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INTERNET TELEPHONY

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Inside:
VTech Discusses Making the Move to SIP Telephony

PanTerra Networks Leads The Next Wave of Cloud Services

Arthur Chang, president and CEO of PanTerra Networks

Prepare for a Year of Intense Cellco Marketing & VoLTE Intros

What's New in the Microsoft Lync Ecosystem

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What's Driving Software Telco?

Network functions virtualization and software-defined networking are getting a lot of attention these days. SNS Research in a new study estimates that SDN and network functions virtualization will be worth a whopping $4 billion this year. SNS Research expects to see compound annual growth of nearly 60 percent in this space over the next 6 years.

Service provides like the tier 1 telcos, their vendors, and SDN startups are all working to move these concepts forward, as are others with an interest in the data center. Media companies like TMC, the publisher of this magazine, have launched events to help educate the industry on these important new trends. And the investment community is moving to get a piece of the action by placing their bets on some of the newcomers in this space.

So what is fueling all the excitement?

Some people like to talk about network functions virtualization and software-defined networking as a path to network transformation. And that, to me, is what it should be all about.

But Craig Farrell, vice president and CTO of the global telecom industry practice at IBM, said that every conversation he has with tier 1 carriers about these topics starts with these service providers discussing how much cheaper it will for them to run their networks on generic hardware. As a result, "making sure opex goes down is absolutely critical," Farrell told the crowd at the recent Software Telco Congress.

Operators want to go as quickly as possible to NFV and SDN not because they have a bunch of new services they are ready to turn up, but rather because they want to save money, he said. And he added that they want to save without taking out their networks via outages.

Everybody knows telcos – and for that matter, just about every other kind of business – is keen to lower their operational costs. But the bottom line is that the revenue/cost model is broken for the traditional communications services operator and fixing it will require more comprehensive strategies. What's required is a whole new way thinking about networks, and then putting that thinking into action. That change can initially be about making carriers more lean and mean, sure. But, in the end, it needs to be about business and network transformation that enables these companies to monetize their assets.

Steve Gleave, senior vice president of marketing at Metaswitch, who also spoke at Software Telco Congress, said the top carriers are already aware of this reality, as indicated by their move to come together to write a white paper and form a network functions virtualization group within ETSI. He added that 25 operators are now in that group.

So what will addressing this reality entail?

Becoming a software telco, Gleave explained, entails transformation of your architecture and how you do business; embracing a programmable network that includes a rich set of APIs across layers; a new posture of agility, meaning the ability to churn out new releases every couple of months; and an understanding that this transformation is a business necessity.

Paul Miller, GENBAND's vice president of technology and strategy, who also spoke at Software Telco Congress, commented: "The virualization of network functions is only a preliminary step toward the modernization of today's telecommunications network. If network operators are to realize the full opex, capex and go-to-market potential of NFV they must incorporate advanced concepts of cloud and SDN, including elastic scalability, orchestration, dynamic service creation, and scalable hardware resources into their network evolution strategies."

NFV rose to prominence in industry discussions follow the formation of the ETSI Network Functions Virtualization Industry Specification Group, to which Metaswitch's Gleave refers above. AT&T, BT Group, Deutsche Telekom, Orange, Telecom Italia, Telefonica and Verizon drove the creation of this ETSI group, which came together in November 2012. IT

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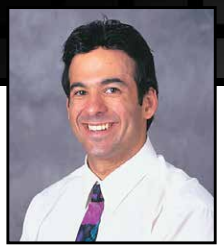

The Ghosts of Tech Past and Future

If you want to marvel at the future of wearable tech, as well as the future of augmented reality, take a look at a video from Atheer Labs (http://tinyurl.com/n83mhsf), which shows just how fast things can evolve before our eyes.

Just a few years back Corning wowed many with its Day Made of Glass video series (http://tinyurl.com/l26fdcf), which envisioned a world in which every surface was intelligent thanks to its smart-glass solutions. Now, however, we see that augmented reality in many ways alleviates the need to add glass to every surface with which we come in contact.

Almost overnight the concept of wearable technology has wiped out potentially tens of billions of dollars of extra spending to touch-and-display-enable our world. Wow. Talk about a disruptive technology – smart glass getting disrupted by smart glasses.

If you want to learn more, check out the Atheer labs Indiegogo funding page where you can donate $10, purchase a pair of Atheer One glasses for $400, a variety of developer and gift kits, and more.

While you're online, you might want to check into TMC's site related to Wearable Tech Expo (http://tinyurl.com/ocaagwc), which will be held on July 23-24, 2014, at the NYU Kimmel Center in New York City.

Wearable tech is obviously a hot new area, which is why TMC recently launched the Wearable Tech Expo. Our most recent event took place in December in Los Angeles.

Among the featured speakers at the December Wearable Tech Expo was Philippe Khan (http://tinyurl.com/qbsugkh). He is one of the tech entrepreneurs and visionaries who really defines the term successful serial entrepreneur and inventor. In the 1980s, Khan was CEO of Borland, the company which made a number of programming tools and eventually purchased Paradox, the most-popular full-featured PC database program. TMC ran on both Turbo C and Paradox in the eighties; I know this because I was the person in charge of the programming and running IT at the time. I first used Turbo C in college on a 286 clone that I believe ran at 10 or 12mHz. Thankfully, Turbo C was a fast compiler. To give you an idea of what connectivity was like at the time, the campus mainframe had a 300-baud modem connection.

What is more incredible is what Khan has done since those early days. In the mid-nineties he founded Starfish Software, a pioneer in the wireless synchronization market. The company was later sold to Motorola. Shortly thereafter he founded LightSurf – the first company to integrate the camera and phone. The company was later sold to Verisign then Syniverse Technologies. In 2003 he founded Fullpower Technologies to focus on the convergence of life sciences, wireless technology, accelerometrics, nanotechnology and microelectromechanical systems. The company's MotionX Technology platform powers many end user solutions from the Nike+ GPS to the Jawbone Up band.

This is where the story converges with the theme of wearable tech and Wearable Tech Expo, at which Paul Gaudino of Adidas, Cary Bran of PLT Labs/Plantronics, and Dan Cui of Vuzix were also presenters. To check out the speaker lineup and get other details about the next Wearable Tech Expo, visit: www.wearabletechworld.com/conference/newyork-2014/

Speaking of personal technology, it was clear that Microsoft had a tough time during the holiday season. Wal-Mart alone sold 1.4 million tablets on Thanksgiving, which is exactly why Microsoft and its hardware retail partners and Intel desperately need a piece of the tablet pie.

The result? The companies finally put out an ad – really it's a Dell ad for the Venue 8 Pro – which is worth watching (http://tinyurl.com/mohoudz). It features a traveler on an airplane who has no space and is still able to work with his office apps and more.

But I have to wonder why Microsoft, now the proud owner of Skype – a consumer technology that could entice potential buyers – doesn't mention that fact in the ad somewhere. **IT**

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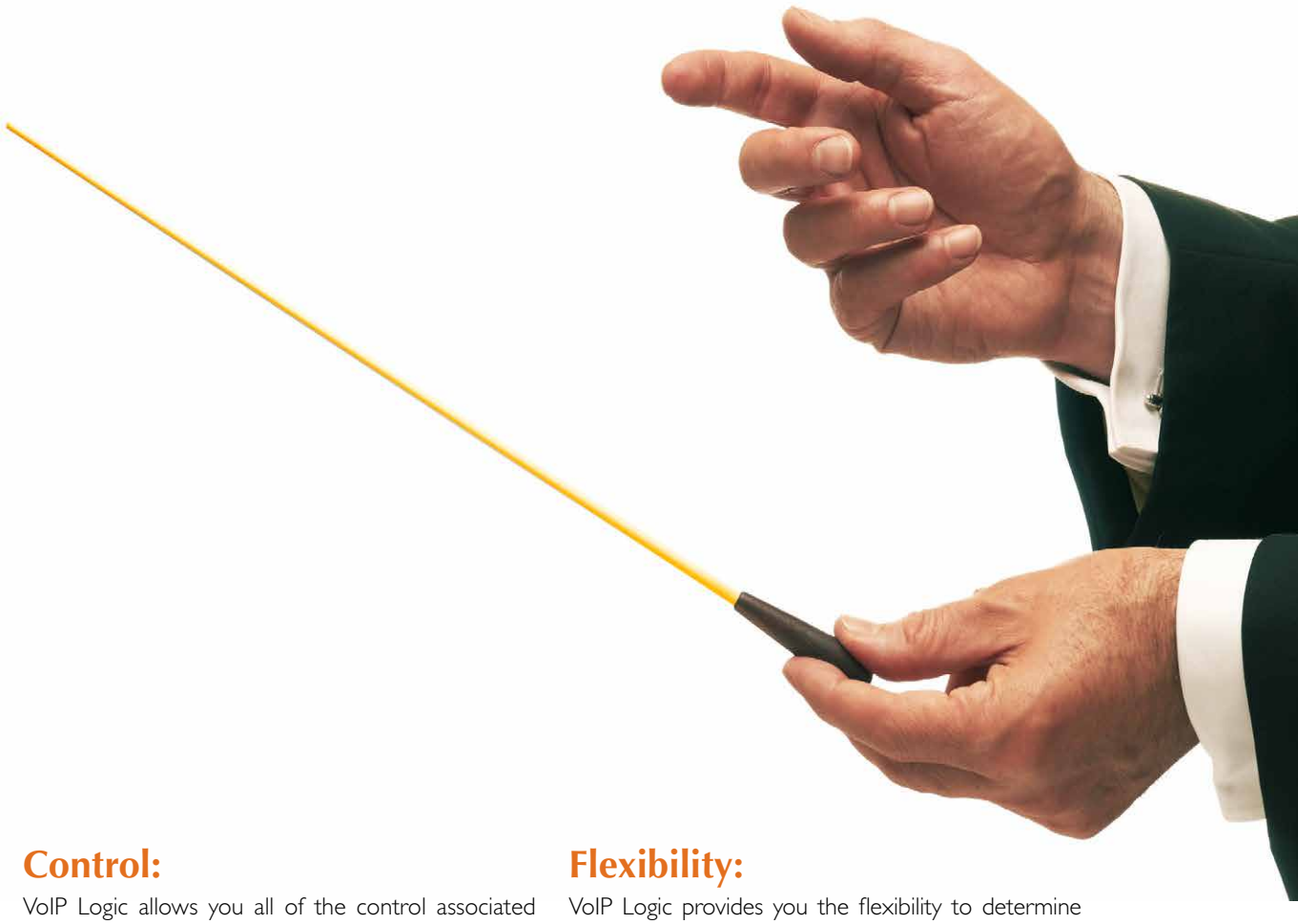

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By Jim Freeze

Customer Service Isn't Such a Sleigh Ride during the Holiday Season

This season won't be a winter wonderland for brands, as consumers are saying that good customer service is not a present they anticipate getting this year. And they're not really that sorry about their lack of holiday spirit about it either, as only one in five Americans feel bad about being rude to a customer service agent.

Their lack of sympathy for the stress of the customer service agent may be because they feel justified given their low expectations of holiday care.

According to a survey, commissioned by Aspect Software, of 2,500 Americans, of which 2,201 have contacted customer service:

- More than a third would rather eat last year's fruitcake than contact customer service during the holidays.
- Another 74 percent say it's more of a hassle to contact customer service during this time than any other time of the year.
- 91 percent believe customer service should be better prepared for the holidays, but only 36 percent have higher expectations of customer service during this time of year.

A lot of the consumers we surveyed are taking more control over their experience. Some of them are doing all they can to avoid customer service altogether, with nearly one in four of them saying they would rather give cash than deal with customer service during the holidays. This is an alarming number for retailers.

