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The Death of the PSTN

Another ITEXPO has come and gone. For those of you who attended, thanks for coming. If you didn't make it there, you missed out on a lot of good education and networking opportunities, but there's plenty of time for you to arrange plans for the next ITEXPO.

Either way, we hope you'll join us for the next ITEXPO. That's scheduled for Feb. 1-3 in Miami.

One of the many interesting discussions at ITEXPO this fall focused on the migration away from the PSTN and toward IP-based networks and endpoints. Of course, there's little doubt that IP is our future and the PSTN is the past. But just how long the legacy voice network will hang around remains a matter of debate.

At ITEXPO, a panel of industry luminaries discussed the likely life expectancy of the PSTN, and related issues of the migration from POTS to IP-based voice and other services.

Participants in "2018: The Death of the PSTN" keynote luncheon panel included Daniel Berninger of Cipher Software; Marc Matthews of Metaswitch Networks; Mitch Simcoe of GENBAND; Payam Maveddat of Taqua; and moderator Richard Shockey, who heads up The SIP Forum.

In response to Shockey's question as to whether it's time to phase out the PSTN, Berninger indicated that it is.

"Nobody mourns the demise of the iPhone 15 when we're going to get iPhone 16," Berninger said, noting that the important thing is not what goes away but what's next.

Matthews of Metaswitch added that it's time to stop investment in legacy networks and move the focus to application-based environments in which voice is just one app on the broadband network. He added that although we're already well on our way to the IP transition, there are still vestiges of the legacy network that are hanging on for dear life. For example, said Matthews, AT&T in some areas doesn't have replacement cards or maintenance staff to service 25-year-old legacy switches (60 of them), some of which have cards melting in the chassis, yet it continues to keep such infrastructure in operation.

Simcoe of GENBAND said he hopes it doesn't take a major network failure to accelerate the carrier transition from TDM to IP.

Matthews added that IP has far more redundancy than does TDM, so if there is a geographic failure, service can be backed up to other areas, kind of like the power grid.

The move to IP also can potentially help network operators introduce new services to reduce customer churn and even get new customers and drive new revenues, said Simcoe of GENBAND. IP infrastructure is also preferable to TDM because the former switches can handle millions of customers, while TDM switches top out at 50,000.

But to push everybody to transition completely from TDM to IP, the FCC needs to set a date certain for this transition, said Berninger, suggesting 2018.

As I mentioned in my March editorial in this space, the federal government's efforts to reform/update the Universal Service Fund and intercarrier compensation – which pretty much everybody agrees are long overdue – could mark the end of the communications world as we know it. The reform is clearly aimed at moving the nation more fully into the broadband era, in which voice is just another application, and away from the legacy, circuit-switched network and the existing regulation that continues to prop it up.

In fact, AT&T and Verizon have been pushing for the end of POTS completely for at least a couple years already. Clearly, moving away from legacy technologies that are more highly regulated and toward IP solutions is to their advantage.

AT&T submitted the follow comment to the FCC in December 2009: "Any such forward-looking policy must enable a shift in investment from the legacy PSTN to newly deployed broadband infrastructure. While broadband usage – and the importance of broadband to Americans' lives – is growing every day, the business model for legacy phone services is in a death spiral. IT

Prediction: Meg Whitman Lasts at HP 12 Months Max

By now you know Meg Whitman is replacing Léo Apotheker as CEO of HP. Look, I personally like Meg Whitman – she is dynamic, energetic and ran eBay for a good while. Two of the major products under her were the auction site with the same name as the company and PayPal.

Effectively she managed two monopolies. And if monopoly is too strong a word, let's say they were super-dominant companies with entrenched market positions.

eBay somehow lost shares to Amazon during her tenure, and the relationship with sellers on the site wasn't the smoothest. Let's say she was an adequate leader in a space where companies like Google were growing and adding new and exciting services continually. She buttoned down some processes and improved eBay over the years, but the sense was she could always be doing better.

PayPal did effectively fight off a challenge from Google Payments; but again, the company was entrenched, and switching payment companies was probably harder for consumers to do than Google expected. Still, Whitman does deserve credit for this accomplishment – dealing with Google as a new competitor and winning quickly is something you should highlight on your resume.

The challenge I have with Whitman is the post-Skype-eBay integration – which never happened. Moreover, there was that whole debacle where eBay purchased Skype but somehow forgot to buy the underlying technology Joltid, which allowed it to work. Perhaps the most amazing move of all was spinning off the company to private equity, which later sold Skype to Microsoft, leaving billions on the table for eBay shareholders.

I wrote years back about the lack of integration at eBay. Under Whitman, eBay didn't even use Skype itself in its customer service operations. This should have been the first move.

HP is in major flux. TMC's Peter Bernstein details all the CEOs the company has had recently and goes on to remind us that HP needs an identity. Moreover, as Peter and I have discussed, in an increasingly ecosystem-centric world, HP has no ecosystem. Unfortunately, purveying printer ink does not an ecosystem make.

But more importantly, the HP board is a mess – a joke on Wall Street. A group of kindergarteners keep secrets better. Let's just say they seem to have a case of trade secret Tourette syndrome. And who knows what is going to happen to the company's PC customers – many are defecting because they have no clue who will end up owning this business.

To make matters worse, Oracle is a vicious competitor with its sights set squarely on the company. And Oracle is making money hand over fist selling software and services. HP, to compete effectively, will have to embark on a software buying spree of its own, which of course has already begun with the announced acquisition of Autonomy.

But wait a second. If Whitman couldn't do the basics when integrating Skype into eBay, how will she not only determine the direction of the corporation, but also figure out which companies to purchase and how best to integrate them?

Hopefully there is someone else who can take on these tasks. It will take about 12 months for the board to figure out this problem– worst case is six months. Hopefully, for the sake of customers and shareholders, I am wrong. IT

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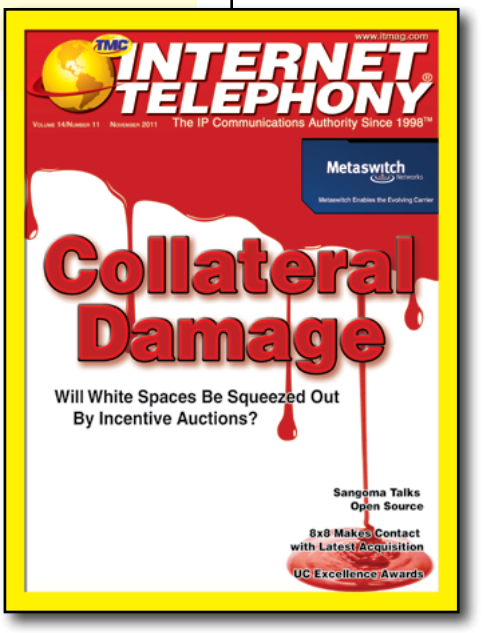

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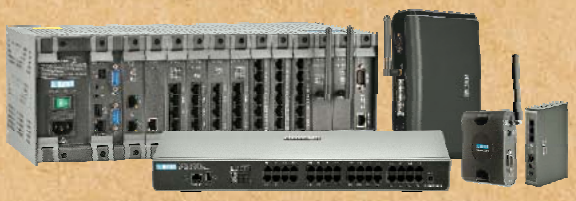

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By Paula Bernier

M2M Offers DHL Visibility on Urgent Shipments

During his 4GWE keynote speech earlier this fall in Austin, Matt Groppe, director of global business development for DHL SAMEDAY, said that the shipping market is changing as customers are demanding more visibility into their deliverables.

"In transportation, there's a black hole, and we had to innovate to [where] we can't see," said Groppe at the 4GWE event, which was co-located with ITEXPO in September.

To address that black hole, he said, DHL leverages an M2M-enabled full sensor suite. The sensors are placed with shipments to enable DHL and its customers to track the whereabouts and condition of package contents. Knowing the location and condition of a package is always good. But when it comes to highly sensitive or urgently needed shipments, it's mandatory, indicated Groppe. He is in charge of the SAMEDAY operation within DHL that handles high-profile and emergency shipments.

"Try misplacing a radioactive drill bit in the Middle East," he said.

Groppe talked about the helplessness and anticipation regular airline passengers sometimes feel when waiting for their luggage to appear on the carousel at their destination airport. Imagine, he said, how anxious a plant manufacturer whose company is losing $10,000 an hour waiting for a part to arrive, or a surgeon who's awaiting materials for an urgent medical procedure, must feel. Armed with M2M and sensors, he said, DHL can let them know when to expect what they're waiting for and that the contents of their package is in usable condition.

He added that there are tremendous opportunities for M2M to "plug other holes in the supply chain."

DHL is a customer of OnAsset Intelligence Inc. OnAsset offers the Vision Software Platform, a SaaS-based solution that provides shippers with 24x7 visibility as to the whereabouts and condition of their high-value assets in the supply chain. It features mapping with custom data overlays that show in real time the state, location and status history of assets being tracked by OnAsset SENTRY devices.

"Our SENTRY asset tracking devices provide a wealth of data, and the Vision platform enables customers to interpret the data, and turn it into actionable intelligence in the event of an alert during transit," said Chris Robison, vice president of development and professional services for OnAsset Intelligence. "The latest version of Vision incorporates functionality that's specifically designed to work the way that shippers and logistics providers work. Much more than just 'dots-on-a-map', Vision is a business-centric tool that helps companies secure their supply chain, and reduce their transportation costs."

There are many areas in which M2M can be leveraged, from shipping, to health care (monitoring patients in their homes), to real estate (tracking the activity on a lockbox) to pharmaceutical (checking the condition of medication en route) industries, to name just a few.

Nikki Cuban, vice president of marketing and business development for OnAsset, earlier this year told INTERNET TELEPHONY that its customers include CDC Software, a cloud-based ERP outfit; CH Robinson Worldwide; DHL; and Flemming Cargo Securement.

OnAsset offers its solution for a monthly service fee per M2M device, and the network and management piece is provided at a per-device fee lower than most people's monthly cell phone bills, Cuban said.

The OnAsset service leverages M2M technology to look at a variety of factors. For example, if an M2M device on a palette or box registers excessive shock, that's typically a sign of theft, Cuban explained. In this case, one of the companies can take steps to check the cargo and call the police, if needed. This capability already has registered big returns for some of the companies using the OnAsset solution, including one business that was able to recover more than $1 million in stolen goods.

In addition to shock, the OnAsset devices can provide information on humidity, temperature, pressure, and light relative to a shipment. Cuban noted that maintaining certain levels of humidity and temperature windows is important in ensuring the effectiveness of some medications and the safety of many things intended for human consumption. IT

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By Jim Machi

The Next Wave in Communications Convergence

Communications convergence has taken many forms, some of which are still going on today. One key convergence from the 1980s involved the converging of open systems-based computing with telecommunications. The computer-telephony integration industry was born, and from that, Dialogic emerged as a key player. The economics of commercial-off-the-shelf hardware in the form of servers and communication boards, with the open systems, open API approach yielded best-of-breed applications and solutions. The vertical era was turned on its side with its menu of open systems-based, take what you need, build innovative applications approach. This is still evident today in different forms, such as the Asterisk open source PBX and software building blocks for the data and telephony converged era.

Yet, another key convergence, perhaps the key convergence that is now coming to full fruition, is the convergence of the core data and voice networks. In the beginning, in the late 1990s, VoIP was a strange and alien concept. The convergence was done by adding data to voice architectures or by adding voice to data architectures. But today, with the emergence of systems built from the ground up to be truly converged voice and data systems, the quality has gone up and we are truly in the converged world.

These convergences have spawned industries – the VoIP industry includes gateways to the tune of approximately $2 billion a year total available market size, softswitches to the tune of approximately $1 billion a year TAM, session border controllers at about $500 million and growing, etc. New players have emerged, both on the service provider side and infrastructure side because of this. Who would have imagined 15 years ago that Cisco or even Microsoft would be key players in the voice realm?

But what does the future hold because of convergence? Due to the capability of the converged networks, hosted offerings have morphed into cloud computing offerings, and we have seen communication-based cloud computing offerings emerge. Cloud computing is about a $100 billion business, split between SaaS, PaaS and IaaS, with VoIP/UC accounting for $5 billion. It stands to reason that communications is at least 10 percent of the $100 billion business. Even IaaS has entered the picture for mobile carriers, as there are mobile carrier/MVNO business models where the wireless infrastructure is outsourced as a service.

Convergence is not over yet. The next great convergence we'll see is the user experience convergence. Users will want to access anything, with any device, at any time, anywhere and will want a great experience. Let's say you are watching TV at home on your HD TV. Then you leave the house and want to resume watching the show on your tablet. Then you move to work and want to watch it on your laptop (during lunch of course). Then you watch it on your mobile phone and then finally finish watching it once again at home. Those in the industry who meet this need first will thrive.

So what factors need to be considered when it comes to user experience convergence? First, the delivery network needs to be context-aware. For example, what is the type of endpoint being used (since you don't want to send 720P to a CIF device)? The delivery network will also need to make the frame size, screen size, codec and transport adjustments depending on the video source. Subscriber awareness is also important to consider since the subscriber may be paying for differentiated services of some sort. Additionally, the network needs to be content-aware – i.e. what is the type of video, how good is the source of the video? And finally, the delivery network needs to be network-aware – i.e. what is the available bandwidth and what is the quality of service? Including analytics to see the video usage pattern can help deliver the best quality of experience.

The next great convergence we'll see is the user experience convergence.

You may be asking yourself what cloud and user experience convergence means for you. For one thing, it means your device doesn't define you. It also means that we may be moving to thin clients – if you will be utilizing a wide range of devices, and the network will be personalized for you, then all your information will need to be stored in the cloud. It will definitely be interesting to witness the next wave in communications convergence. IT

Jim Machi is senior vice president of marketing at Dialogic Inc. (www.dialogic.com).

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By Alan Murphy

Community Clouds: The Next Big Thing?

It's becoming relatively trivial for an IT organization to seek out a cloud provider that meets its technical and business needs. In fact, most successful cloud providers today are catering to a particular benefit of cloud computing, be it the ability for IT to manage their own resources if they wish (or not to, if they prefer that route), or easy integration into the existing IT infrastructure, or even dirt-cheap turn-and-burn resources that briefly spike then go away forever. There's pretty much a cloud provider solution available today to meet just about any IT or business need, but not all of them. For some reason the idea of community in the cloud is lagging behind.

