland China. Chinese citizens attempting to download the Skype client are redirected to a TOM Online (News - Alert) site where the modified Chinese version is available for download. Dissidents and activists in China worry that the Chinese version could become (or already is) a trojan that will collect information on users. What is known is that TOM's "guidance" to Skype about how to cooperate with local laws and regulations in China involved placing a text filter of words that are not displayed in TOM-Skype text chats. Also, although SkypeOut calls are not permitted, Chinese users can access SkypeOut by downloading the software directly from the Skype website. At least one other Chinese company has successfully reverse-engineered the Skype protocol, as did a group of Chinese hackers in 2006.

But Skype Marches On!

While the rest of the world dickers with all of these issues great and small, interesting third-party software continues to appear that works in concert with Skype.

For example, if there are people in your organization providing customers service, OnState (News - Alert) CallCenter for Skype from OnState is a customer contact management solution requiring no hardware or special software. The service provides customers with local, national and toll-free numbers in over 20 countries, automatically call back visitors on your web site, delivers chat support online, responds to customer inquiries anytime or anyplace where Skype can go, and can easily scale along with your business. Customer service capabilities such as skills-based routing, customer segmentation and detailed reporting and analytics are included. Moreover, customers can contact you through their medium of choice, via phone, mobile phone, from your website, via chat, leave a voicemail message, or automatically schedule a callback. On your end, your agents and employees only need the OnState Plug-In for Skype.

PrettyMay Call Center for Skype (PMCCS) from PrettyMay Team is also a 100 percent software-based call center solution for Skype, enabling SMBs to quickly implement a "Skype PBX (News - Alert)" system with auto-attendant, Interactive Voice Response (IVR), extension transferring, call recording and personalized voicemail capabilities, etc. With PMCCS, you can set up your Skype account as an IVR system. In its current version, PMCCS supports up to 30 simultaneous Skype or SkypeIn lines without any extra hardware.

Additionally, the Convenos Meeting Center from Convenos is a web conferencing and collaboration solution that works seamlessly with Skype as a "Skype Extra" plugin. You access the Convenos Meeting Center through the "Do More" menu on Skype or in the online extras gallery. Convenos can be used to share files, presentations, applications or your desktop while making a Skype call.

So, if you're not working with high security material and are free from paranoia about freebie software run under the auspices of your employees, Skype's millions of users await to speak with you. **IT**

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

The following companies were mentioned in this article:

Convenos
www.convenos.com

OnState
www.on-state.com

eBay/Skype
www.skype.com

PrettyMay
www.prettymay.net

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How UC Changes Business Processes

By Richard "Zippy" Grigonis

Cost-U-Less Insurance, one of California's largest non-standard auto insurance brokers, was losing business because of an inefficient contact center phone system that dropped calls and didn't provide any real time data. To the rescue came Simple Smart Secure IP Communications, known as SOS ([News](#) - [Alert](#)) (www. team-sos.com), a nationwide reseller and expert in voice and data solutions for business, including call centers, network security and VoIP. SOS designed a new system for Cost-U-Less based on the Interactive Intelligence ([News](#) - [Alert](#)) (www.interactiveintelligence.com) suite for contact centers, the Customer Interaction Center. The suite's modules can do Interactive Voice Response (IVR), Automated Call Distribution (ACD), end-to-end reporting, dynamic alerts, and optional call recording. The system was also designed with redundant failover servers. The result? In the first month following installation, sales shot up 15 percent, hold times dropped from 5 minutes to less than 30 seconds, and the company was able to take two of its 12 agents out of the call center and put them on other tasks.

One key to the era of UC is integrating business activities. Software technology is such that different applications can be united in a "mash-up" scenario. A mash-up is essentially a collection of disparate pieces pulled together to 'synergize' and do something bigger and more interesting. It's 1+1=3. One can add to this the ability of the customer to have more control over how he or she communicates and interacts with applications. Get used to the term CEBP (Customer Enabled Businesses Processes). You'll soon be hearing it as often as UC.

Martin Suter ([News](#) - [Alert](#)) is President of Objectworld Communications, makers of Objectworld UC Server that integrates business communications, business processes, line-of-business applications and corporate data in a single, Windows-based application. Objectworld ([News](#) - [Alert](#)) UC Server supports legacy PBXs, has Microsoft Active Directory-based administration tools, and supports optional integrated SIP-based VoIP telephony, thus easing a business' transition to VoIP.