Many of the people we queried are planning on moving to different channels if they do contact brands during the season. While nearly half say phone is the best channel to contact customer service during the year, only 33 percent say the same of the holidays. This drop is due to more consumers saying chat, e-mail, text, social and in-person are the best channels during the holidays (67 percent) compared to year-round (52 percent).

Obviously consumers are looking for more from the companies they do business with and not only during the holidays, but throughout the year. IT

Jim Freeze is CMO at Aspect (www.aspect).

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It's no secret that conferencing has forever altered the way we communicate. It has changed the way we interact, collaborate, and perform tasks at work. It has helped friends and families separated by distance reconnect, regardless of time and place. The Projectphone series of conferencing units are now found in business environments in which conference calls and face-to-face interactions via video conferencing are the norm. With implementation, conferencing has changed greatly, companies now rely on the ability to see the faces of the other conferencing parties and in addition these participants can share various materials which encourage strong, sound, two way talks.

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By Hunter Newby

Finding Meaning in Broadband, Single's Day

Nov. 11, 2013, was Single's Day in China, and it has been proclaimed as the biggest success in online shopping in history.

"By 1:04pm sales on Alibaba, the nation's largest ecommerce group, reached $3.1 billion, equivalent to all it sold on last year's Single's Day and double what was sold last year on the U.S. Cyber Monday following Thanksgiving," wrote The Financial Times. "At midnight this figure had almost doubled to $5.7 billion."

There is something about being the biggest online selling day in history. More than $5 billion in sales in one day is amazing. All of this retail purchasing is happening as China steers its economy from one driven by investment to consumption, as the newspaper says, but is happening as a result of the investment that the country made in the network infrastructure to support it.

The Financial Times reported that rapid growth in China is catching up to slowing growth in the U.S. in terms of the online economy. China is now coming in a close second to U.S. e-commerce with numbers between $190 billion to $210 billion to the U.S. market of $220 billion to $230 billion, according to the report. The Chinese rapid growth was in part attributed to broadband Internet access percentages. As it was reported, currently only 31 percent of households in China have access to fixed broadband and only 21 percent have access to mobile broadband". That's according to Paul McKenzie, a financial analyst with CLSA. His assertion is that "China's ecommerce is growing because Internet access still has room to grow."

That is an interesting assumption. It would seem more logical that the e-commerce market is as big as it is because of what Internet access already exists, but that the prospects for growth are large because even at those low percentages they still have the sales volume that they do. So, one would have to assume that as more households come online, the sales volume will only increase from there. That is plausible for sure.

Given that, though, the U.S. has room to grow too since the percentage of people that have real broadband here is actually very low, probably less than China. Most people in the U.S. have slow speed Internet access that is only called broadband because the states have been paid, coerced, or both, into using that term to define dial-up, or 1-3mbps cable modem access to protect the interests of incumbents that want to maintain control.

Keep something in mind with these numbers though: 31 percent penetration in China represents in whole numbers the entire U.S. population ~300 million. Therefore, technically the Chinese are spending less per household than the U.S. So, if our broadband Internet access percentage is 30 percent we are putting out about the same sales volume annually, but with only 90 million people contributing.

An investment in neutral dark fiber throughout the U.S. will help speed the divorce process of the term broadband and its present definition, bring about increased Internet access speeds, and drive more online usage and sales. As a result the U.S. e-commerce economy and GDP will grow – because if it works for China it works for the U.S.

Keep something in mind with these numbers though: 31 percent penetration in China represents in whole numbers the entire U.S. population ~300 million.

Ironically, the name Single's Day in China is in reference to the date, 11.11, but given the ratio of men to women (120 to every 100 born, respectively) in China, maybe it will take on the meaning of single men. The population of China outnumbers the U.S. at a roughly 4 to 1 ratio (1.3 billion to 330 million, respectively). The Chinese population might not grow in a few more years if there are not enough women around, but the men will certainly have a healthy store of disposable income to spend online on Single's Day. IT

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

It's time to stop paying for onsite resources that you can no longer use efficiently. The adoption of cloud-based services is growing rapidly among businesses that want to reduce IT complexity, support a scalable infrastructure, and lower costs. Cloud-based services also provide many employee benefits, including improved productivity, mobility and collaboration.

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By Michael Stanford

Multified Communications

People like me who lament the evaporation of privacy in the face of the onslaught from Google, Facebook and of course the NSA are told to stop whining and get used to it.

Maybe it's time to start taking the same attitude to unified communications, or rather the lack thereof. Communications used to be unified, when there was only one way to do it: a phone call. The global telephone numbering system enabled anybody to call anybody else who had a phone number. Then we started e-mailing, texting, Skyping, liking, Instagramming, Tweeting and twerking. And since all that started, techies like me have been saying: "Let's pull all this stuff together into one tidy timeline on the client and a unified infrastructure."

But the opposite has been happening. I guess we have a unified client device, the smartphone, but on my smartphone I can get phone calls on my cellphone number via the phone's native client, from my SIP system via a Bria client app, from Skype and from Facetime – just for a start. I get textual communications by e-mail, texting, Facebook, various chats. With each innovation comes yet another fragmentation. In the real world, it looks as though users are comfortable with this. Sure it's sometimes a bit frustrating to hunt through two or three apps to discover what you said the last time you communicated with somebody (was it an e-mail or a text or a chat?), but how much are you going to pay to get all that in one user interface? And even if it's free, you probably won't take the trouble to download it.

So forget unified communications on the consumer side. And since BYOD is moving enterprise communications to consumer-style smartphones, forget unified communications there too.

There is, of course, one place where unified communications makes a lot of sense: in the call center, where all modes of communication should flow to the same pool of agents, and into the same customer timeline in the CRM database. But there seems to be no demand for this from call center operators, whose main motivation seems to be to discourage calls rather than to help the caller (cf, the 30-second exhortation to use the website that you must endure before you get routed to an agent).

So, suck it up. Get used to fragmented communications, because unification ain't happenin'. IT

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

By Max Schroeder

The More Things Change the More They Stay the Same

The past decade has dramatically changed the way we market products and services.

Internet and broadband access were limited or non-existent and the word search engine would have been mistaken for something used to find lost children in the forest. Despite all of the changes, the old French proverb that serves as the headline for this column still holds true for key elements of the sales process. Time management is essential for a successful sales program and carefully managing a company's resources (i.e. the budget) is critical. This means that although there are scores of options to generate leads, the sales team still has to close the deal, and the marketing budget must be administered carefully.

The management process is even more complex due to the myriad of choices. Should you have a Google AdWord campaign? Which social media may apply? Is a print or electronic medium the best fit, or so you want a combination of both mediums such as TMC offer? Is SEO important? Each of these choices has a price tag in dollars and time and must be administered carefully to achieve the maximum ROI.

Although suspects now visit websites indicating interest, they are still suspects until contacted and qualified as real prospects. Also, a lot of genuine prospects may be asleep at the wheel and require a sales professional to call and get them motivated. The very lucrative health care industry is a good example. Many medical professionals still expect phone calls and scheduled office visits to learn about new technological trends.

Another constant – profits still need to be made the old-fashioned way by earning them. Sales teams must be closely managed, and that takes time. A good cloud sales management or CRM solution makes the job much easier, but you need to implement it first. Meticulously review the leads and results to determine which of your marketing investments are generating the best ROI and re-allocate your resources accordingly. IT

Max Schroeder is vice president emeritus of FaxCore Inc. (www.faxcore.com) and co-chair of the SIP Forum Fax-over-IP Task Group (www.sipforum.org).

Industry Web Event

HOW YOU CAN BE READY

Key 2014 Contact Center Trends and Priorities

Tuesday, January 28th 2014, 11:30 AM EST / 16:30 GMT

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An extensive Q&A will follow the Web presentation, during which Schoeller and Staples will be joined by industry veterans McGee-Smith Analytics Founder Sheila McGee-Smith, and Vanguard Communications Founder & President Don Van Doren to answer live audience questions.

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By Jon Arnold

Amazon Mayday – What it Means for Your Contact Center

With today's technologies, customers are increasingly expecting a high level of personalized service, but most businesses simply don't have enough resources to properly support that. And just when you thought expectations were high enough already, along comes Amazon's Mayday button. The Mayday button allows customers to get a live connection to an agent for technical support in 15 seconds or less.

Nobody really likes calling for support, and more than anything else, customers want to get through this process in as little time as possible. Technology-based problems tend to cause a lot of anxiety, and the easiest way to dial this back is by answering their calls quickly. Since customers typically get put into a long queue with endless IVR prompts, by the time they get connected to a live agent, the stress of waiting can easily exacerbate the problem beyond its actual impact.

In this context, the Mayday button has obvious appeal. However, to clarify, it only applies to a fairly narrow problem set. The service is embedded with Amazon's new Kindle tablet, so it's hard-wired to be easy to use on that device – but nowhere else. They don't currently offer it for other products or lines of business, and Mayday is only for technical support – not just any request for customer service. As such, don't be misled to believe that Amazon now delivers customer service to any customer for any need within 15 seconds. Nobody can deliver that unless the objective is to build market share at all cost.

Amazon doesn't need to do that, but instead, the company recognizes the long-term business value of getting customers to use their branded tablet instead of those made by other vendors. It has learned from Apple and Samsung just how powerful endpoints can be in driving the demand for services and applications. As the book business continues migrating online, owning the customer at the endpoint level brings a lot of leverage for the long tail of Internet commerce that Amazon is so famous for pioneering.

While most businesses lack Amazon's scale and efficiencies for managing a gigantic customer base from the cloud, these underlying principles can still apply. You may not need to deliver service in 15 seconds, and with a little bit of research, you can easily determine the optimal waiting time that applies to your customers. Once you know that, the trick is figuring out how to deliver the right service once contact has been made.

This sounds simplistic, but actually requires a lot of different technologies working together in new ways. More specifically, I'm talking about integrating customer service operations with business processes. In UC circles, we refer to this as BPA or CEBP – business process automation, or communications-enabled business processes.

Whatever acronym you use, the main idea is that many of the answers you need for providing great service are already in your midst. However, most businesses tend to function as a collection of silos where information is not readily shared or leveraged to enhance overall performance. Amazon truly excels here, especially in making use of data analytics, so don't worry if you can't live up to that level.

> Don't be misled to believe that Amazon now delivers customer service to any customer for any need within 15 seconds.

You should look to Mayday as an example of how you can raise the bar for customer service in a sustainable way. Running out to copy Amazon with a 15-second response promise will almost certainly fail, but what you can do is review your internal capabilities and follow best practices for ways to integrate them in ways that serve the needs of your customers. You can't do this by keeping silos intact, so some cultural or political shifts might be necessary.

None of this will be easy, but it would be shortsighted to ignore Mayday because you don't think that type of service could be supported by your company. Instead, you should view Mayday as an example of what's possible when communications technology is tied to business processes in the name of customer satisfaction. It's no secret that companies delivering superior customer service outperform those with average service, and if nothing else, Mayday is a wakeup call to say that service can always be better, and with the right technology and vision, it can be delivered in a cost-effective manner. IT

Jon Arnold is principal of J Arnold & Associates, an independent telecom analyst and marketing consultancy.

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20 Notable Communications Infrastructure Products by CRN CRN

By Steven Johnson

What Is SIP Trunking?

SIP trunking is a term applied to the services offered by local exchange carriers, independent local exchange carriers, competitive local exchange carriers, and Internet telephony service providers to terminate VoIP calls to the public switched telephone network.

SIP trunking allows enterprises and small businesses to eliminate a PSTN gateway at their site and outsource that function to a carrier. It is typically a lower-cost alternative to primary rate interfaces because SIP trunks can be purchased in single-trunk increments (as compared to 23-channel increments for a PRI).