Community clouds are based on the simple premise that like groups of cloud resource users will require like cloud running environments. Not all cloud users are cut from the same cloth, but not every cloud user is completely unique either. In fact the idea that a pre-defined computing template can be applied to most IT and cloud offerings – hence one of the drivers to the huge SaaS adoption today and ITaaS adoption tomorrow – is what drives efficiency in the cloud. At the heart of a community cloud is the basic idea that an organization has peers that share the same interests, risks, and rewards. Much like a user group functions as an environment to share like-minded technical ideas, a community cloud comes together to share a like-minded computing and resource environment.

One of the most interesting applied concepts of a community cloud is the idea that shared resources within the cloud environment can be both shared and restricted at the same time. While virtualization has enabled us to manage our computing and networking resources at an extremely granular level, it's also given us the ability to decide how we manage those resources. Although a physical server that's part of a virtual cluster may be underpowered, only running a handful of virtual machines and having ample resources available to other machines in the cluster, we may not want to give out those resources to just any other VM that comes knocking. We may want to be very restrictive and only give that out within our trusted community.

In my mind, a community cloud is one of the best business use-cases for the cloud I've seen since we moved from the cloud buzzword to actual implementation. It just makes sense as a way to both divide up and manage cloud resources at more of a macro level, one step up the stack – you could probably add community clouds to the crowded layer 8, sharing OSI talk time with users, policies, and politics.

So why haven't we seen a huge adoption rate of community clouds, and why isn't everyone talking about community clouds like they're the next big thing?

I think there are a few reasons we aren't all rushing to build or join community clouds. The first is that many people just don't know about community clouds – not that they don't understand the concepts, but that they don't know such a structure exists. I routinely talk about community clouds at conferences, specifically in the area of data risk and compliance, and every time I give a presentation that includes community clouds I get questions asking what they are. Another reason is that with a few exceptions – such as fed and education – we don't see a huge market push for big business to work together, or at least not publicly. We aren't seeing pharmaceutical companies standing up and asking other pharmaceutical rivals to create a safe cloud area that everyone in that field can use equally. What's the competitive advantage of playing on the same field as your closest competitor?

Cloud providers that figure out how they can offer community-like cloud services that meet particular vertical needs will be the catalysts for opening up community.

We're not seeing a market driver from within, but we could see a market driver from outside.

Cloud providers that figure out how they can offer community-like cloud services that meet particular vertical needs will be the catalysts for opening up community. All it's going to take is a few major cloud providers to offer vertical solutions that show that the providers understand the different needs between different industries. Compliance is a huge driver that can help kick-start these programs. Financial institutions have different regulatory needs than health care, but all health care companies share concerns over complying with HIPAA, for example. A strong cloud provider than can offer a community cloud for health care that includes secure and complaint storage will be able to attract health care providers on its own. We don't have to wait for the health care industry to decide that community clouds are good for everyone; we just have to wait for providers to figure out there's money to be made in community clouds. And then community clouds could instantly become the next big thing. IT

Alan Murphy is technical marketing manager of management and virtualization solutions with F5 Networks (www.f5.com).

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By Hunter Newby

The New American Dream: Real Broadband Speed

America has always offered the promise of a better life for everyone. Over the years the good life has been projected into the minds of the masses as a certain standard that comes with the basic ingredients. Some of the more popular benefits of this society over the past several generations have been the notion of a chicken in every pot and a car in every driveway. In the current generation, one could argue that the new standard is a megabit in every home (or in every hand).

It is somewhat safe to say that delivering on the first two basics were accomplished, albeit not for everyone as some people do not drive and some do not eat chicken, but they still have "access" to those thing if they want them. The point is clear, though. Food and personal transportation are basic essentials, and in this country they were attainable. The same can be said about broadband (high-speed access to the public Internet) in that it is a basic, fundamental need for most people in this country today. But it cannot be said that it is actually available for everyone – even if they want it.

The fundamental issue is what is "broadband"? Simply put, it is implied speed of access to the Internet. Speed is, unfortunately, a subjective term. For the people who only have their feet to get them around, getting in a car going 10 miles per hour would be considered a high rate of speed. That's the same as saying dial-up is faster than nothing. It is a true statement; but unless you are satisfied with just e-mail, it doesn't really help much.

A recent article in The New York Times by Katharine Seelye of Pando Networks, a consumer download accelerator business, said the highest average download speed in any state in the United States is 894kbps. That state happens to be Rhode Island, and that average speed happens to be less than one megabit – in the entire U.S. Idaho is the slowest state, at 318kbps. If 10 MPH is the baseline for automotive "speed" and today we can easily travel through the country at an average, legal speed of 65 MPH, then we need to set out a plan for a 6.5 times increase in the average broadband speed of each state. That's a state average of 2mbps for Idaho and 5.8mbps for Rhode Island.

Population density plays a direct role in achieving both the goals of profitability and faster speed for the consumer. Rhode Island is 50 times more densely populated than Idaho, and therefore has a higher average speed – although it is only 2.8 times faster. Another interesting point to note is that if 92 percent of the customer base of Idaho's largest ISP has "access" to "broadband", but the state average is only 318kbps, then what is the definition of broadband in Idaho? No one can fault a business for wanting to make a profit. Profitability is how businesses succeed, but what about the greater good? How does this issue get properly addressed?

The new American Dream of a megabit in every home needs a dose of financial reality, or else it may forever end up being just that – a dream.

If the population doesn't grow in the sparsely populated areas, the business case justification to build real broadband speed networks may never materialize. Even if grant money can build a fiber ring in the middle of nowhere, where does the money come from for the backhaul out of that county or state? What about the capital necessary just for the routine maintenance and operations of the network? These are not small details that can be overlooked. Addressing this problem and setting out a real plan to fix it will be a massive undertaking.

The new American Dream of a megabit in every home needs a dose of financial reality, or else it may forever end up being just that – a dream. IT

Hunter Newby is CEO of Allied Fiber (www.alliedfiber.com).


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By Max Schroeder

A Reseller Educational Series

Effective Marketing Through Knowledge

In order for your company to win the marketing game, accurate industry information is critical. Some of that information can be hard to come by unless you have access to the right people and organizations. At ITEXPO West 2011 in Austin I was reminded of a phrase used by the New York State Lottery – "You cannot win if you do not play". This column will cover my personal experience for a single 24-hour period and how ITEXPO made me a winner.

The clock starts with The First Annual CMO Summit at ITEXPO West 2011, hosted by Rich Tehrani, CEO of TMC, on Tuesday evening, Sept. 13. Fortunately I was seated next to Fred B. Campbell, president/CEO of the Wireless Communications Association International. Fred shared with me his considerable knowledge of the global wireless broadband industry and the importance of associations for SMBs. Fred pointed out that, "Trade associations are a critical and cost-effective resource for companies that need expertise in Washington. An association can serve as your eyes, ears, and a voice in government affairs."

The opening speaker was Brad VanAuken, the chief brand strategist of The Blake Project. Frankly, I was simply amazed by the amount of essential information presented in such a short period of time. Brad emphasized that first you need to identify and profile your target market and added, "Strong brands make promises to their target customers and require customer insight that is gained primarily through comprehensive market research."

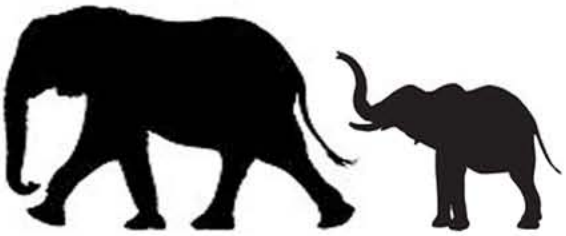
The second speaker, Shawna Vercher, served as a technology advisor to Gov. Jeb Bush and on the national Presidential Campaign for Barack Obama. Shawna's topic was marketing via social media. Ms. Vercher spelled out the areas where social media is the most effective and also identified some potential pitfalls. For example, if you have a personal social media persona, it will be almost impossible to separate that from your business social media activities, so be very careful about what you post.

On Wednesday I attended the SIP Forum "State of SIP and IP Communications" session. Several SIP Forum leaders, including SIP Forum Director Mary Barnes, provided detail-packed presentations. Mary provided a high-level summary of IETF Working Group activities, including some estimated dates for several project completions and release dates for the accompanying RFCs. Presentations also covered the latest proceedings of the Fax-over-IP Task Group, including the joint T.38 interoperability testing program with i3 Forum members.

The sessions and experts listed above are only a few of those I encountered in a single 24-hour period of a three-day conference.

Want to play and win? Visit ITEXPO East 2012 in February. IT

Max Schroeder is senior vice president of FaxCore Inc. (www.faxcore.com).



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By Bob Brewer

Wireless Networks: Why Enterprises Are Moving to Controller-Based Access Point Solutions

There are currently two deployment models for wireless enterprise access points: controller-based with lightweight access points and autonomous access points.

The controller-based solution offers a centralized management model while the autonomous model has the access point providing all the functionality, including security, networking, management, etc. Most major wireless manufacturers offer both solutions, but the trend is moving fast to controller-based solutions in the enterprise space.

What factors are driving this shift? Quicker deployment + easier management + more centralized security management = lower total cost of ownership.

Compare the following real-world primary enterprise wireless deployments: One company is a global electronics manufacturer with 35 plants in multiple countries; the second is a regional retailer with 300 stores. The global manufacturing company decided to deploy a centralized controller-based solution while the regional retailer deployed an autonomous-based solution in its stores. After full deployment of each solution – 1,700 autonomous APs for the regional retailer and 1,500 lightweight APs for the global manufacturer – the effort to configure, manage, secure and support the wireless infrastructure was greater for the autonomous environment. The global manufacturer was able to maintain a two-person centralized team to manage the global controller-based environment. However, the retailer ended up hiring and redeploying several personnel to support its environment. Thus, although the upfront cost of the autonomous solution is lower, the total cost of ownership will be higher.

From a security perspective, all security is individually configured and managed in the autonomous solution, while in the controller solution all security functions are set at the controller. Even more important, wireless intrusion prevention system technology can be added seamlessly in a controller-based solution.

So even though the autonomous solution is less expensive initially, the decreased amount of time supporting, configuring, maintaining and managing APs in a controller-based environment equates to a lower total cost of ownership. Also, managing the wireless infrastructure through a "single pane of glass" is much easier in a controller-based solution.

As a side note, the regional retailer is now considering migrating to a controller-based solution. IT

Bob Brewer is a solution architect at Forsythe Solutions Group (www.forsythe.com).

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By Nick Maier

E911 Applications in a Virtual Environment

Enterprises are rapidly adopting virtualization strategies for their data centers, and we are often asked these days if E911 applications can run successfully in these environments.

Virtualization allows enterprises to maximize the efficiency of their data centers by spreading applications and their associated workloads across multiple servers, rather than having each application with a dedicated server. With virtualization, server efficiency increases, and the overall number of servers is dramatically reduced, saving both capital and operating expense costs.

In response to this trend, voice platform providers including Avaya and Cisco have adopted a virtual strategy for their unified communications platforms, allowing multiple applications to run on or across multiple servers for scalability, redundancy and performance. The next logical question for workplace safety-focused organizations is: Can an E911 application work in a virtualized environment?

A virtualized E911 application can live very well within this environment, providing phone location tracking across multiple call servers and connecting to NENA i2 cloud-based applications for national 911 call routing.

Here are three things to consider when evaluating the merits of running an E911 application in your virtual environment:

- Has the E911 application been built with virtualization in mind? It can be difficult to adapt legacy enterprise applications to run in virtual environments.
- Is adequate memory, processing power and storage available? Review the application's virtualization spec sheet to determine the amount of CPU, virtual memory and storage the application requires.
- What about backup? Review the redundancy and scalability strategy for the E911 application in the virtual environment. Like any other mission-critical application, you'll want to plan for uninterrupted operations.

Virtualization is a great story and delivers real bottom-line results. That's why enterprises are moving their voice platforms and their associated voice applications into virtualized data centers. The good news? By applying the same planning discipline you employ with your other enterprise applications, your E911 solution can run efficiently in a virtual environment to protect your employees and visitors. IT

Nick Maier is senior vice president of RedSky Technologies (www.redskyE911.com).

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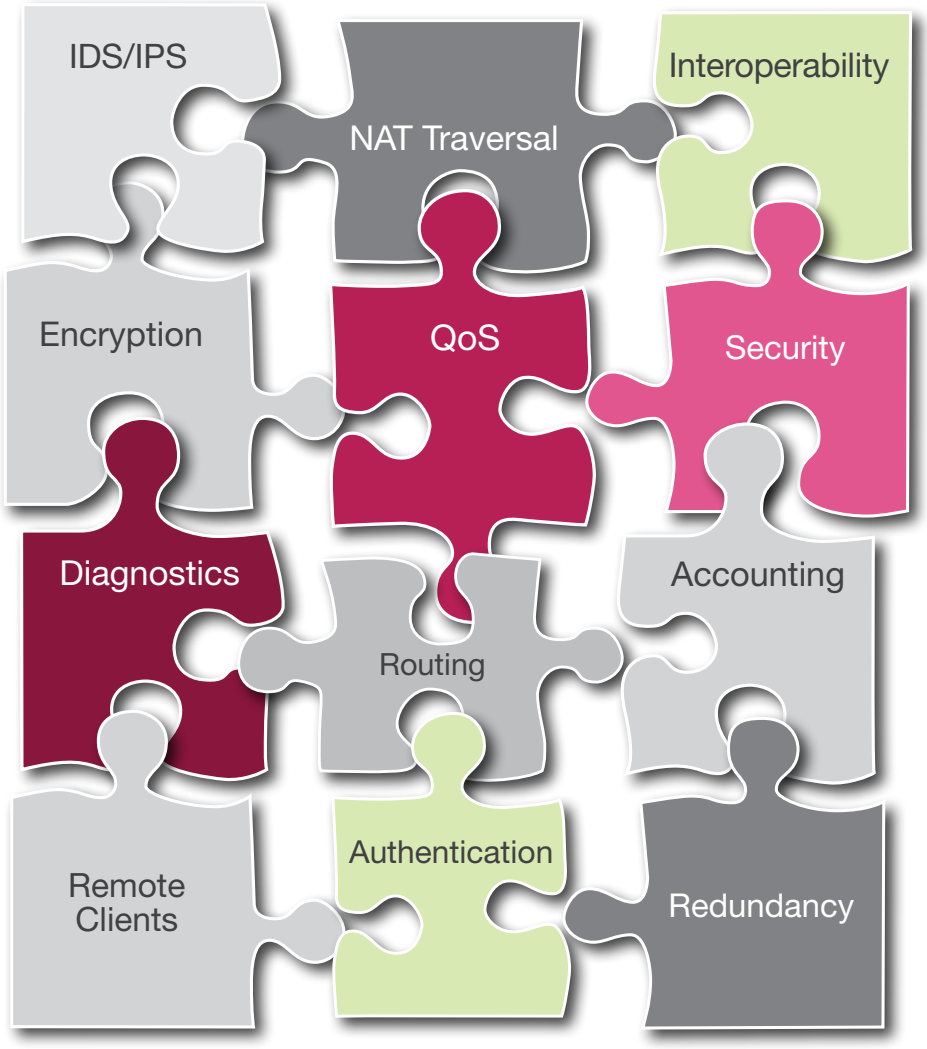

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By Ken Osowski

SIP Trunking and Beyond

New Business Models for Service Providers?