> **"What really excites us is the application of UC in linking business processes, to automate things, to improve customer service and satisfaction scores..."**

"In any industry there are always people resistant to change," says Suter. "We've certainly seen that with other technologies over the years. Business Intelligence [BI] was one of those fields kept in the Ivory Tower for a very long time, and when Microsoft ([News](#) - [Alert](#)) began to make available BI capabilities natively and in end user tools with which people were familiar,
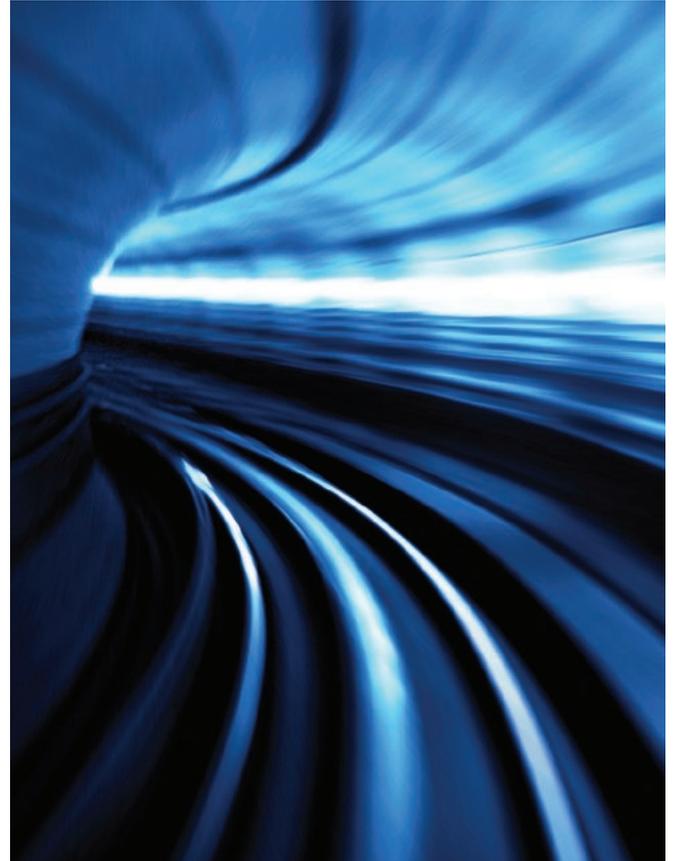
they grew accustomed to them and they saw the benefits of dashboards and KPIs [Key Performance Indicators] and other things that help them do their jobs. I really see that UC and communications-enabled business processes are following a similar route."

"For the longest time, UC has been a matter of simply stitching together disparate communications capabilities," says Suter. "But during 2007 we all did a much better job in articulating the benefits and gains that can be had by a new era of UC. Microsoft coming onboard by including UC with Exchange 2007 is certainly a key step in bringing some these advanced capabilities down to the desktop and end-user level, or information-worker level."

"But there's a lot more to be done," says Suter. "What really excites us is the application of UC in linking business processes, to automate things, to improve customer service and satisfaction scores and to bring context into communications for end-users, which is lacking today to a large degree."

One of the major components in this transformation is SIP, the Session Initiation Protocol ([News](#) - [Alert](#)), says Suter: "A SIP-based ecosystem allows us to be somewhat agnostic about the interacting components. We can now deliver core-value propositions without having to deliver all of the pieces ourselves. One thing we've announced is a rebranding and repackaging exercise explaining the benefits of UC and the integration of business processes. For us, the best way to show this is via demonstra-

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Table of Contents • **Ad Index**