Other ways SIP trunks decrease costs:

- With SIP trunks, a single network can be maintained within the organization, rather than having both a voice and data network.
- Internet bandwidth can be used more efficiently.
- Moves, adds and changes can be completed without major wiring upgrades.
- Typical savings over PRIs range from 40 to 60 percent with the payback period for the equipment required, which may include an upgrade to the IP PBX and the installation of an enterprise session border controller, has been shown to range from 4 – 12 months.

SIP trunks are delivered in several ways. They can be delivered over the public Internet, which allows any enterprise, anywhere, to adopt SIP trunking and assign some (possibly unused) bandwidth to voice at no extra charge for the connection, and providing the highest ROI.

SIP trunks can also be delivered as a managed service. Carriers supply a dedicated, fully managed connection from their point of presence to the enterprise site. This service offers quality of service guarantees, but is somewhat more expensive.

Carriers can also deliver a managed service using multi-protocol label switching to insure the highest voice quality and reliability.

The voice quality, even over an un-managed public Internet connection, can be excellent. Digital packetization of voice has proven to be better than analog. This is because digital packets do not suffer from audio distortions, loss levels, and other weaknesses. The quality of voice is directly related to the quality of the network, with the "weak link" of VoIP being latency in a slow network. A SIP-capable E-SBC with QoS solves this problem.

With these facts in mind, there is no question that SIP trunking offers compelling advantages for businesses large and small. IT

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

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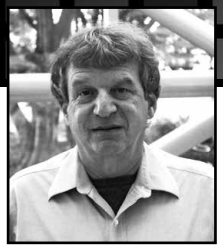


Talk of Telecom Rewrite Could Mean Deja Vu All Over Again

By Peter Bernstein

On Dec. 2, the U.S. House of Representatives, under the leadership of House Energy and Commerce Committee Chairman Fred Upton (R-MI) and Rep. Greg Walden (R-OR), the chairman of the subcommittee on Communications and Technology, announced their intent to begin re-writing the Communications Act.

They envision a multi-year effort that will start this year with a series of hearings and white papers.

I thought I might weigh in on the subject given personal experiences that those looking at the prospects of an overhaul may wish to consider. History here is important.

In 1975, following the U.S. Department of Justice's fourth anti-trust case against the old AT&T, under the leadership of then Chairman John deButts, AT&T fired back. At the company's behest, legislation was introduced in both houses of Congress under the title, The Consumer Communications Reform Act of 1975, (aka, The Bell Bill). While it never passed, it set off a debate that continues to this day, albeit with some minor modification reflective of the times in which we live.

To those of us who favored competition over regulation, the Van Deerlin efforts were pure genius. The goal was much the same as that articulated recently by new FCC Chairman Tom Wheeler in his first public speech about putting competition at the heart of a regulatory regime. The reason is because of its validity as the best means to promote innovation and consumer choice and access.

The FCC is an instrument of Congress. It takes its guidance in promulgating rules from Congressional intent and oversight. What this means in the context of the desperate need to re-write the Act is that Congress needs to give Wheeler and his fellow commissioners a clear indication of its intent.

Based on recent industry reports about the persistence of an impressive digital divide in this country that holds us back from competing with the rest of the world, and the fact that our average broadband speeds are fair at best compared to other developed countries, the lack of a national program with clear articulation of roles and responsibilities is, in a word, crazy. Any re-write, to my mind, should look at doing several things:

The lack of a national program with clear articulation of roles and responsibilities is, in a word, crazy.

The problem with the Bell Bill was that it had absolutely nothing to do with consumers or reform. Indeed, it was an attempt at legislative affirmation of a notion first put forth by deButts in September 1973, in a speech entitled "An Unusual Obligation" given to the National Association of Regulatory Utility Commissioners, that sought to codify the AT&T monopoly. It embodied what deButts had promised to NARUC – that the time had come to, "Take to the public the case for the common carrier principle and thereby implication to oppose competition, espouse monopoly."

As a young lobbyist, I was part (a very small one) of the effort that helped kill the Bell Bill. However, the genie was out of the bottle. The late Congressman Lionel Van Deerlin, (D-CA), and a former broadcaster, was stirred by the prospects of re-writing the Communications Act to be competition friendly and proposed what became known as an "attic to basement" re-write. You might wish to go back and read what was in the Van Deerlin legislation and sister bills in the Senate. They were radical for the time, including things like AT&T being forced to divest Western Electric and Bell Labs with equally disruptive changes proposed for the cable and broadcasting industries.

1) With the looming death of the public switched telephone network as we have known it, universal access to broadband (with set speeds and feeds by certain dates) is a must have.

2) The Commission could use additional instruction from the Congress on how spectrum allocations should be made, including how long licenses last, ownership restrictions, etc., so that innovation and competition are encouraged and the role of such spectrum in meeting national broadband access needs are delineated.

3) Congress has a role in setting policies, or at least providing guidance, on the issues of net neutrality, regulation of the Internet (regarding privacy, freedom of speech, and possible taxation) and those intentions need to be spelled out.

4) Competition, competition, competition as the guiding principle needs to permeate whatever is done, and should be the place where the preamble to a re-write begins and ends. IT

Peter Bernstein is a senior editor for TMCnet, the online entity of INTERNET TELEPHONY magazine's parent company, Technology Marketing Corp.

By Frank Yue

VoLTE - Delivering Reliable and Secure Mobile VoIP

Mobile service providers have been building and deploying 4G LTE networks at a rapid pace. Currently, there are more than 200 LTE networks worldwide, and the number continues to grow. Part of the LTE standard calls for a packet-based infrastructure using the IP protocol. Traditionally, mobile voice calls have been circuit switched. In the LTE architecture, it is expected for voice calls to be carried over the packet-based network. Despite all that, there are less than a handful of providers delivering voice over LTE services today.

Communications service providers have taken a conservative approach toward delivering advanced voice services in the new LTE networks. They are primarily deploying circuit-switched fallback technologies to maintain their existing voice services as they work to design a resilient infrastructure to support VoLTE calls. This gives the CSPs time to properly architect and deploy the IP multimedia subsystem, which unifies and manages the delivery of multimedia content through the LTE network including voice services.

Reliability and Scalability

The IMS infrastructure depends on two key signaling protocols, Diameter and SIP, to connect and deliver multimedia content. In the IP network, the number of messages generated by these protocols is much larger than the earlier circuit-switched networks. A reliable and scalable network is needed to effectively process Diameter and SIP messages, which are essential for VoLTE and other multimedia services. Traditional data center technologies and architectures need to be implemented within the IMS network. Load balancing, global availability through intelligent DNS, and service virtualization via SDN and NFV are all components key to a robust IMS network.

The network also needs to deliver the voice communications between the two or more peers. This real-time content needs to be delivered with the appropriate latency and QoS expectations subscribers have experienced with traditional circuit-switched voice calls. The SGi portion of the LTE network must have the ability to manage the data and apply performance-based policies such as QoS marking. This needs to be based on the requirements of the application and subscribers associated with the session.

Security

Security becomes a critical concern in the IMS designs because of the all-IP nature of LTE networks. CSPs need to be concerned with the vulnerable nature of IP networks. The CSP is expected to deliver reliable voice services to customers. There is a potential for services to be affected by a DDoS attack since third-party applications can generate signaling messages in the IMS network. By overwhelming IMS services, a DDoS attack can disable the ability to connect VoLTE calls along with other multimedia services. The attack can be malicious in nature or the side effect of poorly written applications.

Diameter and SIP signaling message validation is necessary at key points in the network to protect against these attacks.

Another security threat is the potential for a malicious entity to access sensitive content. Subscriber profiles including contact and billing information may be available from the HSS and PCRF with a properly formatted request. With the introduction of the IMS component of LTE networks and SIP messaging, it is now possible for a third-party application on a subscriber-controlled device, such as a mobile smartphone, to directly generate SIP messages that propagate through the IMS network. This is a new concern for the control plane portion of the mobile network, which has traditionally been private. Proper security services will need to be deployed at key entry points in this new network architecture to screen messages and validate their content.

> The promise of LTE is an intelligent subscriber-aware and policy-aware network that delivers services in a consistent manner. VoLTE is the enablement of that vision for voice services.

Reward at the end

As one can see with the discussed issues, it is easy to understand why the CSPs are taking their time to migrate to VoLTE. Eventually, all LTE networks will utilize VoLTE services because it makes sense. Circuit switching equipment can be eliminated. The entire mobile network will be packet-based IP. This means there will be a common unified architecture for CSPs to manage and maintain. The promise of LTE is an intelligent subscriber-aware and policy-aware network that delivers services in a consistent manner. VoLTE is the enablement of that vision for voice services. IT

Frank Yue is technical marketing manager with F5 Networks (www.f5networks.com).

By Ken Osowski

The Business Case for NFV-based Network Intelligence

The computer industry has offered the capability to concurrently run multiple operating systems on one physical CPU complex in a virtual machine environment for decades. So what is different about network functions cirtualization, simply referred to as NFV?

For starters it provides a standards-based model for virtualizing the vast array of network element functions that exist in IT and service provider networks today. Both private and public network operators are behind this movement and see it as a way to simplify the management of their networks. What they are facing today is the challenge of configuring and provisioning many different devices such as routers, firewalls, security gateways, DPI platforms, policy platforms, and packet gateways, just to name a few. All of these NEs need to operate in concert to ensure data networks are running smoothly.

So it is easy to understand why network operators want NFV. But will it be easy for vendors that supply these NEs to fit into this model? Vendor products that operate in the network application domain such as application servers and policy platforms will be able to quickly adapt since these "network applications" are running in the user memory address space of off-the-shelf Unix operating systems. These products can be readily virtualized without significant re-engineering.

Products that are more closely tied to the data plane are where things get a bit more difficult.