Now that SIP trunking has proven to be successful delivering basic voice services to businesses, the network infrastructure investment made by service providers needs to be utilized for other services in order for service providers to monetize their capital investments. So what are the services that go beyond basic SIP trunking services?

The most obvious ones are communication services that include HD voice or video. This can include two-way point-to-point or multi-point conferencing capabilities. Next are unified communications and the ability to federate these services across business domains. Other services that add value to real-time communications include session recording and integration of real-time communications in web applications.

Unified communications not only includes voice and video communications but the ability to add application sharing, collaboration, presence, and other multi-modal communication capabilities. These capabilities are often services offered by one UC vendor that has little inclination to interoperate with competitive products. This is where the concept of federating or interconnecting UC services becomes important. Service providers that host multiple UC services in their network are then able to offer UC interworking using a federated services model where they act as the brokers in connecting businesses with different UC products in their network.

Beyond these rich media communication capabilities is the ability for service providers to weave these capabilities into web-based applications. Many application use cases are possible, like click-to-talk and click-to-video in a variety of service provider hosted services such as contact centers and conferencing. Also, with legal regulations emerging to mandate recording of all forms of communications for legal or business compliance reasons, service providers can add session recording as part of their SIP trunk services.

Service providers are in a great position to offer value-added SIP trunking services.

IP communications makes it possible for higher quality voice services to be made available, and SIP trunking provides the vehicle for service providers to deliver HD voice. With more business communications happening between IP endpoints, the vestiges of circuit-switched quality voice communication is getting replaced with HD voice. Service providers offering SIP trunking services can offer their business customers enhanced voice services using higher quality codecs initially on-net. With the introduction of HD voice in mobile and fixed line networks, this will embrace off-net HD voice interoperability, increasing the demand for these services.

For many businesses, video will be the next voice you hear. Video provides a more immersive communication medium and has increased in usage as over-the-top communications video services have demonstrated. Even with on-net video as the primary usage model, video presents more challenges to service providers as video transcoding is needed to widen usage among disparate clients.

So service providers are in a great position to offer value-added SIP trunking services. Service providers have been building out these networks with the deployment of session border controllers and their MPLS networks. Businesses can now readily connect to this SIP trunk infrastructure by deploying premises-based session border controllers, making it much easier to turn up the services I have described here. Now with SIP trunk networks gaining worldwide momentum, the monetization of this network infrastructure represents the next wave of business model opportunities for service providers. IT

Ken Osowski is director of service provider product marketing at Acme Packet (www.acmepacket.com).

By Paula Bernier

Susan G. Komen for the Cure Taps XO Communications for UC

Sometimes the little things mean a lot.

For example, while Susan G. Komen for the Cure liked the opex model of its former shared tenant PBX services, it found the solution's costs and turn up times excessive when it came to adds, moves and changes. That – and the breast cancer organization's desire to add call center functionality, do call recording, better support its mobile workforce, and integrate the communications capabilities of its Dallas and Washington, D.C., offices – led it to issue a request for proposals for all of the above.

XO Communications answered the call and, in the end, won the business.

Aldo Ramirez, director of product sales at the nationwide provider of advanced broadband communications services and solutions, says Susan G. Komen for the Cure had a lot of requirements that hit XO's sweet spot. Rather than owning and managing its own PBX, the organization wanted to outsource all that, so XO's managed PBX offer (called XO iPBX) was a good match there. Importantly, XO offers an administrative portal that allows customers to do everyday types of moves, adds and changes (such as changing voicemail passwords, as just one example). For Susan G. Komen for the Cure, that added up to significant savings, and it meant no more waiting eight to 12 hours for such changes to be implemented, Ramirez explains, adding that XO helps out with major changes when required.

Susan G. Komen for the Cure went to all IP telephone sets with the move to the XO solution. Ramirez says the organization liked the idea of having a single drop for wiring, and being able to move the phones around without rewiring the whole closet. He adds that the organization also was attracted to the phones' color displays.

In addition, XO brought together communications for Susan G. Komen for the Cure's Dallas headquarters and D.C. office, and enabled the organization to realize remote worker and resiliency benefits in the process. The customer's 300-employee Dallas location had been on an older Nortel platform deployed in a shared tenant service/rental situation; D.C., meanwhile, was using an older key system to serve about 40 workers there. XO introduced Susan G. Komen for the Cure to a managed services solution based on the Avaya IP Office platform that delivers consistent functionality across both locations. Now, calls are easily routed between the two sites, and a receptionist from one office can handle calls from another.

What's more, a teleworker license allows Susan G. Komen for the Cure workers to take and make calls from any location and appear as if they're in one of the offices. The receptionists now have a more user-friendly interface through which to manage communications. And the new solution, which employs XO's MPLS capabilities, allows for survivability should communications to either of the customer's locations go down.

Unified communications is also part of the solution.

"It's usually one of the first requirements customers ask for these days," Ramirez says of unified communications. "It's table stakes."

Susan G. Komen for the Cure today uses the solution's voicemail-to-e-mail feature, which allows for ease of communications management, especially when users are traveling. The organization also expects to enable click to dial functionality, among other features, via Outlook, says Ramirez.

"The solution provided by XO Communications provides a major step forward in the way Susan G. Komen for the Cure employees use technology to communicate," says David Dawson, vice president of information technology at Komen. "The ability to increase productivity, ensure seamless communication across our offices and lower costs is important as we strive to effectively interact and communicate life-saving messages to audiences both within and beyond our walls."

It's been nearly a year since XO got the RFP from Susan G. Komen for the Cure. The customer moved to the new communications solution – which includes voice, Internet access and private data networking capabilities and services – in the May/June time frame.

XO's ability to act as the single point to meet all communications needs is what ultimately helped it close the deal with Susan G. Komen for the Cure, says Ramirez. The customer has seen an overall savings of about 20 percent as a result of the XO-provided solutions, he adds. That comes from the elimination of long-distance charges; updated trunking; and, of course, big savings in terms of moves, adds and changes. IT

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By Scott Cain

For Unified Communications, a Future Unclouded

The IT industry is prone to get enthusiastic about emerging technologies. In many cases, this enthusiasm drives support for technologies that go on to make a real difference to business performance or, in some cases, people's lives.

On the other hand, this enthusiasm sometimes hurts a technology's chances of being taken seriously. We are all too familiar with Gartner's Hype Cycle. Unified communications and collaboration technologies have over the years suffered from being overhyped.

This year, some are claiming unified communications will come of age. So why should this year be any different from previous false starts? The answer lies with another emerging technology that has suffered from its own share of hype: the cloud.

De-risking post-recession ICT investment

The potential benefits of UCC have been talked about for years, often breathlessly. But as the world emerges from recession, companies are optimistic that they will now benefit from concerted UCC investment. Why?

One reason is that the recession has given corporate purchasers of managed networked IT services the chance to rethink their own strategies.

The conclusion many are coming to is that overhauling entire sections of their IT infrastructure may no longer be financially – or politically – viable. It is much better to be able to demonstrate return on investment for low- or no-capex projects such as network optimization, the adoption of cloud services and partial infrastructure upgrades, where needed.

This is where the idea of UCC technology and the cloud come together at a timely moment.

Hybrid models for unified communications investment

The cloud is beginning to pose CIOs not with simplistic questions like "Should I use the cloud or not," but more nuanced ones, like "Which services should I place in the cloud, which should I keep on-premises, and how should I combine these?"

In the area of cloud services, hybrid models are emerging. Federators are combining multiple cloud offerings, providing more tailored services, more integrated security, and better service level agreements than are possible by shopping around the individual providers. These federators are also able to combine private clouds and existing on-premises services with those located in the public cloud.

This approach means that CIOs do not have to worry about being locked into one set of technology solutions, but rather can see immediate technology investments as a stage in a progressive migration path that focuses on strategic business needs. It means, in effect, CIOs can break down big decisions into smaller, less risky ones. And as UCC moves into the cloud, these benefits are beginning to apply to UCC technology investment too.

Unified communications as a service

Customers fall into different camps, based on their networked IT heritage and networked communications requirements. For example, some use traditional PBX-based architectures, while others use more modern IP infrastructures. Some aim to integrate voice services, while others are seeking to converge multiple communications channels so they become a single platform.

Making the right investment decision depends on heritage and requirements, and also on the culture within individual organizations, such as how far users are given the freedom to choose their own methods of communication within the enterprise. But, CIOs also need to be aware of the changes that are happening to UCC technologies.

Just as networked IT resources are becoming available as federated and hybrid cloud services – whether software-, platform-, or infrastructure-as-a-service – so UCC is becoming available in the same way. CIOs no longer need to choose between applications or PBX architecture. Solutions based on a mixture of customer-owned and hosted services are being developed by UCC federators. Hence new services can now be embedded into existing infrastructure.

The impact on CIOs will be to reduce the requirement for capital expenditure, and reduce technology obsolescence risk. CIOs will be able to build tailored on-premises and cloud-based services to suit their near-term needs, safe in the knowledge that they have the flexibility to reflect their future needs.

It does not come without any risks at all; an investment roadmap and clear target architecture remain essential. These should be pragmatic and realistic, but they don't have to be based on single product families or single clouds. A mixed environment is not only possible; it is likely to be a lower-risk solution, particularly for the medium term.

Building these target architectures and roadmaps is where understanding the software-as-a-service and communication-as-a-service markets, and the technical challenges brought about by the integration of these cloud services with on-premises technology, is essential.

The challenge for CIOs looking at UCC afresh is to investigate how cloud delivery is changing the playing field, how the new models fit more closely with the new enterprise economics, and ultimately, how they can start down a path that gives them future flexibility. IT

Scott Cain is head of design, development and consultancy services for BT in the U.S. and Canada.

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By David Schenkel

Streamline Your Business with Notifications and Surveys

"This is a reminder to make your six-month dental checkup appointment." "This is a reminder for your car service appointment tomorrow at 8 a.m." "Tornadoes have been reported in your area, please take shelter." "There is a power supply failure on server HSV12." "Please indicate your satisfaction with your recent repair."

You've just been notified and surveyed. Once usable only by the largest of organizations, automated notifications and surveys are now available to even the smallest of businesses. So, if notifications and surveys are not part of your unified communications solution, now is the time to consider how you can benefit from them.

Because customers are not easily accessible via an enterprise's communications and IT infrastructure, they can't be easily contacted for timely interactions using typical person-to-person UC collaboration features such as unified messaging, instant messaging and presence. One way in which interactions with customers can occur is by using communications-enabled business process applications that provide for proactive process-to-person communication. And, notifications and surveys play an important part in almost all CEBP customer interaction applications. Consequently, notification and survey CEBP applications are key additions to a UC solution because they enable customers to enter the UC landscape by providing a cost-effective means for them to collaborate with your organization.

Notifications and surveys can be made using a wide variety of communication modes such as voice, e-mail, short message service, fax, and even legacy paging. They also provide a variety of modes by which customers can respond such as automated self-service business applications, or redirection to a live agent. In addition, they also allow for reporting notification attempts, successful connections and client responses.

Generally speaking, automated notifications are used either to inform clients about a real-time event, or to remind them of an action that you want them to take. Real-time event notification applications are many and varied depending on the needs of an organization. Typical applications include notifications for inventory management, equipment failure (especially for IT failures), disaster management, medical test results, group meetings, calls to action, and goods shipment and pick-up status.

But no matter what the event, if event information is in your IT system, you can automate notification of the event. Reminder notifications do as the name implies, remind the customer to do something, such as make an appointment, keep an appointment, or make a remittance. Typical heavy users of this type of reminder include medical clinics, car dealerships, and repair and inspection services (HVAC, appliance), among others. In addition, almost every business has a need for remittance reminders.

A survey application is really just the opposite of a notification, because contact is established by a survey application to collect information from a client rather than to provide it. Automated surveys enable you to collect customer preferences and determine customer satisfaction with products and services. Typical survey applications cut across most vertical markets and include customer satisfaction follow-up calls for recent services, general customer satisfaction surveys, and customer preference and market research surveys.

As with all UC features, notifications and surveys must generate a return on investment to make them worthwhile. And these features, like many other UC features, come with "soft" more difficult to quantify, and "hard" quantifiable, more easy to justify, ROI components. The main hard ROI for notifications and surveys comes from labor/outsource cost reductions achieved by automating manually executed notifications and surveys. Other hard ROIs come from notifications that increase revenue by reminding clients to make a needed appointment, reducing lost revenue due to appointment no-shows, and increasing remittance rates for collections. The soft ROIs come from improved timeliness due to event notifications, resolving missed appointment fee disputes, reducing legal liability associated with follow ups, and improved customer feedback from satisfaction surveys.

How can you add notifications and surveys to your UC system? You have a choice of online application service providers, stand-alone software applications, and features integrated within UC software suites. The one that is right for you will depend upon the volume of your transactions, the financial model that you prefer, and the ease with which you can integrate the notifications and surveys solution into your existing UC system. Working with a trusted expert that is familiar with your business processes and UC system, such as a reseller, systems integrator or consultant, is a good way to choose the right solution for you. **IT**

David Schenkel is senior technology analyst with ADTRAN (www.adtran.com).

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Ask the SIP Trunk Expert

By Steven Johnson

The Importance of E-SBCs

At ITEXPO West 2011 I participated in an engaging panel on the role of enterprise session border controllers in unified communications and SIP trunk deployments.

E-SBCs sit at the edge of the enterprise network to provide control over the SIP traffic. They serve as a crucial element in enabling SIP deployments for SIP trunking, UC and more.