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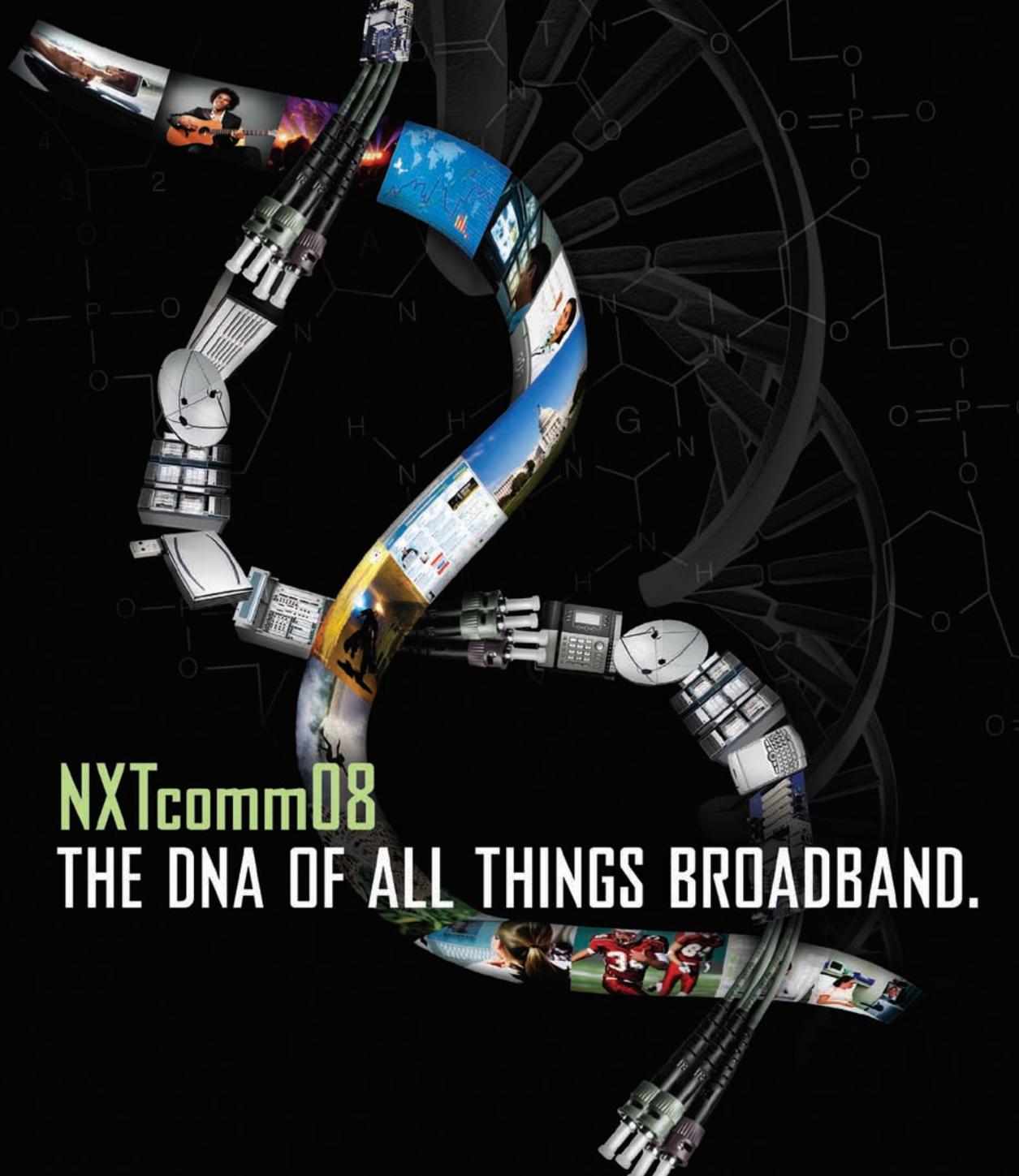
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tions. If you're familiar with the Microsoft Demo Showcase, we've taken a page out of that playbook and on our home page you'll be able to walk through eight different scenarios, each of which is representative of some of the problems and benefits that end user companies can gain from UC. For example, the road warrior/sales guy scenario is important because they tend to stress the system. But we also are highlighting gains that production managers and departments such as finance see from integrating communications with some of the applications they use."

"Many people are starting to use the term CEBP, or Customer Enabled Businesses Processes," says Suter. "I think it will be the newest hot term like 'unified communications'…"

Suter elaborates: "Smitty, the production guy in our fictional company scenario, monitors and uses a just-in-time inventory system for production and the system monitors critical component capability. In databases you can set thresholds for alerts and different things, but what's really important is getting that information to the right people at the right time so they can take action on it. I think that's really exciting for companies to be able to do that, and it's an example of how systems can be linked together with the communication system to deliver value and to prevent a production line shutdown, which would be a worse-case scenario for a manufacturing company."