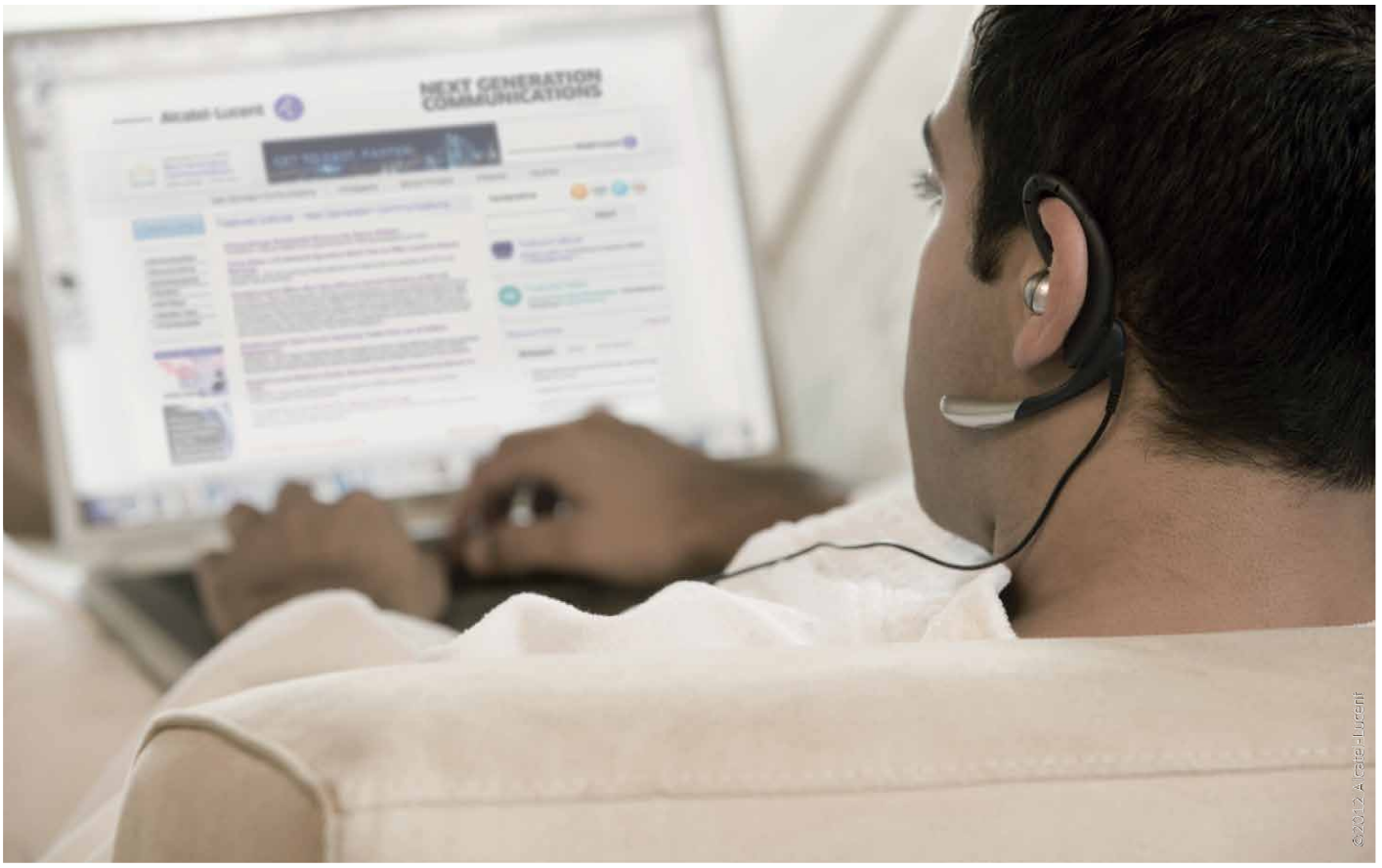
Other products that are more closely tied to the data plane are where things get a bit more difficult. With products such as routers, security gateways and DPI engines running at wire speeds, virtualizing this functionality can present challenges since latency has to be kept at a minimum to keep data flowing at designated, higher-speed bandwidths. The challenge for vendors of these products is that they have traditionally used specialized hardware and software to perform network functions at wire speeds. So NFV adoption among this class of NE product vendors will vary depending on whether or not their dependency on specialized hardware can be engineered out of their products and how long it will take to do this.

There is no doubt that NFV matters, and in the case of DPI/policy platforms specifically and the gathering of network intelligence it matters a great deal. Network intelligence goes beyond traditional DPI statistics capabilities by deriving in real time a subscriber-centric profile of network usage in the context of the subscriber's device in use, location, application in use, content category accessed, bandwidth speed, and data volumes consumed. If network intelligence can be gathered in any part of the network because it is virtualized, then service providers can gather network intelligence that is specific to that part of the network, giving them a much higher resolution view of traffic as it transits various parts of their access and core network infrastructure. All of this can be fed in real time to SDN components using data collector APIs. This closed loop model leads to better actions on the part of SDN components. From a qualitative analytics viewpoint, all of the network intelligence gathered in network-distributed, virtualized NEs gives service providers more granular network intelligence to make better business decisions.

The core economic benefit to service providers of this approach to gathering network intelligence is that product licensing schemes implemented by vendors can be much more flexible and therefore more cost effective to deploy. Since legacy NEs ran on specific hardware, vendors had to tie licensing of their products to specific devices. With NFV-based products, product licenses can be activated as needed and even more importantly not be tied to a physical device's MAC address. This mitigates the inherent inaccuracies in capacity planning that can result from estimating DPI resources ahead of time for each platform and then potentially not using these resources because they are not positioned for use in the right part of the service provider's network.

Not only does this directly translate to significant network cost savings, it also accelerates time-to-market for new policy-based services. Intelligent policy enforcement capabilities that may be offered as part of a DPI/policy platform can be readily provisioned in markets where it is needed to either conduct trials or deploy region-specific services. The market for broadband network services is constantly changing and support for more flexible deployment of DPI and policy resources can be a huge benefit to service providers. It is not a question of whether or not virtualized DPI/policy functions will benefit service providers; it is a question of how quickly can the vendor community meet the demand. IT

Ken Osowski is director of solutions marketing at Procera Networks (www.proceranetworks.com).



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AT THE SPEED OF IDEAS™

By Paula Bernier

PanTerra Networks Leads the Next Wave of Unified Cloud Services

The rise of the cloud has been exciting and beneficial so far, but the next wave of cloud promises to bring even greater benefits to businesses, says Arthur Chang, president and CEO of PanTerra Networks.

Cloud services are taking a somewhat similar track as desktop productivity software did years ago, says Chang. As you may recall, with desktop software, first we saw a lot of separate, specialized solutions from various vendors, such as WordPerfect and the Lotus 1-2-3 spreadsheet. Then, a certain software company came along and introduced Microsoft Office; that integrated many of those applications, which had previously been sold as separate solutions, into a seamless suite.

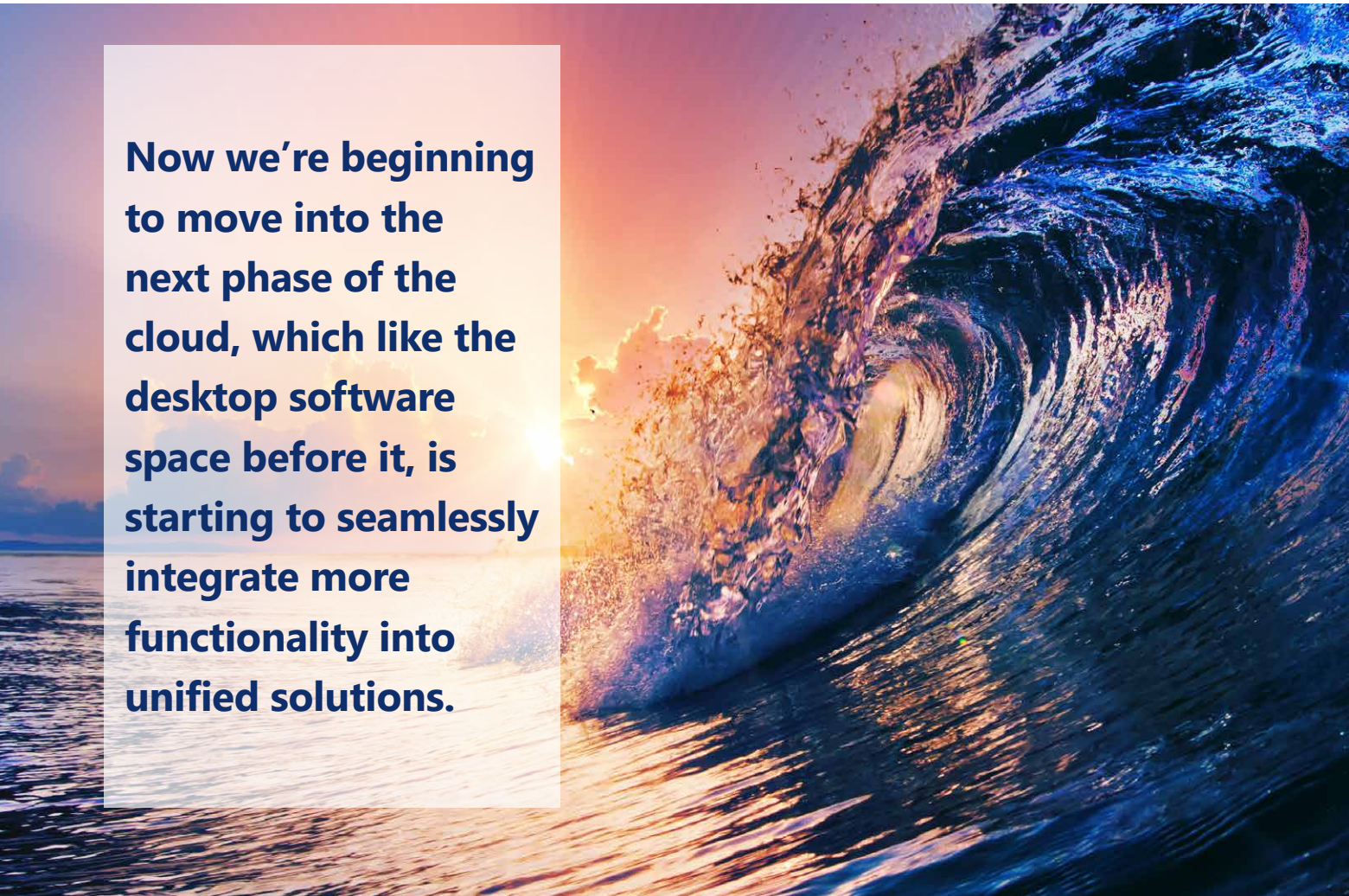
Likewise, most cloud service providers started out delivering single services, Chang says, who notes that's common for emerging markets. But now we're beginning to move into the next phase of the cloud, which like the desktop software space before it, is starting to seamlessly integrate more functionality into unified solutions.

Cloud 2.0 and unified cloud services, are the terms Chang uses to describe this second iteration of the cloud.

"I think you're seeing the beginning of this Cloud 2.0 evolution occurring now," says Chang.

Bringing together multiple services into integrated solutions benefits end users because it translates into lower total cost of ownership, and can allow for a higher level of productivity, says Chang. It also enables service providers to deliver consistent service attributes like quality of service, support, and security across a gamut of applications – such as communications, collaboration, file sharing and storage – being delivered to end users, he says.

Now we're beginning to move into the next phase of the cloud, which like the desktop software space before it, is starting to seamlessly integrate more functionality into unified solutions.



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Users pay overhead every time they implement a service with a separate cloud service provider, he explains, so when they use three separate services from three different cloud service providers, they pay that overhead three times. If a customer was moving its file server, communications, and collaboration into the cloud, to do so separately might cost $15 to $20 per month, $40 per month, and $50 per month, respectively, he says. Unified cloud services, Chang says, typically cost 60 to 70 percent less.

PanTerra is already bringing such savings, productivity and quality gains to mid-market enterprise customers via its WorldSmart services.

"We are one of the leading innovators of delivering unified cloud services," says Chang. "That's been our vision from day one. We do that by being both a technology provider and a service provider, which allows us to innovate and bring that innovation to our customers with very high service attributes."

PanTerra designed its platform to be multiservice, highly scaleable, and carrier agnostic. This platform also adds value for PanTerra and its customers because it gives them a higher level of control.

In referring to PanTerra as a platform provider, Chang is pointing out that the company built the platform on which its service runs in-house and from the ground up. That is a key differentiator for PanTerra vs. the competition, which typically relies on the platforms of companies like Cisco and Microsoft, he says. PanTerra designed its platform to be multiservice, highly scaleable, and carrier agnostic. This platform also adds value for PanTerra and its customers because it gives them a higher level of control.

"That has resonated with our customers and is an advantage for them," says Chang. "When you are in control of your own technology you can deliver much more consistent reliability, QoS, etc. When you resell other peoples' technology, there are bound to be issues with bugs, new revisions, etc., and when these things happen, the most you can do is file a trouble ticket. If it's your own technology, however, you can contact engineers and developers and can respond more quickly. Our way keeps that supply chain as short as possible."

WorldSmart is a proven solution, as thousands of companies are already benefitting from its virtual PBX, which includes find me/follow me capabilities; full call center functionality, including features such as supervisory mode and customer call back; a unified messaging suite, which addresses digital fax, e-mail, and secure IM; and collaboration services like HD-quality audio, shared desktop, videoconferencing, and web meeting. All of the above can be accessed from any browser via any IP connection anywhere in the world.