In today's environment, an E-SBC is often used to normalize the SIP signaling between the IP PBX at the customer site and the service provider's network. Normalization allows what are commonly different implementations by the service provider and enterprise to communicate seamlessly. There is no need to conduct extensive trial and error to get the two systems to work together, with the E-SBC two networks can be connected in a matter of minutes. This also gives more choices to the enterprise when selecting a service provider, and permits the service provider to interact with more IP PBXs than would be possible otherwise.

E-SBCs resolve NAT traversal issues by securely permitting SIP signaling and related media to traverse the enterprise firewall. Without this function, most companies would have one-way audio only.

Additionally, an E-SBC will enable disaster recovery, rerouting SIP traffic to a secondary office to keep business up and running. The E-SBC can also shift traffic to alternate service providers, or load balance to multiple PBXs on the customer's network.

Quality of service is another important role of the E-SBC, especially as high-bandwidth applications such as video become more popular.

On the security side E-SBCs are the first line of defense. They can provide authentication (which some IP PBXs do not natively support) and encryption. Deep packet inspection protects against buffer overflow attacks, denial of service attacks, sophisticated intrusions and a small percentage of worms that fit within a single packet.

Intrusion detection/prevention detects DoS attacks based on SIP, and blocks malicious SIP signaling packets designed to attack certain SIP phones, servers or other devices on the LAN.

E-SBCs are an essential element in delivery SIP real-time communications to enterprises. Whether the organization is using SIP for unified communications or only for voice, the benefits of the E-SBC are numerous. IT

Steven Johnson is president of Ingate Systems (www.ingate.com).

Thinking IT Through

By David Yedwab

UC in the Post-PC Era

The post-PC era is characterized by the consumerization of IT. This is a time where the laptop stays plugged into the wall for the most part, and more nimble devices like smartphones and tablets take on the role of the computer on the go. People, the world over, have eagerly embraced the new paradigm of anywhere, anytime, any device communication, collaboration and digital media consumption. By 2012, mobile users will make up 73 percent of the enterprise workforce, according to Forrester Research. With so many mobile employees, ubiquitous access to network resources has become business-critical.

It used to be that enabling remote employees for collaborative work required expensive infrastructure purchases and experienced IT staff. Now this infrastructure is available in the cloud. Cloud delivery is supported by the offload of capex for opex, time-to-market efficiency gained, ability of the cloud to scale elastically for peak demand, flexibility to pay as you grow, and high availability of cloud solutions.

A sweet spot, today, is in the SMB segment as it is generally the case that small business spending leads economic recoveries. This past June IDC projected the nation's 8 million SMBs would spend $125 billion on advanced technology this year, up from about $120 million in 2010.

VoIP and videoconferencing and UC online collaboration are really the up and comers in the next couple of years, and resellers ought to gear up, learn and be ready to take advantage of these emerging technologies that leverage the cloud. Local partners can sell to and support their customers as trusted advisors, guiding them to cloud services (UC as a service) that make the most sense for their businesses, selling UC&C not as a technology but as a business process enabler. These partners can earn both advisory fees and subscription renewal margins from vendors and professional services fees from customers in such services stack areas as deployment, maintenance, and operational support. Moreover, SMBs have less restrictive technical and procurement requirements, resulting in a faster UCaaS sales cycle. IT

David Yedwab is a founding partner in Market Strategy and Analytics Partners LLC (www.mktstrategy-analytics.com).

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Enterprise Mobility

By Michael Stanford

Mobile Mashups

Last August, Skype bought GroupMe, a startup based on group messaging, the clever idea of assigning a phone number through which a group of people can exchange SMS messages (text messages). Each message sent to that number is relayed to all the members of the group, to create the effect of an SMS-based chat room.

As of March 2011, when GroupMe was the hot item at the SXSW conference, a blogger at thenextweb.com counted a dozen other startups based on the same idea. This abundance of competitors was because the effort involved to create an application like GroupMe is relatively trivial. The working prototype of GroupMe was coded in just 1½ days at the Techcrunch Disrupt Hackathon in May of 2010. The coding was fast because the heavy lifting was done by third party back-end services. For example, the GroupMe prototype based its SMS functionality on cloud APIs hosted by a company called Twilio.

Twilio is just one of many service providers selling a la carte capabilities via web APIs. Others offering SMS APIs include Voxeo and Clickatell. In voice communications, one of the most venerable is Tellme (now part of Microsoft), which provides APIs to cloud-based automatic speech recognition and IVR call routing.

For enterprise mobility, the lesson is clear: Monolithic applications belong to the past. When you hide your legacy applications behind your own set of web APIs, you can take advantage of the new web-as-a-platform paradigm, mixing your proprietary capabilities with the best of what is available from third parties like Twilio, and you can deliver a collection of user interfaces optimized for the three main client form factors: PC/laptop, touch tablet and phone. That's easily said, but prototyping is just the beginning. It takes considerable skill and effort to design a scalable, secure and usable application. After the prototype was running, GroupMe raised $11 million to do that. IT

Michael Stanford has been an entrepreneur and strategist in VoIP for more than a decade. (Visit his blog at www.wirevolution.com.)

UC Unplugged

By Mike Sheridan

Planning for SIP Trunking; Considerations to Take into Account

No matter where I travel in the world, telecom managers' eyes gleam when the topic of SIP trunking arises. So it wasn't much of a surprise to me as I looked at a SIP Trunking Snapshot to see that the viewpoint on adoption is still, for the most part, looked at from a futuristic standpoint, but that more and more people are expressing excitement about it. Alright, so we know that there is the potential for immediate and significant cost savings in the business. But what does it mean for those highly regulated outbound contact centers?

From the two-second rule to call abandonment to mandatory caller ID, there are many regulations that organizations understand they need to plan for in regards to their outbound customer contacts. It doesn't just stop there, though. For other operations, like answering machine detection, it's important to realize that this transformation requires even further planning to make sure that the experience is equivalent in a SIP environment to a time division multiplexing environment.

And it's complicated. AMD for outbound SIP connections is typically done by requesting early media where the caller asks the receiver to send audio, even before the call is officially established, allowing processing of the received audio as soon as it's available. To send the audio, the receiving SIP phone collects the speaker's voice, taking tiny slices of the audio stream and sending it over the IP network as a data packet. In many cases, the audio is compressed so it takes less network bandwidth, but that also may reduce the audio quality depending on the encoding strategy. The latency of transmission with the packets going through a switched network adds to the delay in reaching the caller. There is also a jitter buffer on the receiver used to reassemble the packets into a continuous audio stream before playing them out so the playback isn't broken up, as there is no assurance that the next packet will arrive exactly when needed.

All of these added times could affect the ability to meet certain regulations that may be in place on how fast an agent or IVR must be connected to the person that answers an automated call. These rules often mandate a response within two seconds, making even a 5 percent increase in receiving audio a potential issue. So while AMD over SIP is absolutely viable, it's something that needs to be carefully planned for to eliminate any extra delays that could potentially put an organization out of compliance.

What are some things that you've encountered when moving to a SIP environment? What about while applying AMD in your outbound SIP connections? IT

Mike Sheridan is executive vice president of worldwide sales with Aspect (www.aspect.com).

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By Paula Bernier

Sangoma Talks Strategy, Including Its Recent Acquisition


Jeff Dworkin

Sangoma recently acquired VegaStream. INTERNET TELEPHONY used that announcement as an opportunity to connect with Jeff Dworkin, Sangoma's director of marketing, to find out more about the deal and about the company's open source strategy as a whole.

For those not familiar with Sangoma, what does the company sell and to whom?
Dworkin: Sangoma provides hardware and software components that enable or enhance IP communications systems for both telecom and datacom applications. Our customers include developers, systems integrators and network administrators. Developers can integrate our Telephony Interface and Media Processing boards into their telephony applications using Wanpipe software, or by using them in conjunction with Asterisk or FreeSWITCH. Integrators and administrators can use our line of Gateway Products and Appliances to add or enhance the functionality of their networks by using a GUI to configure the products for their particular implementation requirements.

What is Sangoma's special sauce? What wins the company business and keeps customers aboard?
Dworkin: Our legacy is in high quality hardware engineering/logistics along with a very deep understanding of how our hardware integrates into the implementation environment. Ninety-five percent of our orders ship on the same day with a fraction of a percentage return rate.

What does that have to do with open source?
Dworkin: Sangoma has been part of the open source telephony market since its inception. Some of the earliest work on the project that became Asterisk was done using Sangoma frame relay cards. However, the founders of Asterisk decided to move to a VoIP solution and manufacture their own cards. A few years into the Asterisk project, the founder of Sangoma, David Mandelstam, came to understand the potential of Asterisk, but also realized there were serious engineering and productions problems with the boards being produced for use with that project. Mr. Mandelstam quickly re-engineered a number of Sangoma products to support Asterisk.

Sangoma now holds about 40 percent of the total market for TDM interface, media and signaling boards for Asterisk. We also provide most of the TDM interface cards for FreeSWITCH, the major open source telephony competitor to Asterisk.

Sangoma recently acquired VegaStream. When and why?
Dworkin: The management team came to understand that there were certain implementations for which a board-level solution was not appropriate, but instead an appliance-based, external gateway was required. We immediately put such a product onto our roadmap. When we became aware of the opportunity to acquire the product line of VegaStream, it was a simple build vs. buy analysis that lead us to our decision. In addition to accelerating our roadmap, we also see a number of other benefits, including an office in the U.K. to better serve our EMEA customers, a good distribution network that had very little overlap with our existing network, new customers, and an excellent team of people encompassing both engineering and sales.

What is Sangoma's go-to-market strategy, and how is it supporting its channel partners?
Dworkin: Other than our OEM customers, Sangoma's distribution is handled solely through our network of distributors and resellers. At our partner summit last July we announced a comprehensive new partner program that includes such items as:

- availability of market development funds;
- volume incentive rebates designed to reward distributors that grow with us
- a lead referral program;
- discounted ad placement on Sangoma web properties, including all three of our TMC community pages;
- sponsorship and shared event/webinar sponsorship opportunities;
- Lunch and Learn Program;
- content generations for our Partners Website; and
- Sangoma generated content and hardware discounts for end user training.

What can you tell us about what you have in the pipeline?
Dworkin: Our roadmap is divided into three categories: products that extend or improve current product base; products that extend our reach into the market; and those that address the needs of an entire new market. For example, in the first category, we have just released a new T3-Mux. We know that we have customers in the field that use a significant number of our T1 interface boards, but who order a T3 from their provider to take advantage of the cost savings. They have to place a mux between the T3 and our boards. Until now, that mux had to come from someone other than Sangoma. Now they can use a Sangoma product for that task. They get the entire solution from a single vendor and know that our mux is guaranteed to be compatible with our boards. We also have a 16-Span T1/E1/PRI board in the pipeline. Again, this is designed specifically to help our existing customers that need more capacity per server and have been limited by the available PCIe slots in their servers. In the second category, those products that extend our reach, we have a lot of new appliance products. This included the new VegaStream products, but also an SS7 media gateway as well as a gateway that includes transcoding functions. There are products in the pipeline that address completely new markets, but we are keeping those under wraps for just a bit longer. IT

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By sponsoring communities in these technologies, Sangoma hopes to help as many companies as possible to navigate these rapidly evolving technologies:

- **The Asterisk Community** will serve to introduce new players to Open Source Telephony and advance innovative developments around that technology.
- **The IP PBX Community** will help those who are just now moving their Businesses and Enterprises from TDM-based technologies to an all IP-based infrastructure.
- **The IP Telephony Community** will serve as a resource for Developers, SMBs, Enterprises and Carriers who are looking for the most innovating and up-to-date information and solutions in this space.

Learn how to manage the transition and visit these communities on TMCnet today!

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By Peter Radizeski

The Transactional Agent in Cloud

All of cloud is begging the channel to get on the bandwagon and sell cloud services to their customer base. Two things set that back.

One is describing the transactional model as lame or broken or dying. Bandwidth is a commodity business. So are cellular and TV – both flat markets. In a commodity market, where customer acquisition is actually about taking customers away from a competitor, for a lack of value, price is how replacement services are sold via a transactional model.

Don't blame the channel for this, almost all the carriers have failed to build a case for the value of their T1, broadband or metro Ethernet access over another. When the suppliers can't supply a value proposition, the sales force will sell any way they can.

Let's not forget that this commodity access – T1, ME, DSL, 4G, etc. – is the avenue to the cloud applications. The cloud providers need transactional agents in order for the cloud customers to access the apps and data.

Can cloud be sold the same way? I can make a case that it can be. There are a number of CRM applications, web hosting services and e-mail providers. The marketplace – the buyer – does not know how to differentiate between them. Until a trusted advisor can come along to explain the value proposition of app A over app B or service X over service Y, price will be the differentiator.

No. 2 is that a big name in cloud, InterNAP, recently cut commissions and voided channel contracts. (This occurred at least twice, since Equinix cut the Switch & Data agents.) Responding with that-is-the-nature-of-the-channel shrouds the realization that so far cloud providers don't value the channel. Why would the channel sell cloud?

The messaging that cloud providers direct at the channel is not positive. It's almost desperate. "Please sell my stuff!" Beyond the tale of another revenue stream and the charts of analysts' projections, cloud providers have to gain the trust of the channel as well as demonstrate the value of the offering to the customer base. IT

Peter Radizeski is head of telecom consulting agency RAD-INFO Inc. (http://rad-info.net/).

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8x8 Buys Cloud Contact Center Vendor Contactual

By Erik Linask

In a move that likely came as a surprise to many in the communications industry, 8x8 this fall announced its acquisition of contact center vendor Contactual. In reality, the merger is more of a logical evolution of a four-year collaborative relationship – 8x8's contact center customers have actually been using Contactual's cloud-based services for some time.

8x8 is one of the pioneers of the cloud-based services market, having started its business back when hosted was the term of choice. The company has seen significant growth since, and the Contactual deal not only furthers its commitment to the cloud services space, but truly gives it a full suite of cloud services that address the voice and video communications needs of SMBs and enterprises, as well as their call center needs.

The company has been making a push up-market from its roots in the SMB market and, according to Huw Rees, vice president of business development, has seen similar trends with customers buying its contact center services.

Rees. "They have done a great job building reliable services that are in line with 8x8's reliability standards."

As discussed in the August cover story in INTERNET TELEPHONY, Virtual Office is the name of 8x8's flagship business phone system offering, to which it's added call center and UC functionality, call recording and presence management. Mobility is also a component of the solution, which includes soft clients, web clients, and support for the iPhone and Android-based smartphones.