"In terms of finance, most companies today monitor accounts receivable very closely," says Suter. "Some of our customers have implemented an automated outdialing capability that is triggered when a receivable hits a certain number of days past due. Rather than simply flagging it and requiring somebody to elect to intervene, it's possible to automate the process and provide the customer with certain options – perhaps to pay the bill using a credit card, or request that a fax copy of the invoice be sent to them, or to speak to somebody in accounting. It's a problem that every company can relate to but frequently they haven't thought about how they can automate and better manage their receivables through the application of technology, and taking it beyond simple desktop alerts and dashboards to a whole other level. In any case, those were just a few examples of how you would integrate communications with your financial system."

Retooling for Tomorrow, Today

"We've rebranded and repackaged Objectworld UC server, our core brand," says Suter. "We're shipping three different editions. The Standard Edition effectively allows us to deliver the capabilities that I described and many others on top of or alongside an existing PBX (News - Alert), so it really isn't a 'rip-and-replace model' by any means; instead, it brings UC and business process integration to your existing PBX."

Suter continues: "The second version, Objectworld UC Server SIP Edition, is for SMB customers moving to a software-based SIP solution and UC, but don't want to buy an expensive convergence solution."

"Third, and lastly for those companies that already have a PBX and a UC solution and simply want the applications server component and the application integration ability, we our CEBP Edition," says Suter. "It's a Windows-based service creation environment to build communications-enabled applications."

"So, we believe those three editions we have the breadth of the market covered," says Suter. "We are clearly focused on the 100 to 2,000-employee company. The sub-100 segment is a difficult space to reach and to compete in; there you see some of the low-cost hosted solutions. We're targeting those companies that probably have a degree of IP expertise in-house and are interested in doing many of those things that I've described."

"Many people are starting to use the term CEBP, or Customer Enabled Businesses Processes," says Suter. "I think it will be the newest hot term like 'unified communications'. Gartner (News - Alert) and others are talking about CEBP, the sound volume on that is getting turned way up. One important aspect of CEBP that people will start look at and where others will differentiate themselves, will be the amount of professional services required to actually do this. There's been CTI (News - Alert) integration available for a long time now, but it has traditionally been available only to the largest enterprise customers. I think with a product like Objectworld UC Server, which out of the box gives you ODBC [Open Database Connectivity] connectivity and the ability, even in-house, to automate and integrate in some of the ways I've described,. we can bring the benefits of business process integration down to that smaller and mid-market customer."

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Integrate, Integrate, Integrate

Manjula Talreja is the Senior Director, Customer Business Transformation Team, Voice Technology Group, at Cisco (News - Alert) Systems. "From my perspective, unified communications, specifically IP-based UC, is a platform that provides not only presence capabilities but mobility, virtualization, speech, and rich media, including video and quad-play. Based on what is happening in the industry right now, we're really moving toward Web 2.0. Customers don't care any more about wanting to be anywhere, anyplace, anytime. I want applications in which I can participate rather than applications that just personalize to me, such as the YouTubes, and Facebooks and WebEx team spaces and all of that, which are better than resorting to the traditional email process. Moreover, I should be independent of a single device. I should be able to inhabit any workspace I prefer. At certain times I could be using IP or desktop phone, or a laptop softphone at a Starbuck's, or a mobile device at the airport. In any event, I want to be able to transition from device and environment one to the other, doing 'mash-ups' of different applications any way I want to, and I want to communicate in different ways. That calls for the platform that we at Cisco build — all the way up from the application layer to the endpoints, to the network appliance layer, to the network."

"The six areas that are changing the way the world is doing business are as follows: Virtualization, Presence, Speech, Mobility, Policy and Video," says Talreja.

"Four years ago I left the IT world and joined the Cisco Internet Business Solutions Group, which is a strategy consulting group, and I ran the high-tech practice," says Talreja. "Two years ago I was asked to become a leader in the Voice Technology Group and about two years ago we created a new group called Customer Business Transformation. So Cisco actually innovated this concept years ago. There are people in my organization that are strategy consultants and have a strong UC background, who go to CXO type people to help define the business case for UC, both from when they're doing the strategy as well as post-deployment."

"The six areas that are changing the way the world is doing business are as follows: Virtualization, Presence, Speech, Mobility, Policy and Video," says Talreja. "What's exciting are not just things like XML applications on the phone, but also integration with inventory management systems and with other applications very specific to a vertical industry."