While WorldSmart is already a very feature-rich solution, PanTerra continues to build onto its functionality.

For example, in December PanTerra announced the release of new administration tools that improve WorldSmart's scale and security. This new addition simplifies management functions by adding the ability to define administrative roles and privileges and to configure centralized management, distributed management or a hybrid of both. That allows enterprises to tailor the solution to their existing IT infrastructure.

"PanTerra's Admin 5.0 cut our administrative overhead considerably on our most recent multi-location customer migration off of legacy equipment," says Bill Sutherland, president and CEO of Sutherland Networks. "The marriage of secure unified administrative access for all WorldSmart services, and more specifically the improved group and mobile administration and intuitive import function, reduced many man-hours off the system cutover."

And in November, PanTerra came out with Mobile UCC, which extends its unified cloud communications capabilities to mobile users of Android and iOS devices using 3G, 4G and Wi-Fi networks. Mobile UCC employs full multi-phase authentication and encryption for security, and push technology to reduce battery drain. Mobile UCC is available as a free download to all WorldSmart seats with desktop UCC functionality.

"Mobile UCC has been an invaluable tool for me over the last few months while both on the road and after business hours to remain connected to my co-workers and customers," says Chris Hewitt, vice president of sales for Exemplify, a PanTerra master agent. "All my business and phone contacts are integrated so I can conduct communications with colleagues and customers from a single secure app. And the support for calling over Wi-Fi has saved my cell minutes."

Chang says to expect PanTerra to offer additional new WorldSmart-related products and functionality in the near future.

"We have built a very solid base on our UC service, and we see that unifying the ability to share content, to store content, and to sync content is a natural progression to help enterprises achieve maximum productivity, minimize cost, and reduce sales friction which prevents their customers from closing a deal." IT

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By Graham Williams

Making the Move to SIP Telephony

The days of using plain old telephone service (POTS) in business communications are fading fast. Increasingly, SMBs are turning to SIP (Session Initiation Protocol) telephony to cut costs, simplify administration, unify communications and accommodate a more mobile workforce. If you've been considering the switch, there are plenty of reasons why now is a good time.

Widespread acceptance and adoption

Not that long ago, SIP was considered a new technology fraught with interoperability and functionality issues. The tide has turned though. According to a survey by Eastern Management Group, SIP is so pervasive today that when a business acquires a new telephone system, it typically supports SIP. IT managers say that interoperability challenges are practically nonexistent and that 99.9% of the time it just works.

Cost savings

The cost (and hassle) of managing a phone system and separate service provider, especially across multiple locations, shouldn't be underestimated. There are individual billing and infrastructure/operational costs to oversee for each office. If those offices happen to be in different states or countries, the costs can really compound. With SIP, calls are made over an IP connection and are therefore significantly cheaper.

There's also the cost of the equipment to consider. On-premise systems have their benefits, but it's worth considering a hosted solution when budget is a primary factor. By outsourcing the infrastructure, businesses save on equipment, maintenance and management. As your business grows, there's no need to ante up for additional hardware either. Instead, you can simply have your service provider add more lines.

Anywhere-access, any time

Industry surveys report that three in five SMBs now have employees who work outside the office. They also suggest that, as a result, those businesses are more likely to see revenues rise—compared to the companies with employees working in the confines of an office. As the teleworking trend continues to gain ground, SIP becomes a more attractive option.

Add the need to connect branch sites and remote offices, and the case for SIP is even stronger. For businesses with multiple locations, SIP can make staying in touch a whole lot easier. Employees can reach each other by dialing extensions, even if they're oceans apart. There's no need to remember phone numbers or incur long-distance usage charges.

The buzz around the Cloud

It seems like everyone and everything is moving to the Cloud these days. Indeed, a 2012 Microsoft survey of more than 13,000 SMBs worldwide showed that the number of the world's smallest companies using at least one paid Cloud service would triple in the next three years. Additionally, a survey by the Cisco Internet Business Solutions Group reported that the SMB Cloud services U.S. market size is estimated to grow to $51 billion by 2015.

As Cloud communications become practically mainstream, they're making more sense for SMB telephony. Small businesses can take advantage of enterprise-level features hosted in the Cloud without the cost, expertise or headaches associated with managing the equipment in-house.

Hardware: what to consider

With all of these factors coalescing, there's an increasing demand for compatible hardware—in this case, the SIP endpoint or phone. As the world's leading manufacturer of corded and cordless phones, SIP endpoints are in VTech's sweet spot. They're the newest addition to our portfolio of SMB solutions, and they offer key features that will benefit any business wanting to unify its communications, including:

- Compatibility with leading, hosted and open-source PBX platforms
- Feature-rich desksets and cordless options
- Dual Ethernet ports and support for Power over Ethernet (PoE), which cut down on wiring and cabling costs
- Auto-provisioning for easy, cost-effective installation across locations
- Support for up to five SIP service accounts
- Large backlit displays, simple navigation pads for scrolling through menus, programmable feature keys and easy-to-read buttons that make the phones easy to learn and use
- Shared call appearances (SCA), which display incoming calls on multiple phones, simultaneously
- Busy lamp fields (BLF) that let you see the status of other extensions in your office—even at remote locations
- Life-like sound quality with HD Audio and G.722 wideband codec support
- Standard, two-year warranties

Of course, the extent of your system's call handling capabilities will depend on your SIP service provider and phone system platform.

Whether you've outgrown your traditional analog or digital phone system or are starting from scratch, SIP telephony is a great way to contain costs, improve collaboration and leverage your existing technology. IT

Graham Williams is Vice President of SMB Sales for VTech (smbphones.vtech.com). He has worked in the technology sector for 19 years, including nine years in the telephony/unified communications space. His resume comprises significant experience managing channel partners, enterprise partners, service providers (e.g., Verizon) and global alliance partners (e.g., IBM).

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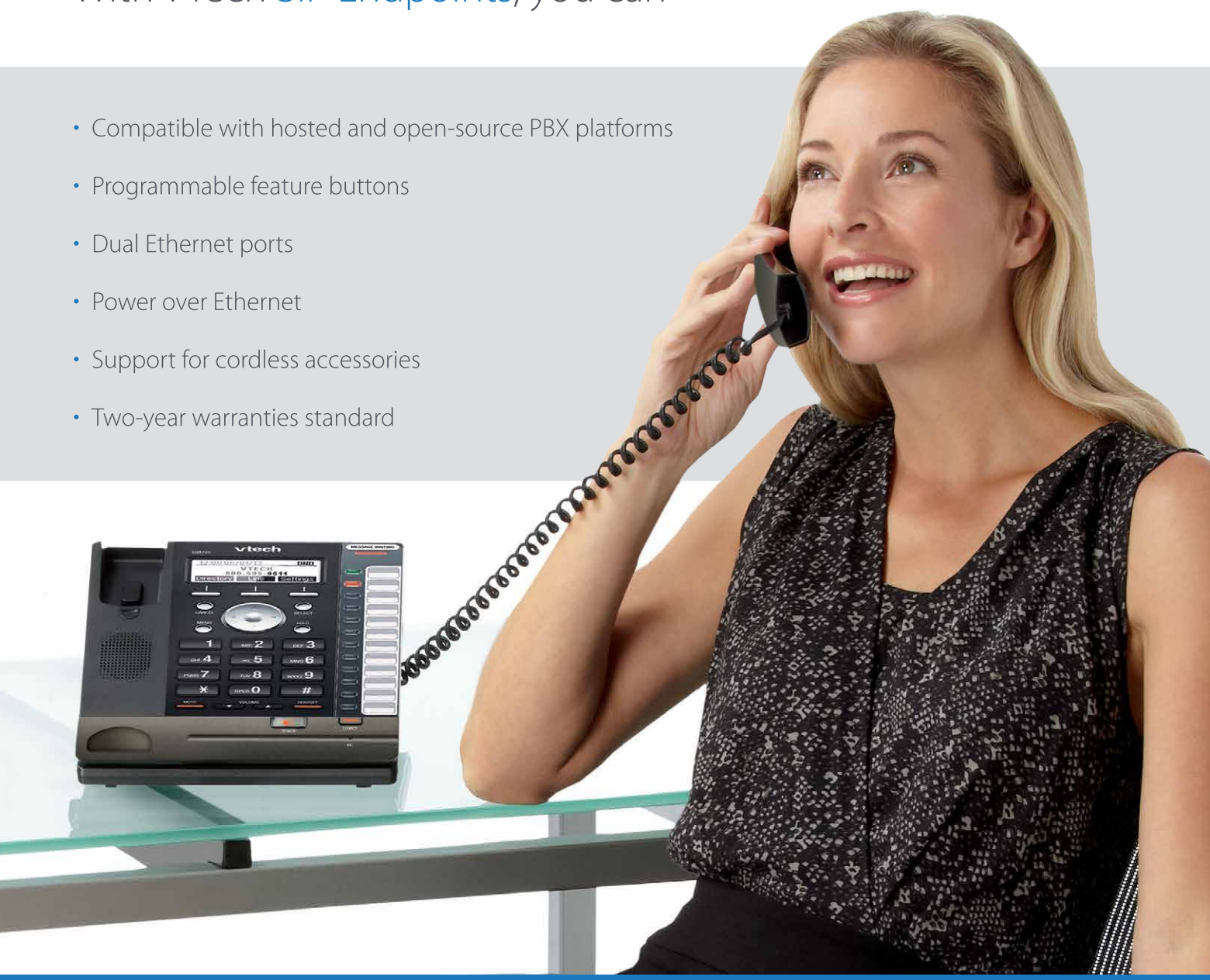

smbphones.vtech.com

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By Peter Radizeski

The Money in the Cloud

Where is the money in the cloud? Most of it is in SaaS – the actual applications that people use and buy.

IaaS, PaaS, VPS and other forms of virtualization or cloud computing are growing, especially as more companies do hardware refresh – or look for ways to cut IT costs, including labor. Saleforce, Google Apps, Hosted Exchange + Sharepoint, Zoho, Zimbra and thousands of other apps are being purchased. Are you getting your share?

Cloud services brokers are set up to be a SaaS application store for businesses. I have no idea what the commission structures are for the sub-agents, but that's okay. The channel partners have to realize that the key to a monthly recurring commission is that it starts small and grows. You take a contract for hosted e-mail here, backup there, CRM over there, while still selling T1s, Ethernet, VoIP, what-have-you.

Every sale does two things: builds up your monthly recurring income and gets you a bigger share of the customer's spend. The way to be essential is to sell the customer as many services as possible – security, managed services, hardware, software, backup, disaster recovery. Maybe not all at once, but these additional services or add-ons can be ways to follow up with the customer and stay relevant after the initial sale.

The follow up could be something as simple as: "Mr. Customer, your Internet service provider has just added a cloud backup service. It turns out that other businesses like yours are using a backup service to securely store or backup their customer records off-site inexpensively in the off chance that disaster strikes. Would you be available next week to discuss it? We can also do a first bill review at that time."

Add value, provide use cases, make it granular, and you become sticky. Salespeople today have to provide value beyond the services they sell. One way to provide that value is to let your customers know how other similar businesses handle similar problems. IT

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

Mobile Messaging Outfit Launches Program

HeyWire Business, which already has partners serving 20 million employees, has announced a channel partner program open to business communications, VoIP services and call center/user experience management providers. Meredith Flynn-Ripley, co-founder and CEO of HeyWire Business, said: "With the launch of our Channel Partner Program, we now offer third party service providers the ability to embrace mobility by easily integrating our mobile-first messaging platform with their existing technology offerings."