The company also plays in the data and video space.

Last year 8x8 acquired a managed hosting company called Central Host out of Los Gatos, Calif. The company manages servers in data centers on behalf of customers. When they did the deal, Central Host had a $1 million a year run rate; its average customer paid for management of about 10 dedicated servers; and each server only supported a single customer.

In addition to Contactual and Central Host, 8x8's other acquisitions include Zerigo, a Littleton, Colo.-based company that provides virtual private servers, managed DNS services, and monitoring tools for cloud-based server operations. That deal was announced in June.

8x8 this fall announced its acquisition of contact center vendor Contactual. The merger is a logical evolution of a four-year collaborative relationship between the long-time partners.

"We are seeing growth in both the number of customers buying the services and the size of the customers buying those services," Rees told me at ITEXPO West 2011 this September in Austin.

The Contactual acquisition also brings with it an international client base. Though Rees said there aren't any definitive plans for expanding 8x8 services into international markets – yet – he did say there are no plans to shut down any of Contactual's international operations, which are located in Australia, Canada, Japan and the U.K.

With a four-year service integration test run, the opportunity for 8x8 to continue to leverage the global cloud movement and move into global markets plays into its continued expansion into the enterprise space, which brings with it a natural international flavor.

"We are very familiar with the technology and have built close relationships with the operations and technical staff," added

Before the Contactual deal was announced, 8x8 CEO Bryan Martin indicated to INTERNET TELEPHONY that 8x8 has been on the lookout for acquisition opportunities, potentially related to back-up services and/or call recording search tools.

"8x8 has been through a lot and survived," said Martin. "Now we feel like we're in a technological and financial position that's better than it's been in the history of the company, and we're growing aggressively."

The company has been profitable 13 of the past 14 quarters. 8x8 ended its fiscal year on March 31 with annual revenues of $70 million; $8.6 million in free cash flow from operators, $7.8 million of which the company used to buy back stock; and $18.4 million in cash (and no debt). IT

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SOTEL systems

By Carrie Schmelkin

GCS Unveils Inter-Carrier Management Portal

Global Convergence Solutions (GCS) has launched a carrier-to-carrier portal as part of its OSS and BSS solution for communications service providers. The GCS Dynamic Carrier Portal is delivered through the GCS cloud computing platform under a software-as-a-service-based pricing model.

"The GCS Dynamic Solutions Suite expressly addresses the needs of carriers operating in today's complex operating environment by focusing on their specific business and infrastructure challenges and needs," GCS's Chief Marketing Officer Mark Delaney tells INTERNET TELEPHONY. "Our Dynamic Carrier Portal is just the next step in what we believe to be the evolutionary path that the telecommunications marketplace is following.

"The reason we have introduced this capability is that it continues to solve the challenges carriers face as it relates to intelligently and optimally managing the way they operate their networks … from a business infrastructure perspective," Delaney added.

The carrier marketplace has seen technological advancements over the past 15 years that have changed how carriers conduct business. These advances have resulted in cost reductions for all carriers.

The GCS Dynamic Solutions Suite continues to move that forward by automating the majority of the activities involved in managing one of the most complex areas of carrier operations – inter-carrier management.

"Carrier networks are an amalgamation of their networks and third-party networks," notes Delaney. "Our solutions give carriers the critical piece of technology they need to manage these realities in a way that optimizes their network efficiency, margin and quality of service."

The GCS Dynamic Carrier Portal improves the exchange and sharing of information among carriers. That's important given the large number and broad array of carriers today.

The global marketplace consists of between 3,000 and 5,000 CSPs, and due to the technology advancements of the last 10 years, there is no technological reason why each carrier cannot be interconnected with one other. Unfortunately, most carriers interconnect with just a fraction of their peers, maybe three to five percent, because of the complex operational burden involved in supporting these relationships, says Delaney.

"Most of this burden is in the form of sharing and exchanging of information," he says. "This is what our Dynamic Carrier Portal addresses. Via a secure, web-based solution, GCS will make managing these relationships much, much easier, thus eliminating a critical impediment to growth for all carriers."

According to the company, the GCS Dynamic Carrier Portal is a web-based carrier-to-carrier information and data exchange portal that provides "unprecedented visibility and clarity" into the performance of the CSPs' networks. The solution boasts access to network analytics, call detail record reporting, buy/sell rate administration, quality analysis, and other critical capabilities. And it is fully integrated with the GCS Dynamic Route & Rate Management Solution, a next-generation OSS and BSS solution adopted by CSPs all over the world.

"The goal of the GCS Dynamic Carrier Portal is to automate and significantly improve how carriers exchange and share the critical and necessary information to effectively operate on a daily, weekly and monthly basis," Delaney says. "Our customers have repeatedly told us they need to reduce the amount of human intervention and associated latency involved in the exchanging and sharing of this information. In fact, many carrier customers believe that having their staff involved in this process is costing them significant lost opportunity. When carriers deploy and utilize our Dynamic Portal we estimate that they will eliminate about 90 percent of the tasks that their staff performs as it relates to the cumbersome and tedious process of exchanging information. That's new time that can be dedicated to revenue generation."

Delaney says the solution has been extremely well received.

"The reaction has exceeded even our expectations as our customers continue to tell us that this solution is exactly what they needed," he adds. "This is the most significant release we have brought to market in the last 18 months. This has the potential to change the trajectory of GCS, which will create even more benefit for our customers.

"We take great pride in our ability to understand the marketplace because of our experience working in the CSP marketplace," he continues. "With the release of our Dynamic Carrier Portal, we know we are doing that, but the enthusiasm expressed by our customers for this has even surprised us. It demonstrates that the key to delivering any solution is being able to intimately know the challenges our customers face. The majority of the team at GCS has been involved in the intercarrier marketplace for the last decade. We know all too well the challenges that carriers face and our solutions reflect this knowledge. Our Dynamic Carrier Portal is another indication of the thought leadership that GCS possesses and continues to leverage." IT

Carrie Schmelkin is a web editor for TMCnet, the website for TMC, which owns INTERNET TELEPHONY magazine.

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By Paula Bernier

Collateral Damage

How White Spaces Could Get Squeezed By Incentive Auctions

It's no secret that the U.S. is in the red. We've racked up a national debt of $14.7 trillion. That's $47,250 per person, if you average it out by the U.S. population. Now some players in the wireless space are concerned that this red ink will bleed over into white spaces.

Red, White & Blue

Various efforts at the federal level that call for the repacking of TV channels could significantly diminish the potential for white spaces. Perhaps the most prevalent effort on this front is known as S.911, which the Senate Commerce Committee passed in June. Other potential threats to white spaces, according to Stephen Coran, an attorney with Rini Coran, include a discussion draft from the House majority of the Energy and Commerce Committee, a draft from the House minority, language in the debt ceiling bill, and President Obama's jobs initiative.

Standing committee recommendations were due to the Joint Select Committee on Deficit Reduction on Oct. 14, said attorney Martin L. Stern of K&L|Gates. The Joint Select Committee on Deficit Reduction, aka the Super Committee, is expected this month to make its recommendations for decreasing the national debt. As of press time, the Super Committee was slated to make its recommendations by Nov. 23 for $1.5 trillion in deficit reductions over the next decade. If a majority of the 12-member bipartisan panel agrees with the proposal, it could come before Congress by Dec. 23.

The idea behind the efforts described by Coran is to move TV channels closer together to free up more spectrum for so-called incentive auctions. Such auctions would make more spectrum available to cellular service providers, several of which have been talking about ways to address the spectrum crunch. The federal government, which has made big money in the past from selling off spectrum, could use the bulk of this windfall to support new government programs and/or pay down the national debt. It also would likely give a cut of the proceeds to the TV broadcasters that would have to hand over their spectrum as part of the deal.

Yet another key bullet in this whole shooting match is the nationwide public safety network, which has been on the drawing board since the terrorist events of Sept. 11, 2001.

"Right now public safety is front and center," Stern said in an early October interview with INTERNET TELEPHONY.

House Democrats want to give public safety organizations a cut of the incentive auction action to enable them to create the nationwide public safety network championed in The National Broadband Plan. Public safety officials earlier this fall staged media events pushing a message that they need control of D-block spectrum for a national public safety network to keep the populace secure.

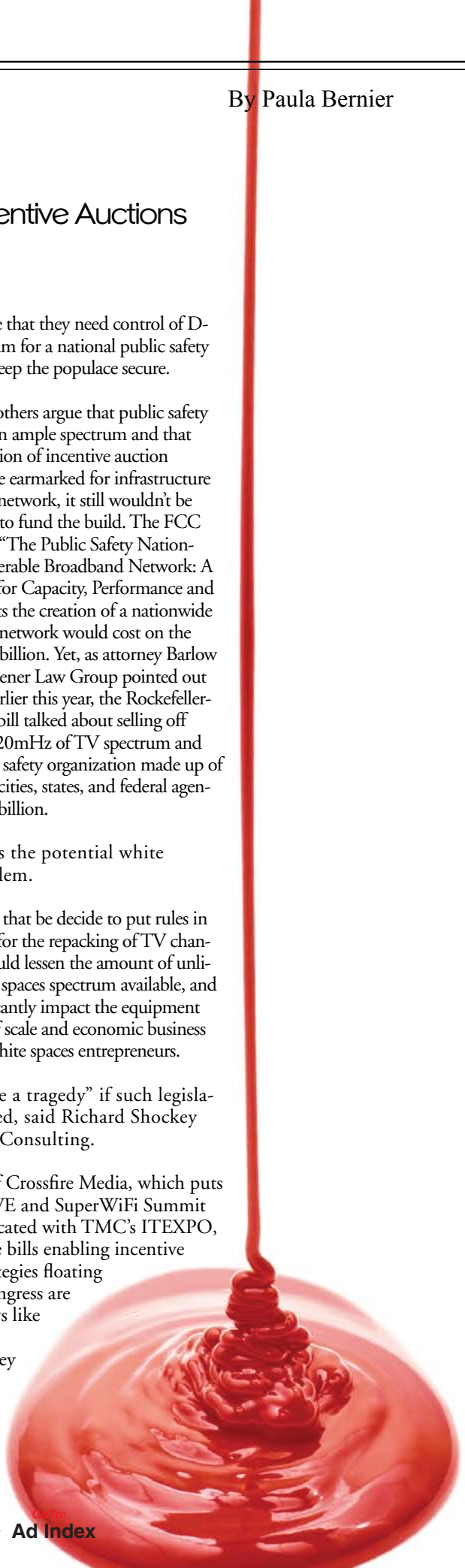
Meanwhile, others argue that public safety has more than ample spectrum and that even if a portion of incentive auction proceeds were earmarked for infrastructure to create the network, it still wouldn't be near enough to fund the build. The FCC report called "The Public Safety Nationwide Interoperable Broadband Network: A New Model for Capacity, Performance and Cost" suggests the creation of a nationwide public safety network would cost on the order of $40 billion. Yet, as attorney Barlow Keener of Keener Law Group pointed out in his blog earlier this year, the Rockefeller-Hutchinson bill talked about selling off 84mHz to 120mHz of TV spectrum and giving public safety organization made up of leaders from cities, states, and federal agencies just $12 billion.

Then there's the potential white spaces problem.

If the powers that be decide to put rules in place calling for the repacking of TV channels, that would lessen the amount of unlicensed white spaces spectrum available, and could significantly impact the equipment economies of scale and economic business models for white spaces entrepreneurs.

"It would be a tragedy" if such legislation is passed, said Richard Shockey of Shockey Consulting.

Carl Ford of Crossfire Media, which puts on the 4GWE and SuperWiFi Summit events co-located with TMC's ITEXPO, added: "The bills enabling incentive auction strategies floating through Congress are in some ways like the stimulus package. They have frozen plans for development of products



as companies wait to see if the white spaces market is taken away."

While these federal efforts aren't active moves against white spaces, added Coran, white spaces could nonetheless become "collateral damage."

The Value of Unlicensed Spectrum

That would be a shame, especially considering all the innovation, jobs and creation of wealth that has happened to date as a result of unlicensed spectrum. Considering its broad prospective applications, Shockey said, the prospects of activities related to white space to create jobs and contribute to the nation's gross domestic product are significant.

Indeed, FCC Chairman Julius Genachowski himself has projected that the new white spaces would deliver "$7 billion in new economic value annually."

Brough Turner, founder and CTO at netBlazr Inc, recently wrote in a piece for TMC's new publication Next Gen Mobility: "For decades, more innovation and more products have been based on the few available slivers of unlicensed spectrum than on any other bands, even mobile. So the prospect of license-exempt access to TV white spaces has been hailed as a big step for U.S. innovation."

How this all ultimately plays out is anyone's guess at this point. There are powerful companies and organizations on both sides of these discussions.

White spaces supporters include such big names as Dell, Microsoft and Google, although some INTERNET TELEPHONY sources have suggested that Google may opt to keep quiet on this one given the antitrust scrutiny it's been facing of late.

Meanwhile, CTIA has been pushing for incentive auctions to make more spectrum available to its membership. In a recent interview, Chris Guttman-McCabe, vice president of regulatory affairs at the CTIA, told me that his organization and the Consumer Electronics Association jointly presented a paper to the FCC in February that said reallocating and auctioning off 120mHz of what they call "underutilized broadband television spectrum" would produce more than $33 billion in net proceeds for the U.S. Treasury. The associations say this is a conservative estimate.

However, even if incentive auctions happen, it doesn't necessarily mean white spaces will be squeezed out, at least not entirely. And there are alternatives to incentive auctions that could help the country move toward many of the same goals.

Jim Carlson, CEO of equipment manufacturer Carlson Wireless Technologies Inc., in September was happy to note that his company and other white spaces proponents have had some success in working with politicians to adjust potential legislation so white spaces doesn't get lost in the shuffle. For example, he said, Microsoft worked with the staff of U.S. Sen. Barbara Boxer (D-Calif.) to add language about the preservation of white spaces to S.911.

Stern of K&L|Gates, meanwhile, suggested that a broadcast flexibility proposal could be a good alternative to the incentive auctions now on the table. Broadcast flexibility, he said, is "a win-win, in that promotes innovation and efficiency; keeps broadcasters in the game and gives them a stake in the mobile broadband future; allows for continued use and development of white spaces; and ensures funds for the Treasury, overall promoting the twin goals of jobs growth and debt reduction."