"Our group is a catalyst group, so not only are we doing engagements with our top customers," says Talreja, "but we're applying this to the entire company, where our entire salesforce is moving to consultative selling, rather than 'box selling' which they used to do with routers and switches. Indeed, we're moving to consultative selling, business transformation and business practice selling for UC. There's a huge effort going on at Cisco to transition the company to sell UC from a business value point of view."

Talreja continues: "A CIO asks us from a business perspective, 'Yes you're getting the business really excited about transforming the business, including increasing productivity, but how do I pay for it?' The convergence of moving things over to an IP environment involves reducing costs from 20 to 40 percent, based on our studies and our engagements with real-life customers. The CIOs' business imperative is to keep costs down, and so we're showing them significant ways from a business perspective to reduce costs."

"Our framework is based on demonstrating TCO [Total Cost of Ownership] for the CIO as a result of convergence," says Talreja. "For the business itself, we bring two other key aspects: First is productivity. I just talked to a leading investment bank and hedge fund organization, and to them 'time is money', so they're extremely interested in implementing UC to make their high-end analysts extremely productive. UC enables them to do that."

"Second, the real power of all this is business transformation, which varies by whatever vertical you're dealing with," says Talreja. "The business case for the retail industry is different than that for a hospital or the government or for financial institutions. We therefore work with customers both on their strategy as well as post-deployment business impact that they have within each vertical. Predominantly we see a great deal of activity involving financial, manufacturing, retail and health care areas."

"From a business transformation point of view, let me give you an example," says Talreja. "There is a high-end clothing chain called Mitsukoshi in Japan. They sell jeans for $200 to $300. Retail space in Japan is extremely valuable, and so they like to optimize display space in relation to the changing room space. Mitsukoshi has installed RFID readers in Cisco IP phones and these are linked to their inventory management system. Let's say a customer goes to one of their 'Intelligent Fitting Rooms' — developed by Cisco — to try on a pair of jeans, and then discovers it's not the right size. Then, while sitting in the room, they swipe the card with the tag onto the Cisco IP phone that connects directly into the inventory management system, thus permitting customers to search for different sizes and styles of jeans in stock without having to leave the fitting room, which is where the purchase decision tends to be strongest."

"The phones are also placed throughout the sales area and staff can use them to check product availability without a trip to the stock room," says Talreja. "The trial runs in the Mitsukoshi's Ginza store found favor among more than 90 percent of the customer volunteers and all of the store's sales. The experimental system in the premium denim department reduced wasteful round trips to the stock room by 25 percent, causing the sales staff to request full-scale adoption as soon as possible. Over a six month period the company has increased sales of their high end jeans by 113 percent. We aren't even talking about presence here — just the integration of applications alone using a simple IP phone can have a tremendous effect on customer experience and business processes."

Accelerating Projects, Finding People, Improving the Customer Experience

Tony Rybczynski is the Director of Enterprise Global Strategic Marketing at Nortel (News - Alert). He says, "My short list of how UC changes business is as follows: First is accelerating projects, such as how quickly you write an RFP, approve a mortgage, or whatever. By projects I generally mean internal activities. Then there's accessing experts to speed up decision-making, speeding up problem resolution — again, I'm thinking more of internal processes here. And then there's improving the customer experience, which includes buying something, or getting a problem resolved, or all of the things associated with pre- and post-sales activities."

"These can involve call center applications, but if you're just walking into a store or if you phone into a business office and talk to your agent there may not be a contact center involved," says Rybczynski. "Even so, we can certainly see UC extending some of those capabilities into a general business office, or across the enterprise. If half the people in your business are 'customer-facing' at some point during the course of their day, then outside of the confines of a highly-controlled contact center environment, you can also improve customer service through unified communications."

"Even here at Nortel, UC can shorten sales cycles by improving how salespeople talk to system engineers and how everyone communicates with executive people and operational support," says Rybczynski. "Shortening sales cycles of course has a top-line impact."

"Then there's the whole area of reducing travel, which is a bit of a different type of beast," says Rybczynski. "But it also involves how you collaborate with customers, partners, employees, and others."

Rybczynski continues: "When our customers embark on a UC project, we ask them 'Which area will be impacted and which people in your organization will be most affected?' Essentially we're asking them what the problem is they're trying to solve. For example, is problem resolution a big area for them or not? I've been dealing with the Vancouver Olympic Committee for the 2010 Olympics, since were' the converged network supplier for them for wireless, optical, data, voice and so forth. There are many projects going on to day in preparation for those Olympics. But you can certainly imagine that with one week to go, the impact of messing up by not reaching the right people in the right way, are immeasurable. As you head toward the final days and weeks, the collaborative capabilities and abilities to being able to resolve problems very quickly are mission critical. That's an extreme case, but I think in many situations the further you go down a path, collaboration becomes hugely important."