Research Firm Predicts Telecom Channel Conflict Ahead

Ovum says it expects conflict between the wholesale and enterprise telecom channels to heat up in 2014. The research firm urges wholesalers to differentiate from or partner with new entrants in an effort to minimize internal channel conflicts and become more responsive to customers. David James, principal analyst of wholesale telecoms for Ovum, said: "Despite its reputation for being rather traditional, unexciting, and averse to change, the wholesale telecoms market continues to evolve to meet the rapidly changing demands of retail service providers and other intermediaries. Since the turn of the millennium wholesale has transformed from a sleepy backwater that few discussed into a valuable source of revenue for many telcos. To remain effective, wholesalers must continue to respond to new developments."

Research Quantifies Channel Incentive Effectiveness

Channel incentives work, but more targeted efforts on this front would be more effective, according to Maritz Motivation Solutions, which surveyed more than 1,000 sales professionals from a variety of industries on this topic. The study revealed that 70 percent of participants are offered two or more incentive programs from manufacturers, channel loyalty partners and employers, and nearly one out of every four respondents had the opportunity to participate in six or more manufacturer-sponsored programs. "For manufacturers aiming to 'get things done' in the channel, it's never been more difficult to get salespeople's attention," said Mike Spellecy, vice president of solutions thought leadership at Maritz Motivation Solutions. "With that said, our research resoundingly confirms that channel rep incentive programs are effective. In fact, more than 75 percent of managers, owners and sales representatives reported that manufacturer-sponsored reward and incentive programs had a high influence on their willingness, interest and energy to sell that manufacturer's products and services."

Advanticom Selected as Sangoma Master Reseller

Sangoma Technologies Corp. has selected Advanticom as a Sangoma Master Reseller. As part of this designation, Advanticom will standardize its Lync and Office 365 deployments with Sangoma's NetBorder Lync Express appliance. Brian Conboy, Advanticom's president and chairman, said: "The combination of a complete Microsoft Lync server environment with an SBC, gateway, active directory, MS Office and Lync in a single appliance, plus the ability to leverage existing Office 365 subscriptions, delivers a powerful solution in an easy-to-install, all-in-one package. We expect that the NetBorder Lync Express will enable us to implement a complete Lync or Office 365 deployment in less than half the time than using the traditional multi-server model."

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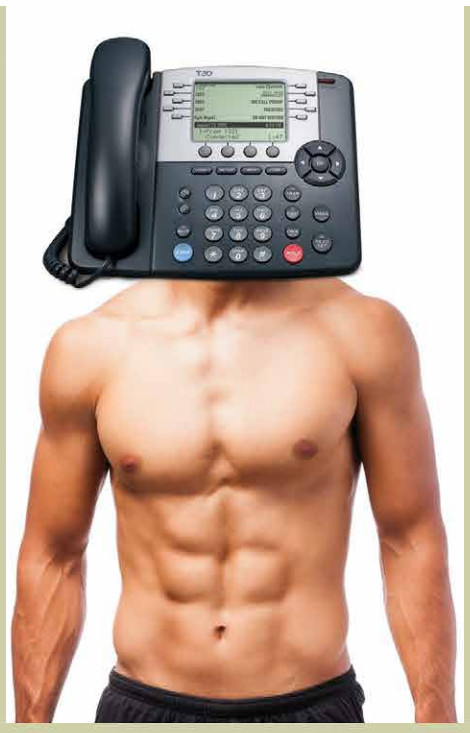

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By Paula Bernier

Blazing a Trail on the Software Telco Frontier

ILEC Saddles Up for What's Next in Communications

There's a lot of talk about business and network transformation these days in the telecom world, but often there's a lot more talk than action. That's not the case at Saddleback Communications.

The independent telephone company has replaced all its DMS legacy phone switches with Metaswitch softswitches; has a profitable new wholesale business; and is building a Calix-powered fiber-to-the-home network.

Saddleback, which is owned by the Salt River Pima-Maricopa Indian Community, offers both business and residential services. Its 55-square-mile coverage area includes a mix of tribal residences in a very rural area, and some very valuable commercial real estate with Scottsdale, Ariz., addresses, notes Saddleback President Bill Bryant.

Res on the Res

The company has 1,800 residential customers, 150 of which are now served by the FTTH network. Today FTTH options from the company include 15mbps and 25mbps packages. Saddleback's plans are to deliver FTTH-enabled 100mbps at some point in the future. It will continue building out its FTTH network neighborhood-by-neighborhood and on demand. Those broadband customers not reached by FTTH today are served via DSL. Saddleback notes that its average residential broadband, at about 8mbps, is higher than the industry average.

Saddleback provides residential phone service as well.

The Business End of the Territory

There are 375 businesses in Saddleback's coverage area, which is underpinned by 238 fiber miles.

Saddleback's business services portfolio includes telephone services, including hosted IP PBX; a variety of broadband and carrier access offerings, including dedicated lines, DSL, and Ethernet and IP-based services; conferencing; and secure collocation, business continuity, and disaster recovery options. It also works with cellular service providers in the area, offering backhaul, space on its towers, and professional services.

It's these business services, and the wholesale services offered by Saddleback subsidiary Re-invent Telecom, that have enabled the organization to rely less on rural telco government subsidies and more on its own revenues. In May 2005, more than half of Saddleback's revenues were subsidy-related, says Bryant, and today that's down to just 25 percent.

Re-invention

Re-invent Telecom, which offers wholesale services to resellers across the country, opened for business in October of 2010. The Saddleback subsidiary is a wholesale VoIP provider that sells white-label hosted VoIP PBX, SIP trunking, IP addressing, and, in some cases, private-label billing.

Traditional interconnects represent the bulk of Re-invent's customers. Now serving about 10,000 seats, Re-invent became profitable in fiscal year 2012 and remains profitable today.

There are several companies out there today trying to do hosted VoIP, and it's a pretty fragmented market, which is an opportunity for Re-invent, says Steve Obee, director of sales and service. That's because the company has both IT and telecom expertise, he said, noting that dealing with LIDB, number porting, and 911 is no easy task.

Before Saddleback created Re-invent it was dabbling in wholesale, explained Obee, but then Saddleback management sat down and decided to get more strategic about developing new sources of revenue. Bryant says they made that decision before the September 2008 economic meltdown, as there were some signs at the time that the general economy might be heading into trouble, and Saddleback knew it didn't want to rely so heavily on subsidies.

Getting on a path to rely less on subsidies was important, says Bryant, given FCC reforms to communications will mean a reduction in rural telco subsidies. That's not to mention that cablecos now compete with rurals for phone business, and that wireless replacement is impacting ILECs.

The Next-Gen Network

The fact that Saddleback could leverage its existing assets, including the Metaswitch softswitches, at its two central offices on the reservation to serve these new customers was a big added bonus.

Before Bryant joined Saddleback, the company had outsourced the management of its switches to a third-party company. But when Bryant came aboard, he decided to bring the switch management back in house, and to decommission Saddleback's outdated Nortel TDM switches and move to softswitching.

Jose Crespo, the CO and OSP manager at Re-invent and Saddleback, explains that moving to the softswitches has freed up a lot of space in the company's central office and, more importantly, has cut the company's equipment power demands in half.

But Saddleback's strategy to adopt new technology is not just about immediate cost savings, it's part of a larger, long-term strategy.

Moving completely off the old iron and developing core competencies around softswitching represents the first several steps toward becoming a software telco, Bryant says. Ultimately, where everything is going, is to an environment that relies completely on cloud-based switching and open source software for the development of new products and features, he says.

The next step for Saddleback and Re-invent, he says, is probably going to be housing its softswitches somewhere in the cloud. He adds that means Saddleback technicians need to get trained on how to spin up a service on AWS, and learn how to maintain and manage services up in the cloud. IT

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By Paula Bernier

SBCs Answer the Call

Solutions Adapt to Address New Form Factors, Technologies, Applications

The session border controller is a network element that always seems to be in the thick of things. And it appears that it will maintain that position as the communications industry moves forward with important new technologies including network functions virtualization, software-defined networking, and WebRTC.

SBCs gained prominence as appliances providing security at service provider-to-service provider interconnection points, an important application for which these solutions are still used today. But in recent years several vendors have come out with software-only SBCs as an alternative to those specialized hardware/software solutions, and the applications for SBCs have expanded to address a wider variety of requirements in both enterprise and service provider networks.

The Move to Software, Virtualization & Standardization

Traditionally service providers have scaled their networks by adding more boxes, but now network traffic is more dynamic and unpredictable, so network operators want to scale on demand, says Ashish Jain, director of solutions marketing at GENBAND. Software, SDN and virtualization allow for that, adds Jain, whether we're talking about SBCs or any other network functionality.

Sangoma, a pioneer in the software-based SBC, sees software as step one in the move to transforming the network to meet next generation requirements. Nenad Corbic, vice president of engineering at Sangoma, says step two is virtualization and having software containers you can push to Amazon and other clouds, said Corbic, adding Sangoma's software works with Citrix XenServer, Microsoft Hyper-V, Oracle VM VirtualBox, and VMware, and that Sangoma is looking to do a push to Amazon service as well so users don't need to build their own virtual containers. The third step, says Corbic, is NFV, which is a standardized version of this concept.

Many of the SBC vendors, most of which started out as appliance specialists, are now moving in this direction and already added software-only session border controllers to their portfolios.

Sonus Networks in October introduced the Sonus SBC SWe, which is the software-only equivalent of the company's hardware-based SBC 5000 Series. David Tipping, vice president and general manager of the SBC business unit at Sonus, says that customers are looking for solutions that include SBCs but some might not want to include hardware used in SBCs. Some want to use ACTA platforms, he says; others want use Sonus software to test market new offerings in out-of-region markets.

Alan Percy, director of marketing development for AudioCodes, which also offers SBCs in both appliance and software-only formats, says there are certain applications for which each type of SBC is a good match. SBC appliances are a good match for applications involving deep packet inspection and transcoding, he says, because those functions are most efficiently done by DSP chipsets, which are within the appliances. Pure software SBCs running on commercial-off-the-shelf hardware or a virtualized servers work well for SIP trunking applications for which the G.711 codec in use all the way to the customer site. In this case, he explains, the SBC is handling security and probably some kind of interoperability SIP header manipulation, call access control, registration management, and the like.

"So it's up a layer," says Percy.

Oracle, which early last year bought SBC pioneer Acme Packet, has had a software-based SBC for year or more, says Jonathan Zarkower, who's in product marketing for session delivery infrastructure at the Oracle Communications Global Business Unit. In addition to the appliance, server, and virtual machine SBCs it offers today, Oracle is working on a network functions virtualization solution, says Zarkower. The NFV product is in trials but that the commercial introduction of it is far down the road. This new NFV effort relates to core IMS products and controls, he says, and also ties into the concept of software-defined networking. Oracle already has an SDN product on the market, he adds.

Zarkower goes on to say that there's an ongoing discussion in the industry about the idea of decomposing SBCs. Some vendors have made arguments that media (transcoding, etc.) and signaling functions could, and maybe should, be in two different elements, he explains. Some argue that signaling is growing at a much higher rate than media, he continues, indicating he's skeptical about that claim. In any case, as NFV and SDN become more mature, customers say, they want to decompose the two above-noted functions of SBCs, adds Zarkower. But he says that idea is not yet ready for prime time because it's too complex given the antiquated protocol H.248 is still being used as a way to integrate traffic.

What's Next with WebRTC

WebRTC is another important new development on the communications frontier in which SBCs – or, at least, SBC suppliers – are positioned to play a part.

"Right now this whole SBC market is really excited about WebRTC," says Steven Johnson, president of Ingate, which sells E-SBCs, among other solutions.