As for the Federal Communications Commission, in September it reiterated its support for white spaces and talked about the fall launch of a white spaces database.

Just how that will square with the activities of the rest of the Obama administration, Democratic politicians and Congress as a whole remains to be seen. According to attorney Keener, who moderates at the ITEXPO-co-located events 4GWE and SuperWiFi Summit, the Democrats seems to be afraid to ask that white spaces be exempt from incentive auctions, as it could make it look as though they aren't serious about deficit reduction. IT

A Spectrum of Possibilities

By Paula Bernier

White spaces are the slices of spectrum found in the 50mHz-698mHz band. As things now stand, white spaces represent the largest single expansion of spectrum in U.S. since the changes to Part 15.

The changes to Part 15 expanded the use of 2.4gHz unlicensed spectrum and led to the popularization of Wi-Fi. Billions of consumer electronics devices now occupy the 83.5mHz of spectrum in the 2.4gHz space. That includes Bluetooth, Wi-Fi and much more.

Currently representing 276mHz of spectrum, white spaces offer almost three times the spectrum available in the 2.4gHz band. That's the largest block of spectrum available for unlicensed under 1gHz, so it's infinitely more usable than the 2.4gHz bands. White spaces spectrum also has awesome proliferation characteristics.

"This is as good as it gets really," Richard Shockey of Shockey Consulting, told me earlier this year. "This very much reminds me of VoIP 12 years ago, because of its potential implications. No one took voice over IP very seriously 12 years ago, and look at where it is now."

Many business people believe white spaces spectrum could go a long way toward helping expand broadband to all Americans. It also could be used to build corporate networks (Microsoft has already used white spaces spectrum to build a pilot network at its headquarters campus in Redmond, Wash.). It could help deliver in-home applications including smart grid. And wireless and wireline service providers could leverage white spaces to create new or fill in existing broadband networks.

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As the importer of the Yamaha ProjectPhone product line, Fontel is in the process of building a network of authorized Yamaha ProjectPhone resellers in the United States, Canada, and Central and South America. These high quality products with strong brand recognition, are positioned to support the ever growing IP web conferencing (audio and audio/video) markets.

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By Peter Doggart

Balancing Security, Performance and Cost in the Real World

Service providers' IT organizations are tasked with building infrastructure that can scale to meet growing network demands at a reasonable cost while ensuring fast and secure communications. Maintaining a high level of performance while applying stringent security technology has never been easy, and with the confluence of new multi-purpose security technologies such as unified threat management devices and next-generation firewalls and the changing profile of network traffic, budgeting for the correct amount of hardware is becoming a very difficult practice.

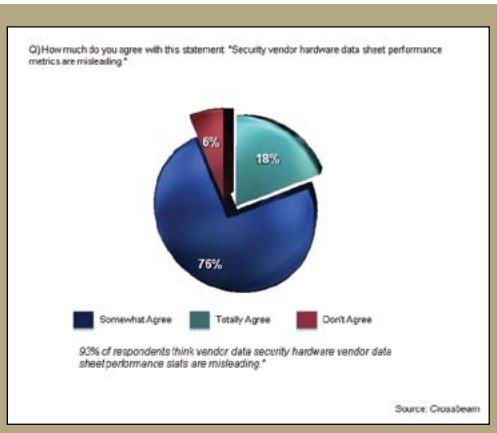
As a result of the evolving threat landscape and the ever-growing sophistication of attacks, security vendors have been busy creating better defenses that combine several protection technologies such as firewalls, intrusion prevention systems, application control and event behavioral analysis. The simple idea is that if these technologies can talk to each other intelligently, then there is a better chance of detecting and removing threats. Although the idea is sound, the reality is that when all these services are combined on a single device, two things start to happen: Performance degrades substantially due to the additional amount of required processing power; and due to the large number of application features that can be enabled or disabled – and the resulting changes in performance levels – performance budgeting becomes very difficult.

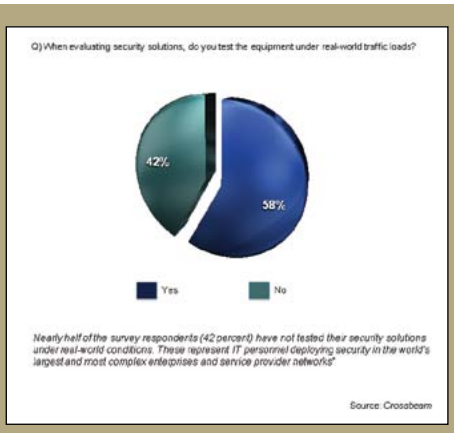
Because of performance degradation and budgeting issues, many service providers have simply turned off multiple security features to ensure reliable and predictable network performance. The result is reduced security efficacy and increased risk.

Another contributing factor to the problem is the changing profile of network traffic. Smart mobile devices have caused a tremendous increase in the amount of video and web-enabled HTTP traffic. This can shrink the average packet size down to 330 bytes, dramatically degrading network security device efficiency because many more inspections are necessary for the same amount of throughput. Interestingly, this can also impact latency, connection set-up rates and total application processing speed.

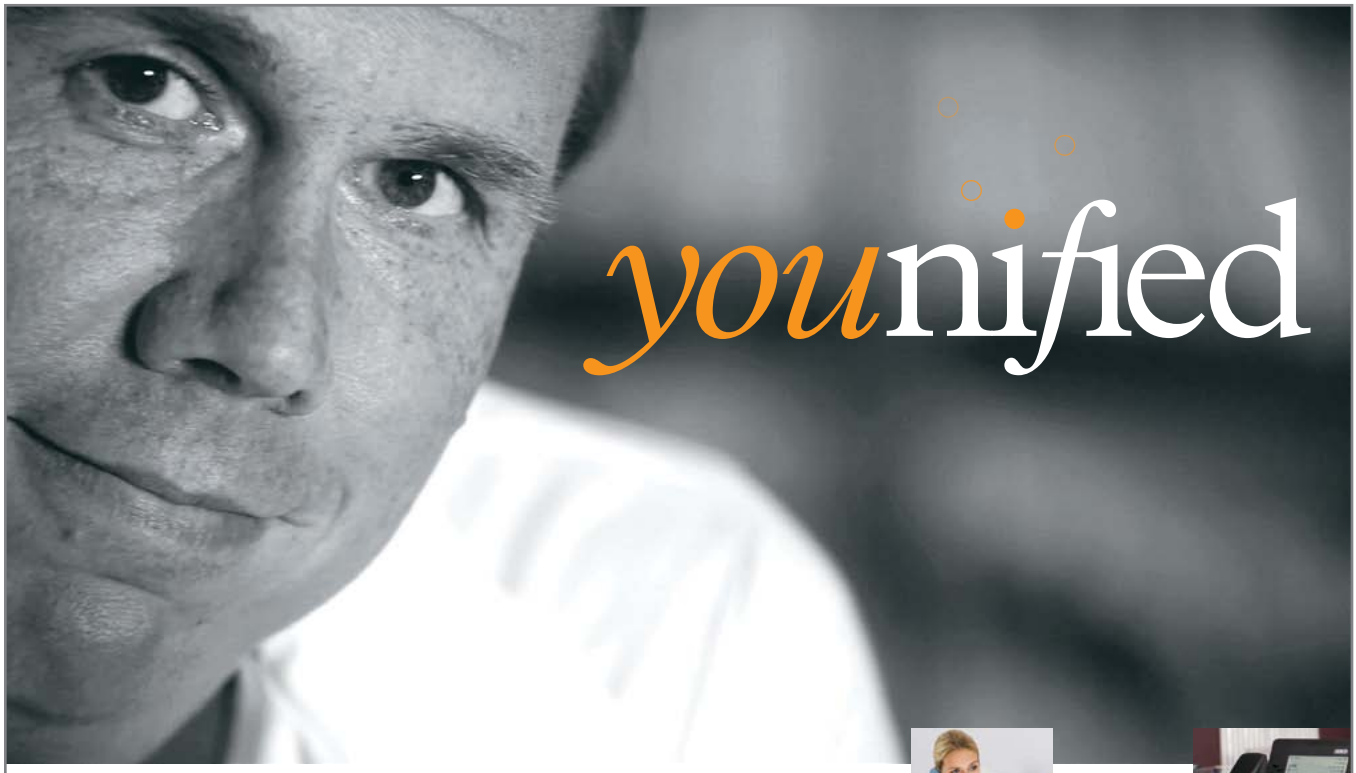
The bottom line is that all of these elements tax service providers' ability to protect users and maintain high levels of service quality and performance.

Crossbeam conducted a primary research study of large organizations in June 2011. Most respondents belonged to companies with $100 million-plus in revenues, and 40 percent came from $1 billion-plus revenue companies. Close to 500 companies took part in the survey, with 32 percent of the respondents coming from the telecommunications and service provider community.





The most striking statistic from the research was that 90 percent of the respondents had to make a trade-off between security and performance. Twenty-five percent of respondents from the telecommunications industry stated that they always had to make trade-offs. Eighty-one percent of the companies surveyed simply disabled certain security features to hit required performance levels, even though two-thirds of respondents from the telecommunications industry ranked security as their top priority.



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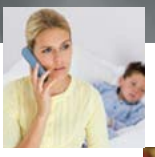

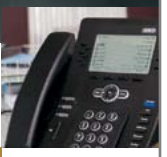

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EN918B03/01/11IT

The key problem highlighted by the survey is understanding how network security devices will perform in production environments. The due diligence necessary to provide this level of understanding is not only time consuming, it requires a specialized skill set that includes working knowledge of networking, security and performance measurement tools. The survey found that 43 percent of companies never performed any performance testing before going into production, and 50 percent of those who claimed to test their products in real-world conditions never enabled simple security functions such as intrusion prevention, which has become a mandatory technology for many telecommunications vendors.

A disconcerting part of the story is that the operators are still in catch-up mode, deploying two- to three-year-old technology that does not take advantage of the intelligence and functionality in newer-generation security products. Two-thirds of respondents were not enabling the web filtering, anti-malware, anti-virus, application control or user identity control that is required to protect against modern application-based attacks.

8gbps throughput performance levels. This is because network security vendors are still using archaic performance measurements such as large-packet UDP forwarding without any firewall rules enabled. These bogus raw throughput numbers are meaningless when it comes to a live implementation.

The survey found that that 47 percent of fixed operators and 78 percent of mobile operators did not trust performance data from vendors, with 94 percent of all organizations finding data sheets extremely misleading. It is going to be important for every telecommunication company to hold vendors accountable to their claims and require real-world performance data metrics up front.

If security vendors cannot be fully trusted to provide accurate performance numbers, then it is up to IT security personnel to ensure the security products can deliver as promised and gain a more accurate understanding of what their networks really require. This would mean ensuring that the test environment:

Eighty-one percent of the companies surveyed simply disabled certain security features to hit required performance levels, even though two-thirds of respondents from the telecommunications industry ranked security as their top priority.

The speed vs. security challenge is particularly vexing to telecommunication providers. Because they have to meet strict security mandates, basic security applications – such as firewall, VPN and IDS – must remain enabled. Given the nature of their business, performance degradation is also unacceptable. The result is that service providers are forced to buy more and more equipment to compensate for unexpected performance degradation. Survey results showed that 70 percent of fixed operators and 83 percent of mobile operators had to purchase additional equipment after initial deployment, impacting capital and operational budgets. The engineering and planning teams have to re-architect their designs to add more equipment.

The following are recommendations for addressing the security-performance-cost challenge.

While service providers are leading the way in terms of expanding for evolved packet core and 4G-enabled, IP-only networks, there has been notable lack of foresight when it comes to network security. Many operators are still thinking short term. Twenty percent of the service provider survey respondents said that when evaluating network security equipment, they only looked 12 months out for anticipated performance needs, and 30 percent only looked one to two years ahead. If service providers evaluate and plan for network security with the same level of scrutiny they do other aspects of their business, many of these issues could be alleviated or better managed.

Data sheet facts and marketing hype have contributed to the overall lack of understanding of what's required to achieve a high-performance security infrastructure. It's not unusual these days to see a performance claim of 120gbps on a data sheet that, when tested under real-world conditions, achieves only

- mimics the exact application mix and packet sizes of today's data traffic;
- reflects the security coverage required, including the exact rules and security applications; and
- takes into account other network factors, such as protocol mix (i.e., IPv6 and IPv4), VLAN tagging and the amount of attack traffic.

Finally, since network infrastructure equipment depreciates over a period of time that is generally at least 36 months long, performance testing should take into account device scalability to support growth over this time period. With global IP traffic expected to increase fourfold over the next five years, four times the current throughput is a good starting point for minimum requirements.

If the required skill sets or resources are not available to test accurately the capabilities of high-performance security solutions, many specialist resellers and integrators have the capabilities and equipment necessary to create real-world test environments.

Network security is a highly unpredictable and changeable landscape, so it's no wonder that we find trade-offs being made even within service provider environments, where IT organizations are among the most sophisticated and forward-thinking. The challenges inherent in trying to run a highly performance-sensitive business – in which there is exponential growth in the volume and variety of data traffic and security threats – are going to continue to plague IT organizations. However, there is an opportunity to ease these challenges, by breaking the industry's complacency, demanding more and taking the steps to prove that you're getting it. IT

Peter Doggart is the director of product marketing at Crossbeam (www.crossbeam).

SECOND THOUGHTS?
about the VoIP gateway decision

Why replace your existing VoIP gateways?

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- Interoperability, compatibility issues
- Missing required features / functions
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Up to 30 calls	$460	SN4960/1E30V SN4960/4E30V	SN4961/1E30V SN4961/4E30V
Up to 48 calls	$750	SN4960/4E48V	SN4961/4E48V
Up to 60 calls	$850	SN4960/4E60V	SN4961/4E60V
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By Devan Cress

Move to Fiber Optics Leads AV Systems Integrators to Seek Single Enclosure Solutions

AV integrators face a daunting challenge when installing complex, high-definition, multimedia systems involving multiple displays and distances over 15 feet: incorporating and often converting a myriad of signal input options to high-definition formats over fiber optic cable and doing so with a relatively clean installation that minimizes potential points of failure.

Although this sounds simple enough, the reality is quite the opposite. With so many possible signal formats – including HDMI, DVI, HD-SDI, S-video, Composite video and RGB – converting, processing and transmitting all the required inputs to HDMI or DVI over fiber optics requires a cluster of off-the-shelf extenders, converters, switches and cabling.