Nortel's ultimate strategy appears to leverage SOA and Web Services to make possible the efficient delivery of communication-enabled applications and business processes.

"As far as improving customer-facing activities with UC, take the radiology department at Baylor University Medical Center [BUMC] in Dallas," says Rybczynski. "Instead of wheeling patients to the X-ray room, they have equipment on carts and the radiologist basically goes to wherever the patient is located. To do that you need to know where the radiologist closest to a given patient is situated with the proper equipment. The 'queue' to be X-rayed is now virtual rather than being a real line of patients. Baylor found that by using UC, Blackberries with the radiology technicians, on a three-hour cycle they can save 45 minutes of their time through presence and instant messaging, and can use their resources more effectively. It improves customer experience and accelerates the 'project' of how many X-rays you can do in a day."

The BUMC solution, based on Nortel's Healthcare Solutions portfolio, uses Nortel's Multimedia Communication Server 5100, a network-based SIP application delivery platform that provides integrated IP telephony, multimedia conferencing, instant messaging, presence and other collaboration tools to the mobile Radiology department staff. The system allows staff to receive medical orders anywhere on the hospital's 120 acre campus on a handheld device, which improves business processes associated with time-to-diagnosis, workflow and patient care.

"In many cases, however, you want to avoid 'overkill,'" says Rybczynski. "Service workers such as retail people don't need an office communicator client, because that's way too rich, and too comprehensive. What you want to do is to integrate the appropriate UC functions into the applications and devices that they use. You communication-enable devices and applications incorporating select and appropriate functions that make sense for each particular type of job, and then the person has the opportunity of initiating a UC session directly from within that applications."

"Actually, there are two types of communication-able applications," says Rybczynski. "One type still allows the user from within the application to initiate some sort of communication, such as a voice call, IM or whatever. The other type is where the application itself can initiate the communication, such as notifications. The app determines that something has changed, such as a drop in inventory, and it will reach out through UC to the appropriate stakeholders and deliver the information they need or even schedule a call among the people that need to talk to accelerate, for example, problem resolution. This can be achieved by making communications into software services, as in the context of SOA [Service Oriented Architectures] that can be made available to any application. Initially we at Nortel are doing this around IBM's (News - Alert) WebSphere, so those applications can be enabled and leveraged as SOA services that are then delivered through traditional hardware and, more and more, software."

"With an open multi-vendor, cross-domain approach, we can now reach more and more employees who can benefit from these functions, and we can speed up the business processes themselves," says Rybczynski.

Nortel has an alliance and an ongoing 'warm working relationship' with Microsoft. Indeed, some Nortel people have Microsoft badges and have total access to the Microsoft campus in Redmond.

"One interesting development with Microsoft is that we have Unified Communications (News - Alert) Joint Branch Office Solution," says Rybczynski. "We have Microsoft technology integrated with our secure router portfolio, which includes routing and switching for branch offices. So the question is, 'How do you provide UC out to the branch office in a reliable, scalable way?' You could throw a whole bunch of servers out there, but that's not the answer. Instead, jointly with Microsoft we have a very interesting solution, and to the extent that we can sell that to the application owners, the people that own the branch, that there are some real opportunities to 'intercept' Cisco's success with their ISR or Integrated Services Router, using a UCE-oriented solution for the branch, which also does routing and security. It's not a pure software solution, but it is an example of how you can leverage the expertise of both Microsoft and Nortel and how we can position ourselves into a new area, the branch office level."

Nortel's ultimate strategy appears to leverage SOA and Web Services to make possible the efficient delivery of communication-enabled applications and business processes. Nortel asserts that "through the use of SOA, customers can integrate advanced communications services into business applications, increasing productivity while reducing capital and operating expenditures."

Clearly, even in its early stages of adoption, unified communications is already having an enormous effect on the way business does business. **IT**

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

The following companies were mentioned in this article:

Comptel Corporation
www.comptel.com

Nokia Siemens Networks
www.nokiasiemensnetworks.com

Embarq
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Reach The Most Influential IP Communications Decision Makers 24-7

Bridging the Worlds of Healthcare and Information Technology

By Greg Galitzine

Writing on his blog recently, Rich Tehrani (News - Alert) broke the news that in response to numerous requests, and building on the success of our Global Online Community program, TMC is launching a brand-new Vertical Communities program.