Oracle this fall introduced a WebRTC session controller. Chris King, senior director of product marketing-communications industry at Oracle, says this new solution brings together Oracle's SDP technology with Acme Packet technology. It allows service providers to support multiparty calls, and maintains session state, so if a connection drops it doesn't affect the other connections. Oracle is targeting its WebRTC Session Controller both at service providers and an enterprises, at which WebRTC can be used to extend the unified communications experience within the contact center (WebRTC can allow for the escalation of a call from one medium to another, and to have the caller's interaction up to that time captured and displayed in the process) or just by regular enterprise users.

Meanwhile, GENBAND offers a WebRTC module, which is software that can be deployed with its SBC.

And a variety of other E-SBC and service provider SBC vendors, including Ingate and Sangoma, plan to introduce WebRTC solutions this year. Others have it on their product roadmaps, but are not offering guidance on commercial release dates.

Ingate is in development on what Johnson describes as WebRTC PBX companion products that will allow companies to add WebRTC to existing SIP PBX environments. He adds that putting a TURN server on the device enables enterprises to control and see all packets coming in to the SBC so they can ensure WebRTC applications get the required bandwidth. Service providers also can use this kind of device to stay in the call flow for WebRTC sessions, so they can generate revenue from those sessions, he says.

"WebRTC makes it much easier to do ad hoc collaboration sessions," adds Johnson. "It makes possible the whole theory and promise of unified communications in a very simple way. It's much easier to set up than SIP, and much easier and simpler than services like WebEx."

Sangoma's Corbic says that SBCs will play a central role in WebRTC, noting that the legacy world is cut off from WebRTC without SBC, which can provide the translations between these old and new worlds.

"With Lync, WebRTC and video, all that is hitting the network, and the only technology that can keep up with all this technology is SBCs, because we're in the middle of the network," says Corbic. "The SBC is the glue." IT

A variety of other E-SBC and service provider SBC vendors, including Ingate and Sangoma, plan to introduce WebRTC solutions this year.

By Paula Bernier

Infonetics Surveys the SDN in the Data Center Frontier

Infonetics Research recently issued a new survey on software-defined networking for the data center. To learn more about the key takeaways, INTERNET TELEPHONY talked to Cliff Grossner, Ph.D. directing analyst, data center and cloud at the research firm.

For those not familiar with SDN, how would you define it?
Grossner: I would approach a definition for SDN in two parts: what benefit does it provide, and how does it provide this benefit. SDN has captured the attention of the market place because it has the potential to enable automation for the data center network, meeting new requirements for applications to be delivered on demand to smartphone and tablet users. Automation for the data center network is necessary to achieve the promise of data center agility and cost reductions. SDN drives a new high-level architecture for networks and applications. SDN enables integration of the network with orchestration platforms for automation of the entire data center across its three essential elements of compute, storage, and the network. SDN also enables coordination between applications and the network, something that does not occur in current networks.

Three-fourths of enterprises surveyed cite improving application performance as the top driver for investing in the data center. How can SDN help with that?
Grossner: The architecture and taxonomy of SDN includes a data forwarding plane (physical and virtual), a control plane, and network-aware applications. Inherent to SDNs are a method to abstract and separate the switch control plane from the data plane. This abstraction has the potential to drive new efficiencies, enable more scalable methods for defining virtual networks, and simplify support for multi-tenancy. SDNs include a method (APIs, PKIs, specialized protocols such as OpenFlow) that can be used by applications and external controllers to request network state information or services.

What are the other key drivers of SDN in the data center?
Grossner: Key drivers, in addition to application performance, that were named by respondents to our December 2013 Data Center and SDN Strategies: North American Enterprise Survey, where we interviewed 105 network decision makers, include improved management capability, and rapid application deployment. SDN has the potential to help with both of these.

You provided a long list of vendors that enterprises consider the top SDN vendors. Who do you see as the top three SDN vendors and why?
Grossner: In an open-ended question, we asked respondents whom they consider to be the top three SDN vendors, a measure called unaided brand awareness, which provides a good view of overall brand strength. Typically, the larger a vendor is (e.g., broad product portfolio) and the more visible their brand is (e.g., TV commercials, product placement), the better they fare in this question. It definitely is a benefit to be the incumbent when new technologies enter center stage, and the same appears true for SDNs. Cisco, the big player in enterprise networking, carries the expectation by 62 percent of respondents to be a leader in SDN. HP is in the No. 2 spot, with 27 percent of respondents indicating that HP is a top SDN vendor, and close behind HP is IBM with 25 percent of respondents.

Infonics expects SDN to go mainstream. What barriers does SDN need to clear to reach that tipping point?
Grossner: The SDN hype continues to be strong, but we must not lose sight of certain realities. We are still in the early market for SDN software and hardware, and customers are still in search of compelling use cases that demonstrate a clear ROI. There is still confusion surrounding SDN, with many different approaches, and no clear winners. Questions that customers are asking: What is the obvious benefit of SDN in my network? Is it easy to deploy? Is there a measurable return on investment? IT

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By Tom Keating

GLOBALINX Connex Review

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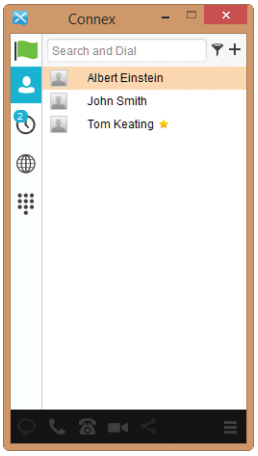
GLOBALINX, founded in 1997, is a reseller of Tier-1 carriers' services, including PRIs, MPLS, Fast & Gigabit Ethernet, as well offering business-class VoIP solutions, that includes feature-rich hosted unified communications. GLOBALINX was founded by Craig Jerabeck, who previously founded @Wireless Enterprises Inc., a 78-unit franchisor of retail wireless stores. The first products that GLOBALINX offered when the company started up were a digital telephone adaptor and a videophone. GLOBALINX, a wholly-owned subsidiary of 5LINX Enterprises, has been recognized by Inc. 500/5000 as one of the fastest growing privately-held companies in the U.S. for the past seven years. A large part of that growth can be attributed to their agent partners, an affiliate-like program of certified sales professionals that sell GLOBALINX's line of products to earn commissions. Having access to sell premium carrier-level voice and data services is certainly a huge driver of their sales channel.

One of their newest offerings at GLOBALINX is Connex, a hosted unified communications (UC) solution that supports mobile phones (Android & iOS), IP phones, tablets, PCs and laptops and gives you a single identity across multiple devices. TMC Labs took Connex for a test drive to see how this hosted UC solution compared to others, such as Microsoft's Office 365.

Unlike some competing solutions, Connex embraces standards such as XMPP and SIP. Technically, this means they could allow any IP phone, any XMPP client or a specific softphone. However, this would introduce many complexities and support challenges for the GLOBALINX team. To ensure smooth installation and ongoing usage, GLOBALINX has selected two popular SIP-based IP phone brands – Polycom, and Yealink, as well as GLOBALINX's UC softphone client, which supports VoIP, video, desktop sharing, contact integration with Outlook, and IM, including presence capabilities.



We decided to first check out their powerful Connex UC client, which is supported on Windows, Mac, Apple iOS, and Android. There is pretty good feature-parity across all platforms, though desktop sharing is unavailable on the mobile apps. After we installed the Windows Connex client, we launched the app and entered in our GLOBALINX credentials, and were prompted if we wanted to pull out Outlook Contacts. The user interface was very clean and minimalistic, which we liked. Too often software goes crazy with too many colors or large icons and buttons. The Connex client makes good use of colors to indicate presence status of your contacts, including green for available, yellow for away, grey for offline, and red for busy. Clicking the Contacts icon lets you search your list of Connex contacts, Outlook synced contacts, as well as the "global" shared directory. It supports auto-match as you type so you can quickly find contacts.

One minor complaint is that if you have a single-match you cannot simply hit enter to dial the contact, thereby forcing you to double-click with the mouse. Fortunately, we did find a keyboard work-around for power dialers – pressing tab first changes the focus on the app to the matched record and then you can press enter. You can also perform this trick with multiple records matched and then use the arrow keys to select/highlight the right record and hit enter. All-in-all though, the search and dialing from the app worked quite well and of course you can manually dial phone numbers using the keyboard in the dialing field or use the built-in dialpad.

We made several test voice calls and the Connex softphone app performed flawlessly and the audio quality was superb. You can right-click any contact and then choose one of three options: call (via Connex softphone), call from Phone (Polycom or Yealink), or video call. The second feature – dialing from a phone, is especially useful, since it allows you to use the Connex client to look up contacts, but use your desktop phone for the audio/video if you desire. Some users prefer the desktop phone's handset or speakerphone over using a PC's headset. Next, we made a test video call and the frame rate and video quality was excellent. You can resize the video window as well as go full-screen. TMC Labs asked what codecs are supported and we were told G.711, G.729, G.722 (HD), as well as H.264 for video.

During one of our test calls we tested one of the niftiest features, namely the ability to seamlessly move a call from device to device, whether it's an IP phone, the Connex softphone app, your cell phone, or your tablet. It can do this without dropping the call and without the user even noticing, except perhaps a change in call volume or call quality (i.e. cellular vs. landline). For example, to transfer a current call from your mobile you simply press *11 from your IP phone (Polycom or Yealink) or the Connex softphone, and it will pull the call to that device. If you want to transfer to your mobile you have two options. The first option is to simply dial your GLOBALINX business number, wait for the two-stage dial tone

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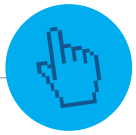

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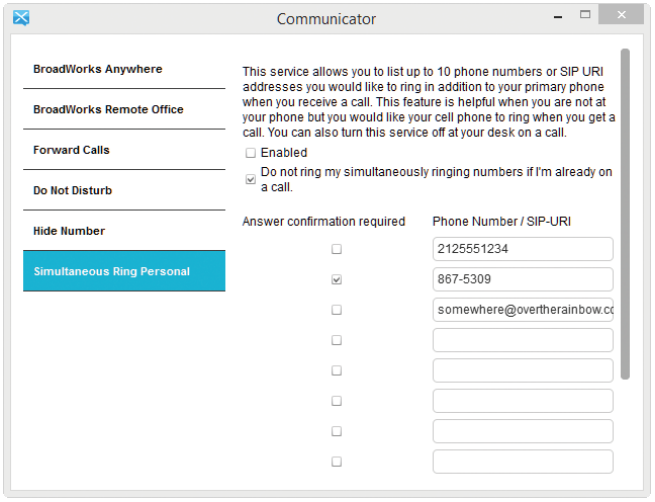
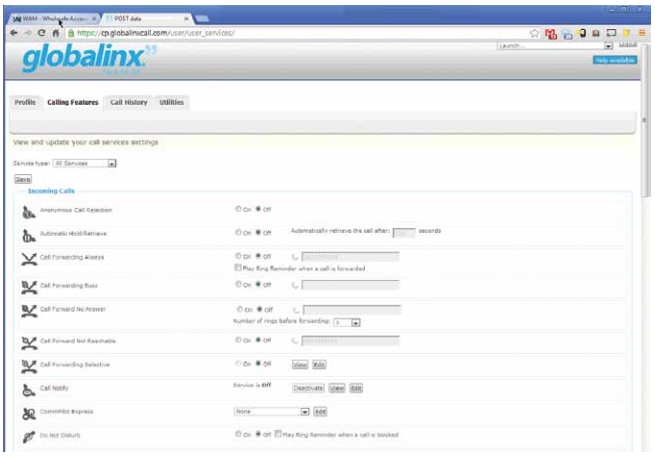
and then press *11 to transfer the call to your mobile. The second option is to use the Connex mobile app for Apple iOS or Android and dial *11 or press the dedicated button in the app to pull the call to the device. It's worth nothing that leveraging the two-stage dial-tone capability you can also dial GLOBALINX and then initiate an outbound call so that calls from your mobile phone use GLOBALINX's phone number as the CallerID.