Further complicating matters, high-definition electronics such as Blu-Ray players, satellite and cable HDTV set-top boxes, and computers come with deeply embedded HDCP Digital Content Protection and EDID display resolution synchronization issues that must be addressed in the connections and cabling that – if not done properly – can render content unplayable.

Throw in that most commercial installations also require audio, USB, IR, and Ethernet connections for computer/laptop connections, and RS-232 for touch panel control systems, and AV integrators are often forced to cobble together a potpourri of off-the-shelf products together in a configuration that would make Rube Goldberg proud.

"Any of the individual components will work fine if you're connecting Point A to Point B," says Brad Sousa, regional vice president at AVI Systems, the fourth largest audio-visual systems integrator in North America. "The real challenge is when you start building more complex systems. The more source devices there are that need to be connected to a variety of displays over distance, the more messy, unorganized, and failure-prone the installation."

This is leading Sousa, and other top AV integrators, to seek out solutions they can standardize on that can accommodate the variety of analog and digital video, audio and computer inputs on the market while using a minimal number of enclosures. Such a solution is not only more efficient, but reduces costs while cleaning up the install.

The ability to move to fiber optics is the second part of the equation. Today, companies such as AVI Systems are moving more to fiber optics over copper or CAT5 cabling. The reason? For distances more than 15 feet, copper is not recommended and CAT5 can experience signal degradation over long distances. With cable runs 50-75' or longer for larger spaces, this can be a real issue.

"In a commercial environment, we still use both, but we tend to use fiber more than copper or CAT5," says Sousa. "When we do defense installations, we almost exclusively use fiber optic cabling because it solves other issues as well related to classified/unclassified transmissions."

According to Sousa, most CAT5 extenders for HDMI/DVI often amplify the signal instead of regenerating it, as is the case with fiber optics. The longer the CAT5 cable and the more connections between source and display, the more the signal degrades.

"With fiber optics, by the very nature of converting from an electric signal to optical and back again, you get a really, really nice signal at the end," explains Sousa.

After extensive research into available product offerings, Sousa discovered Broadata Communications Inc., a U.S.-based manufacturer of direct pluggable, mini enclosures and wall plates that can accept any signal input out to HDMI/DVI over a single multi-mode fiber.

"BCI's products allow us to mix and match just about any combination of video, audio and data formats to high definition," says Sousa. "So these products

The Light Bridge product offerings from BCI include a variety of pre-designed enclosures with multiple signal input options out to a single multi-mode fiber.

BCI designs and manufacturers application-specific, single box solutions accommodating almost any imaginable combination of signal inputs for integrators.

become a bit of a Swiss Army Knife for an integrator that is trying to retrofit or upgrade a system from an analog system to a new digital-based transport."

While most off-the-shelf products in this market space are manufactured in Asia, BCI's ability to design and manufacture high-end, even custom, solutions at its U.S. facility differentiates it from the rest of the off-the-shelf fiber extender product market.

What also appealed to Sousa is that BCI's Light Bridge Technology – essentially proprietary embedded software – handles the analog-to digital signal conversion without the need for a separate converter box. This reduces costs, since converter boxes are common components in such systems, and it eliminates several potential points of failure.

The products also address critical HDCP interoperability issues that can occur when an install becomes increasingly complex. HDCP is a method of copy protection designed to prevent the interception of digital data while it is being transported from the source to the display. It uses authentication and a method of key exchange to keep the connection secure.

Sousa explains, however, that HDCP was initially designed to work in a one source, one display type of consumer environment. In today's media or presentation rooms, you might find 10 or more computing devices, two to three cable boxes, and even multiple Blu-Ray players connected to a variety of projectors, flat panels and touch screens. As the required transmitters, receivers and switches are daisy-chained together, HDCP interoperability and timing issues can cause conflicts that can render the media unplayable.

"The value of BCI's product is it enables us to address the HDCP and other data protocol issues despite the number of connected sources or displays," says Sousa.

According to Sousa, AVI Systems has standardized on off-the-shelf BCI's units for many of its projects. At one of the U.S. government's leading National Laboratories, for instance, the unit worked so well that it has become the standard across hundreds of offices as it rolls out collaboration systems utilizing high-resolution graphics in tandem with real-time videoconferencing.

"We were able to build a repeatable process that speeds up difficult installations, and this has had a significant impact on our bottom line," says Sousa.

Another firm advocate of this approach is Kosuke Kisara, a communications engineer who is CTO of PSI Inc., a company that has been heavily involved in introducing fiber optics and multi-media transmission systems into the Japanese market over the past 15 years.

PSI has been using a customized digital video converter/transmitter for HD-SDI, HDMI and DVI to ease cable TV customer's transition from analog to digital, for security surveillance systems, digital signage, hospital operating room HD video systems, and to integrate video, audio and data communication over one pipe.

"We've sold 70 fiber optics systems using DVI converters to this hospital," says Kosuke. "Another customer purchased 30 HDMI fiber optics systems for huge video displays in train stations and department stores."

As in the case of AVI Systems, these systems were enabled via boxes designed by Broadata to eliminate multiple boxes and simplify what would otherwise have been a very challenging installation.

"BCI has been accommodating whenever we have required specific modifications or custom requirements," says Kosuke. "The units are competitively priced, the company is using its own patented technology, and manufacturing it at its own facility. They have been responsive to our needs on quality and standards." IT

Devan Cress is manager of Broadata Communications Inc. (www.broadatacom.com)

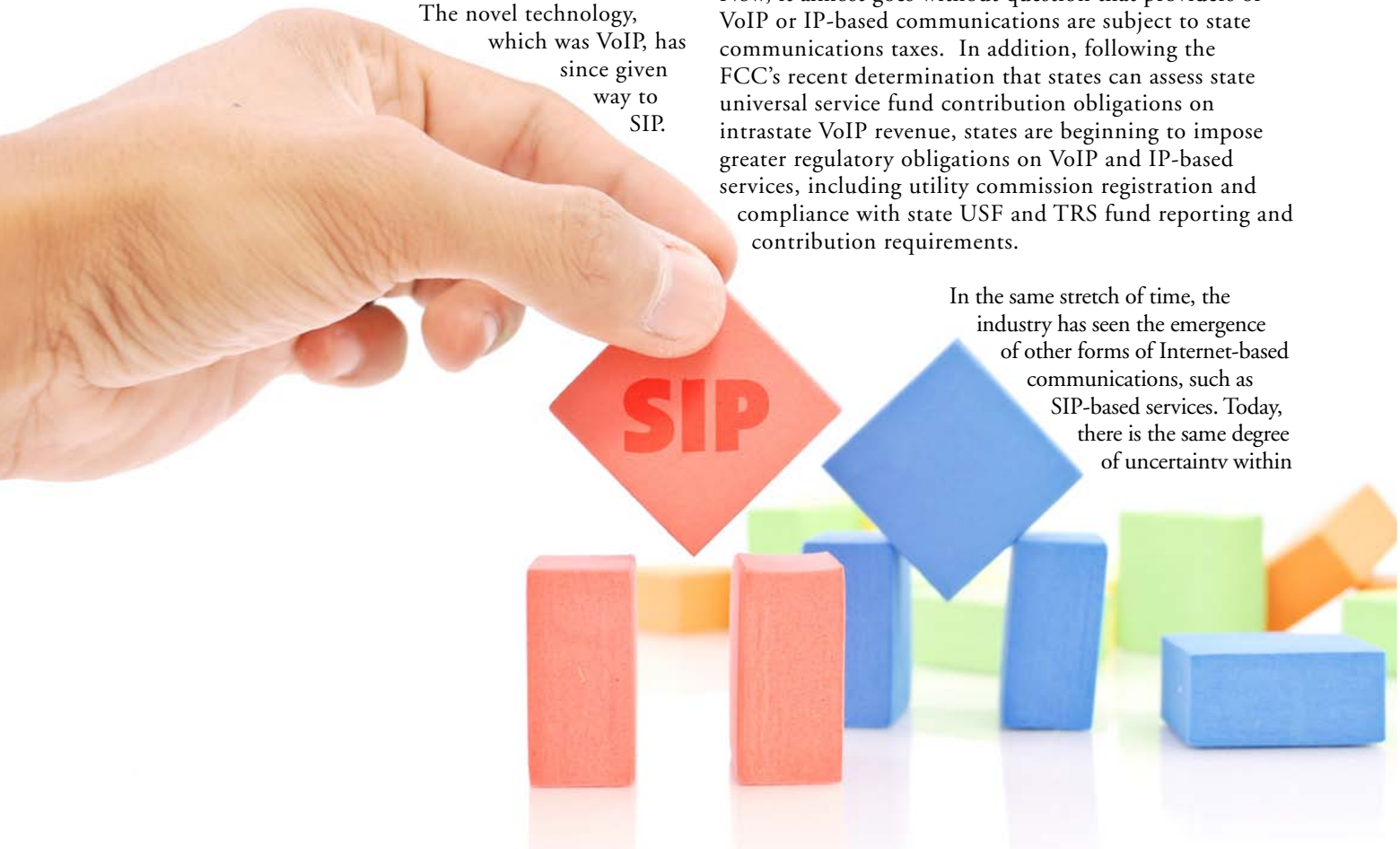
By Jonathan S. Marashlian and Michael P. Donahue

Analyzing SIP's Role in Regulatory and Tax Structures

SIP is an application layer protocol in the TCP/IP family of protocols. It is utilized in the establishment, modification and termination of telephony, multimedia conferencing, instant messaging and other types of real-time communication over IP-based networks. Like interconnected VoIP and other IP telephony services before it, the industry's perception of the federal and state regulatory and tax treatment of SIP is uncertain.

Several years ago, in its seminal Vonage Order, the FCC led the way in classifying VoIP for regulatory purposes, simultaneously clarifying state taxing authority over such services. State legislatures and tax authorities acted upon the FCC's signal, and in the six years since the Vonage Order, state tax treatment of VoIP services has become nearly indistinguishable from their taxation of traditional communications services.

The novel technology, which was VoIP, has since given way to SIP.



And the industry once again finds itself asking the same questions as the title of this article: Is it taxed? Is it regulated? Back then, it was the FCC that answered the call. Today, in what some may find to be an interesting twist, it appears to be the states that are taking the lead, or at least they are in a position to do so.

A decade ago, VoIP, or anything IP, was considered untouchable by the regulators and tax authorities because of a desire to refrain from either taxing the Internet or imposing burdensome regulation on a nascent industry and promising new technological advancement. Then, in 2004, the FCC buckled, issuing orders determining that AT&T's IP-in-the-middle service was telecommunications and exercising jurisdiction over interconnected VoIP as an "inherently interstate" service. These decisions at the federal level opened the door for states to begin taxing VoIP. Since that time, states have interpreted, clarified or amended existing statutes to tax VoIP revenue.

Now, it almost goes without question that providers of VoIP or IP-based communications are subject to state communications taxes. In addition, following the FCC's recent determination that states can assess state universal service fund contribution obligations on intrastate VoIP revenue, states are beginning to impose greater regulatory obligations on VoIP and IP-based services, including utility commission registration and compliance with state USF and TRS fund reporting and contribution requirements.

In the same stretch of time, the industry has seen the emergence of other forms of Internet-based communications, such as SIP-based services. Today, there is the same degree of uncertainty within

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the industry as to the regulatory and tax treatment of SIP-based services as existed in the VoIP industry years ago. It appears that many larger providers understand or acknowledge that SIP, while a unique protocol, is by and large synonymous with VoIP; and they are treating it as such, i.e., reporting SIP as telecommunications and billing, collecting and remitting USF, regulatory fees and taxes on revenue derived from the sale of SIP-based services. On the other hand, there are many more mid-sized and smaller providers that are either blithely unaware or legitimately convinced that SIP is different than VoIP.

On the other hand, taxation of SIP by the states appears far less uncertain, primarily because the underlying statutory foundation of the tax regulations in most states is much broader, which makes the conclusions clearer. Having already undergone years of legislative revision and administrative expansion following the Vonage Order, today's state tax regulations are broadly written for the express purpose of capturing a wider array of new and even yet-to-be conceived communications technologies. In many cases, state tax definitions of the terms "telecommunications" or "communications" includes the transmission of voice or data regardless of the medium, method or protocol used. Under regulations such as these, what becomes undeniable is that if the tax applies to VoIP, it can also be applied to SIP.

The industry should take the history of VoIP regulation as its guide. VoIP providers that were the last to accept that their services were regulated and taxable as telecommunications may have incurred greater costs than their more prescient competitors.

SIP does not fit neatly within the FCC's definition of either "interconnected VoIP" or "telecommunications service." The FCC's current definition of interconnected VoIP includes the words "requires Internet protocol-compatible customer premises equipment." This definition is narrow and may not include SIP-based services that do not include CPE or otherwise do not meet the definition of interconnected VoIP. However, while it has not adopted a formal definition of VoIP, the FCC has generally used the term to include any IP enabled service offering real-time, multidirectional voice functionality, including, but not limited to, services that mimic traditional telephony.

It is not clear if SIP would fall outside this definition of VoIP. Even less clear is whether the FCC or the administrator of the Universal Service Fund, USAC, would tap SIP for the limited purpose of USF contributions by relying on the broad, catch-all definition of "telecommunications" set forth in Section 254 of the Communications Act. To be sure, the FCC has yet to directly address this question. But as it has demonstrated time and again in recent years, when faced with the prospect of dwindling USF support from traditional technologies or services subject to ambiguous regulatory treatment, the FCC has not shied away from taking the more expansive position. For in the FCC's perspective, more often than not the ends (ensuring the sufficiency of the USF) justify the means.

While there remains room to argue that current laws governing the regulation and taxation of telecommunications or VoIP do not apply to SIP, in particular under the FCC's regulatory regime, the industry should take the history of VoIP regulation as its guide. VoIP providers that were the last to accept that their services were regulated and taxable as telecommunications may have incurred greater costs than their more prescient competitors. Most taxes and regulatory fees may be passed through to customers. As a result, it may be better in the long run for a provider to remit these items now and pass the cost on to its customers than to take the position that SIP is subject to different treatment than VoIP and find the company subject to taxes without the ability to recover costs. IT

Jonathan S. Marashlian is a partner at Helein & Marashlian LLC, The CommLaw Group (www.ComplianceAsOpportunity.com), a Washington, D.C.-area law firm specializing in federal and state telecom and technology matters. Michael P. Donahue, a senior associate at the firm, assisted in the preparation of this article.