According to Tehrani, "These communities would be created to help companies reach their target audience in vertical markets such as healthcare, education, hospitality, government and financial services," to name but a few areas.

One of the first areas that we've marked for coverage is the healthcare vertical.

I recently attended the HIMSS (Healthcare Information and Management Systems Society) conference and exhibition, the annual event for transforming healthcare through information technology. The show featured hundreds of vendors covering the whole gamut: from bar code solutions for tracking patients and inventory, to business continuity and disaster recovery vendors touting their services, to electronic medical records companies to network solutions, nurse call applications, and privacy/security solutions.

I met first with Michael Carr, executive vice president at IgeaCare Systems (News - Alert), Inc., a company that manufactures telephony-based communication systems for the healthcare market, with a variety of solutions targeting that particular space. I wrote about Igea-Care in last month's VoIP Authority column, so I won't dwell on their offerings too much here, but I would like to officially thank Carr for ushering me around the massive exhibit hall at HIMSS and introducing me to many of the key vendors whose offerings bridge the worlds of IP communications and healthcare.

Carr pointed out that, "communications plays a critical role in the successful delivery of healthcare information to help speed the decision making process to affect a successful result. . . It's about time. . . Efficiently getting the resources to the patient makes all the difference in achieving a successful outcome."

And it needs to be pointed out that in healthcare, a successful result is quite possibly more important to the individual in need of service than perhaps in some other applications, like, say unified messaging, where a slightly delayed e-mail message is not likely to be the difference between life and death. Of course, some editors, on deadline, might argue that point.

One of the companies Carr introduced me to was GlobeStar Systems, who provides software offering called ConnexALL, which, as the name suggests, integrates a variety of information streams, allowing healthcare staff to more efficiently appraise a situation and act accordingly, again with an eye towards delivering a successful result. IgeaCare leverages GlobeStar's ConnexALL software engine under and OEM arrangement, offering it under the apolo Event Notifica-

tion System brand. According to GlobeStar, ConnexALL is designed to help healthcare organizations manage their communications more effectively, by directing, locating and prioritizing information and integrating with third-party proprietary and open systems, collecting real-time event data, and subsequently creating intelligent, closed loop workflow processes based on each organization's unique requirements, providing instant communications, saving time, and enhancing patient care.

While that sounds like a mouthful of marketing, the goal is clear: to provide healthcare professionals with the information they need, in an efficient, timely manner, so that they can get on with the job of helping patients.

Carr then introduced me to Liz Hervatic, the senior director of healthcare business development (commercial and public sector sales) at Alcatel Lucent. Alcatel Lucent has been a major player in the space where healthcare meets IT for some time. In fact a year ago, at their Enterprise Forum, one of the keynote speakers was a gentleman by the name of Dan Drawbaugh, the chief information officer for the University of Pittsburgh Medical Center (UPMC), who spoke of his experiences working with Alcatel Lucent.

In late 2006, Alcatel Lucent was awarded a multi-year contract valued at $300 million to lead an IP network transformation project upgrading UPMC's communications infrastructure, which included upgrading UPMC's wired and wireless data infrastructure, enterprise telephony system, and contact center platforms and applications to a new converged IP infrastructure, thus creating a single voice, data and video network. They also enabled the development of advanced communications features that benefit patients and physicians.

Alcatel's healthcare solutions enable practitioners to focus on helping the patients. As Hervatic says, the goal is to ". . . get the right resources to the bedside and act as that critical first link."

A single column cannot cover the many companies I met with at the recent event, so watch for next month's VoIP Authority column where I will address a number of exciting applications from other vendors.

Perhaps the key takeaway from my sojourn is that there are a lot of talented, dedicated people working on bringing the next generation of information technology to bear on the healthcare market, all with a single goal: to deliver a higher quality of care, faster and more efficiently, by reigning in the information flow, and harnessing the power of IT to direct the necessary actionable information to the healthcare professionals who need it most, enabling them to do their job, which is to help increase the quality of life of those in their care. **IT**

*— Greg Galitzine is Group Editorial Director for TMC.*

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Table of Contents • Ad Index

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