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By Paula Bernier

INTERNET TELEPHONY Congratulates Winners of the UC Excellence Awards

With the rise and snowballing expansion of mobile networks and applications, communications, connectivity and collaboration seem to be everywhere. Unified communications solutions that intelligently bring together real-time and recorded voice, IM, presence, audio and video conferencing, and other capabilities continue to improve and become available to a broader cross section of the populace.

Here are some of the best and brightest offering on the UC solutions front. Congratulations to this year's batch of UC Excellence Award winners! IT

WINNERS

ADTRAN Inc.
NetVanta Unified Communications (UC) Solutions Suite

Allworx
Allworx 48x Phone System and software applications

Amtel Inc.
TIMS MDM (Mobile Device Management)

AudioCodes
SIP Phone Support (SPS) for Microsoft Lync

BT
customer solution: interactive retail counter

Clarus Systems Inc.
SIP Trunk Business Readiness Verification Service

Cypress Communications, a Broadvox company
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Digium
Switchvox

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By Rich Tehrani

Carrier Snake Bite. Evolve or Die.

For carriers the world over, the competitive threat has shifted drastically this past decade from other telcos to a new breed of companies that didn't exist a mere 15 years ago. Disruption has no boundaries. It attacks incumbent industries like snake venom attacks the nervous system and cells of its victim – causing eventual death.

An iconic brand like Eastman Kodak, for example, was rumored to be going bankrupt a few weeks back – and this is a company that embraced digital photography as early as any company around. Kodak reminds us that seeing disruption coming, and even responding, does not guarantee survival.

The Challenge

Billions of people around the world use phones and in the past 10 years, hundreds of millions of users have adopted Skype, Twitter and Facebook as their primary method of communications. At any point last century, when a carrier lost a customer it had the opportunity to call that customer and give them a special offer or bundle and get them back.

But to someone who has "evolved" from traditional telephony to communication via social and VoIP, it is fairly obvious you can't get them back offering them a bundle on old technology. No amount of bundling would have saved sales in the typewriter industry when Wang word processors and PCs became popular, and the same is true for telecom.

If you don't compete on the same technology plane as the new wave of disruptive competitors, you may as well pet a wild cobra on the head.

Some History

IMS was supposed to allow open frameworks so carriers could allow new apps to be distributed on their networks, and I remember the providers telling me they thought they could approve about a dozen apps per year. Consider how the market has evolved in just a few years as a result of iOS and Android devices; there are now hundreds of thousands of apps in their stores. But when the iPhone became an "open" platform for new apps, the carriers were immediately cut out of the equation. In a way, the success of smartphones with a plethora of apps is the biggest challenge our industry faces.

Kevin DeNuccio, CEO of Metaswitch Networks, takes the stage

A huge part of the challenge for carriers is losing ownership of the address book and relationships a customer has. At one point, the address book was controlled by devices the carriers sanctioned and were linked to phone numbers that had a recurring revenue stream associated with them. Nowadays, Facebook can be the single resource for communications among a network of friends. Ditto for Skype, Twitter and others. A byproduct of new entrants and changes in user behavior has also resulted in voice revenue declining, meaning carriers need to rapidly come up with new revenue streams and ways to increase ARPU and stickiness.

Metaswitch Forum 2011

At the recent Metaswitch Forum 2011 in Las Vegas, the company devoted considerable effort helping its carrier customers compete in this brave new world. The event was the eighth put on by the company and attracted 800 global service providers. And the carriers at the event were extremely knowledgeable – I had two speaking slots and asked them a barrage of questions, and people seemed to all be on their game.

Competitors from Everywhere

And boy do they need to be. Just a few days before the event, Amazon launched its $199 Kindle Fire – a game-changing device in that it is so cheap and powerful. Although it has no microphone or camera, it has helped usher in an era where cloud-based and e-commerce services will help defray the loss of the $50 Amazon is said to be losing on each tablet. To show you how fast things change in a few weeks, analyst reports say the company will have the second-best selling tablet on the market. That's quite an accomplishment.

Moreover, just recently Microsoft formally announced its completion of the acquisition of Skype. Does this mean more opportunity for carriers or less? Will Redmond screw up the company or deeply integrate Skype into all of its apps? Heaven knows that while Skype was under eBay it barely progressed; but my sense is this is a

much more strategic product for Microsoft and will fit in nicely with everything else.

Evolution of Industries

Mobile, social and consumer and enterprise are all becoming one – while we're at it throw in music, movies, photography, entertainment in general and search. Convergence is an insatiable monster swallowing industry after industry – a Borg-like assimilation has wreaked havoc on existing players since before the mid-nineties when the CTI market formally introduced computers to telecom systems.

Bringing it All Together

Speaking of convergence, the theme to me of this year's event was that it is all coming together. Earlier this year, the company showed me its Thrutu (video) service, which it released to allow carriers to add social features to phone calls. With apps for iOS and Android, you can make a remote phone vibrate, send a map of your location, send contact details and photos – merging some of the best features we see in social networks into the phone call.

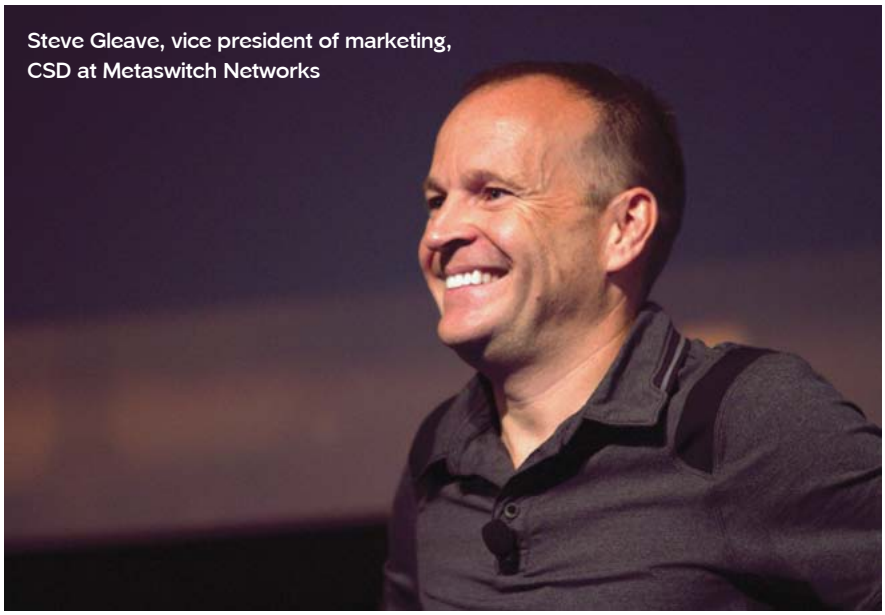
In some cases – like the vibrate feature – I am not aware of any social networks providing the same service.

More than 250,000 people have downloaded this app and, as a result, the company has a wealth of information about which features are the most used. This information is invaluable market research for carriers looking for added revenue streams and to increase the stickiness of their voice service at a time in which OTT may as well be the noise emanating from the backside of a rattlesnake.

Advanced Call Control

The future of the carrier business, according to Metaswitch, is in part being driven by advanced call control – the ability to do many of the things Thrutu already does and eventually allowing communication sessions to migrate between devices – let's say from a tablet to a phone and perhaps a TV.

The company believes the ultimate differentiator is quality of experience – and they know that carriers are uniquely positioned to provide the best quality video, voice and advanced services. Moreover, its experience in IMS, experience in developing consumer apps and history providing



Steve Gleave, vice president of marketing, CSD at Metaswitch Networks

core IMS components makes it believe the company is uniquely positioned to help carriers move to the future.

Does this make sense? Yes, absolutely. And it seemed so obvious when I had a chance to catch up with Steve Gleave, the vice president of marketing at the company, and he mentioned how ridiculous it is that the screen goes blank when we make a phone call (referring to when we hold it to our ears). We live in a collaborative, multimedia world, but phone calls are generally voice only – until now. Perhaps this is why at the conference the company referred to Thrutu as "impulsive in-call sharing."

Metaswitch has clearly decided it is in the software business and will compete delivering end-to-end telecom solutions from applications servers to SBCs and switching solutions. Its recent acquisition of Colibria brings tremendous engineering expertise in the world of IM/SMS, presence, centralized address book solutions GSMA RCS or Rich Communications Suite.

Prescription for Carrier Success

I firmly believe you can't know where you are going if you don't acknowledge the past. To that end, here are some key points from presentations at the event:

- The global middle-class is growing rapidly, meaning more opportunity for mobile devices and apps. There are under 2 billion today, and they are projected to increase to 5 billion by 2030.
- Apple is the biggest competitor to the carriers.
- It took only six quarters for Google Android to become the No. 1 OS.
- Every decade a new list of tech winners emerges, generally displacing leaders from the past decade – think DEC, Honeywell, NCR, Prime and Wang.
- Apple got to be the biggest company in the world by market cap by charging for stuff that makes people look cool.

What Sets Metaswitch Apart

In an uplifting keynote session, company CEO Kevin DeNuccio made the pitch about the fact that consumers will pay for advanced services and, moreover, that Metaswitch is the carrier partner to help provide them.

He further touted the company's ability to design user interfaces and scale to billions with the ability to manage and secure – from provisioning to network visibility. He explained how his company can help carriers change network dynamics in a dramatic fashion, in part due to a flexible architecture that can be deployed on appliances, routers or in a distributed fashion.

He continued by saying Metaswitch is on the road together with customers for the next 5-10 years, and as partners on a journey they will achieve greatness. He closed, explaining that we are at the Sputnik moment, referring to the fact

continued at the top of p. 64

What's Unified Communications, and Does It Really Matter?

By Erik Linask

For all its innovation and advancements, for the past half-decade the communications industry has struggled with a seemingly menial task surrounding one of its most popular terms – defining unified communications.

Most people talk about the PBX features, unified messaging, mobile integration, fax services, video calling and conferencing, IP endpoints, single-number reach, collaboration and content sharing, and more, with each vendor naturally focusing on its own core strengths among those various elements. Today, even social media has become a part of the UC conversation in many instances, along with integration into call center and CRM systems.

Then there's the delivery model question. Is hosted or on-premises the better alternative, and what about cloud-based UC? Delivery inevitably brings the conversation right back to the features and capabilities above.

Likewise, each adopter of unified communications has a unique perspective on what he or she wants out of a UC solution, typically stemming from the state of existing technology and budgets, with the reality of use cases often playing second fiddle.

Interestingly, there is one physical component of unified communications that most people fail to include – it's one that nearly every user can leverage, and it's one that requires very little in the way of technical support.

It's the headset.

Most of us live in states that have passed hands-free driving regulations and know well the benefits and convenience of wireless headsets. (Currently, well over half of the U.S. states have passed some form of mobile device usage while driving bans.) Likewise, we have also become intimate with our preferred style of headset. Some like smaller, lightweight units, while others are willing to forego size for audio quality.

Because the hands-free experience is a significant improvement over having to hold the handset to the ear, or the cell phone speaker option, which struggles in the quality department, users have also taken that experience into home and office environments.

Bluetooth headsets now can be easily paired with laptops, home phone systems like the Panasonic phones I recently purchased, and multipurpose desk units from vendors like Jabra, Plantronics, and Sennheiser. (I have Jabra and Sennheiser units on my desk that enable hands-free conversations via desk phone, mobile device, and laptop/softphone.)

When I spoke with Jabra's Damon Williams in September at ITEXPO West 2011, he noted the one major deficiency in the overall UC environment is that no single vendor, despite the plethora of quality products on the market, has been able to bring together all the different tools, devices, and applications that collectively make up a broad – and near-universally acceptable – definition of UC. Until Microsoft's second take at it with Lync.

Williams noted unified communications has, in fact, been a significant growth driver over the past year and a half, adding the company is really focusing its efforts on providing choice to businesses that they can, in turn, pass that on to their employees.

"The headset is becoming a more and more important part of the end-to-end solution," he said. "But, the end user makes or breaks the solution that goes into a business."

With that understanding, it follows that comfort, along with audio quality and features, play a role in design.

The next version of Jabra's PRO line will continue building on simplicity of experience – easy and quick install with minimal, if any, IT involvement (I was able easily install mine in minutes) – and adding touchpad dialing instead of clicking with the mouse. It's all about a more enjoyable and effortless user experience.

"I'm really excited about the whole UC piece and seeing it come together," Williams said. "Now, it's about what are you doing about UC, not that you are doing UC – that's where UC originally failed, where everyone was trying to define UC."

He's right. We don't define a car based on features or capabilities – we all agree a car is a vehicle, typically with four wheels, that serves as a human transport mechanism. Why can't unified communications be just a vehicle that serves as a communications transport mechanism, with each user or business defining the specific features and capabilities for themselves, determined by their needs and budgets?

As for the headsets, the truth is there are a number of neat features vendors have added, but these gimmicky features are not going to be the long-term drivers of success. The two factors that will continue to overshadow others – especially as headsets become a greater part of the UC conversation – are audio quality and comfort. **IT**

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that the Russians got to space before the U.S. – basically a reference to the fact that Apple and Google have the lead. He continued, "Together we can get to the moon first."

Disruption really is like a venomous snake attack, but the honey badger is one of the animals which has not only evolved immunity to snake venom, it actively hunts venomous snakes and if it gets bitten while killing the snake, it takes a nap for a few hours, awakens and eats the snake. This animal should be the role model for any company in any industry facing disruption. IT

What Customers are Saying

I had a chance to listen to lots of customers talk about Metaswitch at the show. (It is amazing how open show attendees are when you put your press badge in your pocket.) In general, many customers talked about how the company's incredible support and constant improvements to their products set them apart in the market.

I had a more formal meeting with Jeff Willoughby of SureWest, who told me his company's biggest challenge is to maintain margin and the competitive advantage of his own company's network while challenging others (outside their physical footprint). When asked about what he thinks of Metaswitch he said, "Metaswitch continues to innovate and as a customer we need to know what is going to happen." Regarding why he attends the forum he replied, "If we wait for anecdotal updates we may be at competitive disadvantage."

I also spoke with Stephen Hon and Jared Grugett of Hawaii Telecom, who told me, "Metaswitch has a very progressive stance on feature development relating to carrier-class telecom services." The trend they see in Hawaii is similar to the rest of the world – the move to IP. The only difference is there is less competition in their state, and they feel they have a huge head start because the company is a Metaswitch customer. They went on to say, "They have an excellent support organization, which helps facilitate small company growth."

– R.T.

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