From within Connex's Call Settings preferences screen you can configure some additional powerful calling options. For instance, you can add up to 10 phone numbers or SIP URI addresses to the Simultaneous Ring Personal screen and it will ring these numbers in addition to your primary IP phone and Connex softphone. You can also hide your Caller ID number from the Call Settings screen as well as configure your forward calls rules.



Relatedly, each Connex user can also log in to a web portal to configure some of these same call settings as well as additional settings. From the web portal you can access your profile, calling features, call history, and more. From the web portal you can configure some powerful calling features, including anonymous call rejection, call forwarding always/busy/no answer, sequential ring, automatic callback, line ID blocking, call waiting, personal music on hold, shared call appearance, and more.



It may seem minor, but we particularly liked the synchronized call logs, buddy lists and service settings. Since all your preferences are stored in the cloud, they are easily synchronized with the software on your device when you log in. So for instance, if you want to redial a recent number made from Device A, you can do that from the call history of Devices A, B, C, etc. This is great for power dialers like sales people who make a lot of calls from various devices and can recognize a number from the call history and quickly dial it.

Connex's chat functionality is pretty good and supports your typical emoticons. From a chat you can escalate to a voice or video call very easily, as well as send a file, view chat history, or initiate a desktop sharing session. The desktop sharing works well, but you can't share control, though that feature may be added at a later date. From within Connex you'll be notified of any new voice messages and you can click it to call immediately into the hosted voicemail.

We'd like to see the ability to leave video voicemail for internal-to-internal calls. That may be more of a consumer option right now, i.e. Skype video messaging, but when it comes to unified communications, having everything checked off the bucket list could be a competitive advantage in the crowded UC space. Another voicemail-related feature we'd like to see is visual voicemail. Currently, using the Connex softphone client you have to navigate using the touch-tone keypad to play messages, delete, etc. Thus, we'd like to see the softphone perhaps download a copy of the voicemail locally along with timestamp and Caller ID info for easier mouse navigation, deletion, and playback via an embedded media player. People who keep dozens or hundreds of voicemail will find this especially useful. That said, you can set it up to send your voicemail as an email with a .wav attachment and manage your voicemail from your email client. In fact, many people prefer managing voicemail that way. We're told that in a future release they will be adding 'Voice to Text' which will transcribe the first 60 seconds of a voicemail into text format which will be sent via email along with the .wav recording.

Ratings:

Installation: 5
Features: 4.75
Usability: 5
Voice Quality: 5
Video Quality: 5
Overall: A+

Conclusion

TMC Labs was impressed with both the voice and video quality of GLOBALINX Connex. The calling features are excellent and we liked that we could set them both from the Connex UC client as well as from the web portal. GLOBALINX Connex is a superb hosted unified communication solution that certainly merits our praise and TMC Labs gives them high marks for bringing affordable and powerful hosted unified communications to businesses of all sizes, but especially the SMB space.

Tom Keating is executive technology editor, CTO and vice president of TMC Labs (www.tmcnet.com).

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By Paula Bernier

An Update on Lync

This issue features a roundup of what partners in the Microsoft Lync ecosystem are offering, so we thought it would also be a good time to interface with Microsoft itself to get an update on Lync. Here's what the company had to say.

What is Lync?
Microsoft Lync is an enterprise-ready unified communications platform. Lync 2013 connects people everywhere, across devices, as part of their everyday productivity experience. Lync provides a consistent, single client experience for presence, instant messaging, voice, video and meetings. Features include:

- Stay in touch anywhere: Lync enables users to communicate securely anywhere they have network connectivity, and automatically adapts to network conditions.
- Use the device you want: Lync makes communicating easier with a consistent and familiar experience available on Windows PCs, Windows Phone, iOS, and Android smartphones. The new immersive Lync app for Windows 8 and Windows RT provides a seamless touch-first experience.
- Communicate in the right way: Lync unifies voice and video calls, Lync Meetings, presence, and instant messaging in one easy-to-use client, making it simple to choose and switch between different forms of communication.
- Connect with the outside world: Lync federation extends unified communications securely over the Internet to customers, suppliers, and partners using Lync or Skype.
- Take advantage of standards-based HD video: Lync uses open standards including H.264 SVC to provide a high-quality video experience on a wide range of devices.
- Make virtual meetings more effective: See up to five meeting participants simultaneously with new multiparty HD video support. You can choose who to see or let Lync choose for you.
- Extend Lync Meetings outside your organization with browser-based access: The Lync Web App allows PC and Mac users to join a Lync Meeting from a browser and delivers a full online meeting experience including IM, voice, multiparty video, data collaboration and sharing.
- Quickly and intuitively find the best way to communicate: Quick Lync is a menu that appears over a contact in the Lync contact list and shows available communication modes.

Why and when was Lync rolled out?
Lync 2013 began roll out in October 2012, which was a follow on from Lync 2010, which was released in January 2011. Lync 2013 was the official launch of the Lync brand and the point where we moved away from the previous Office Communications Server product. Microsoft saw an opportunity to transform the way communications are done and found opportunities to integrate communications directly into Office and make them very, very simple to do.

What are the latest additions with the new release of Lync for Windows 8.1?
We've paid close attention to feedback on the previous version of Lync and the latest version incorporates some of the most popular features that our users have requested. New features include:

- the ability to run Lync side-by-side with other apps;
- the ability to answer calls on the lock screen and control call volume inside the app;
- mute and control call volume from inside Lync;
- in-app contact search; and
- improved sign-in reliability.

How many Lync seats/partner solutions have been sold to date?
While we don't have the breakdown of seats to share, we can tell you that more than 90 percent of Fortune 100 companies are Lync customers. Our financial results reflect the growing customer adoption. In our Fiscal Year 2013 earnings release, we announced that Lync revenue grew 30 percent year over year. In our earnings call, we also disclosed that the Lync business, including Lync Server and Lync Online, surpassed $1 billion in annual revenue. Our voice software license sales grew 150 percent on top of an already significant installed base, which we noted in February at Lync Conference was more than 5 million seats.

Tell us about the Lync eco-system.
Our application ecosystem is the largest in business communications—our partners have delivered more than 2,000 applications on the Lync platform.

What does it mean to be part of the Lync eco-system?
Partners have invested in Lync 2013 as the next step in transforming their own businesses. Lync is built from the ground up as a communications applications development platform. Our partners are able to extend and further transform the communications experience of our customers with their own innovative applications. Our application ecosystem is the largest in business communications—our partners have delivered more than 2000 applications on the Lync platform.

Hardware partners are continuing to innovate on our platform. We already have more than 150 devices qualified for Lync 2013 with more on the way.

What support does Microsoft offer to members of the Lync ecosystem?
We are unique in the communications industry to have the benefit of one of the broadest eco-system of partners offering devices, products and services optimized for Lync. This wave of partner- led innovation, driven by Lync's open and interoperable platform, is helping to provide unprecedented choice and value for our customers across a broad spectrum of solutions and services.

We offer our partners a broad range of support, from training and resources through Communications Competency and the Lync Partner Readiness programs to Microsoft Premier Support for Lync Partners program which provides our customers with customized training, partner exclusive workshops and support from Microsoft Premier Professionals. IT

For more information, see: https://mspartner.microsoft.com/en/us/pages/solutions/lync.aspx.

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By Paula Bernier

Lync Roundup

What Microsoft Lync Partners Are Offering and Why

It's been five years since the release of Microsoft OCS and three years since Microsoft renamed the product Lync. This solution is noteworthy not only because of the range of unified communications functionality it offers, but also because it comes from Microsoft, which packages the Lync client with the Office suite.

Mike Storella, COO at snom, explains that the Microsoft strategy in the beginning was just about asking enterprises to try Lync for chat, interactive content sharing, multi-party meetings, video, and to have shared directories across their home, mobile and office phones.

Then Lync 2010 added E-911 support and other new features, making it a viable alternative to the PBX. Early on, some folks questioned whether Lync would really be a viable PBX alternative, but as Alan Percy, director of market development at AudioCodes, tells INTERNET TELEPHONY: "Businesses are definitely doing it. There's a gazillion case studies of companies that are doing it."

Here is a snapshot of some of the Lync partners and what they're offering to make Lync even better and more usable.

Aastra

www.aastrausa.com

The Aastra 6725ip is a full-featured IP phone optimized for use with Microsoft Lync. Aastra claims that the 6725ip provides the best Lync phone feature set available, including support of Microsoft's "Better Together" desktop link, allowing PC desktop control of phone calling features such as transfer, hold, call park, conferencing and click-to-dial. The Aastra 6725ip also features a color 3.5-inch LCD screen; a unified communications presence icon providing direct access to features and presence indications in Lync; exceptional voice quality provided through the use of Microsoft audio codecs on both the handset and speakerphone; embedded Microsoft Lync 2010 Phone Edition Software; dual gigabit Ethernet ports; USB interfaces; and standalone IP phone operation.

The Aastra 6721ip is an entry-level standalone IP phone, also optimized for use with Microsoft Lync. Aastra explains that the 6721ip provides a lower cost option for users who require the benefits of a true IP phone, including dual gigabit Ethernet ports and message waiting light indicator – but do not require the full UC desktop integration capabilities of the Aastra 6725ip. The Aastra 6721ip is an ideal selection for hot-desking applications and common areas, such as lobbies and meeting rooms. It also has embedded Microsoft Lync 2010 Phone Edition Software and integrated PoE support.

Aruba Networks

www.arubanetworks.com

Aruba Networks delivers the only enterprise Wi-Fi solution that is qualified for use with Microsoft Lync and for interoperability with Microsoft's Lync software-defined networking API.

Aruba controller-based Wi-Fi, when used together with the Microsoft Lync SDN API, ensures that Lync performs at its best with both desktops and mobile devices. Aruba Wi-Fi can deliver the optimal quality of service for all Lync flows, implement call admission control for Lync flows, and monitor and report on UC performance in real time. End-to-end call monitoring that correlates Lync server call information and Wi-Fi statistics makes quick work of root cause failure analysis, according to the company. Organizations can pinpoint where in the network a call failed, identify bottlenecks that limit Lync performance and diagnose device-level issues.

Aruba's Wi-Fi solution includes 802.11n and 802.11ac access points, wireless LAN mobility controllers, switches for AP backhaul, and the AirWave Network Management System for unified management of wired and wireless.

Aspect

www.aspect.com

Tight integration of Aspect Unified IP with Microsoft Lync gives agents the power to reach out across the enterprise

www.webrtcexpo.com

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and connect with the most qualified person to help with a customer's needs, explains Aspect. Agents can easily spot the experts inside the contact center and collaborate by sharing their desktops or files. This means people can address issues more efficiently and effectively, resulting in increased first-contact resolution and an improved customer experience. It also allows agents to collaborate in real time while keeping managers in control over communications, and lets agents and supervisors connect through a unified desktop, making it easier for agents to handle multiple cases.

Aspect Premier Microsoft Lync Support offered by Aspect, meanwhile, helps companies maintain peak performance of their enterprise Lync solution and deliver a consistently optimal user experience. The integrated services deliver 24x7x365 or 8x6 M-F incident support for critical Lync voice application with no restrictions concerning the number of cases opened annually. It also offers an Aspect team of extensively trained and tested Lync experts certified by Microsoft to respond to issues within targeted time frames, including in-process status updates and escalations.

AudiCodes
www.audiocodes.com

AudioCodes has the One Voice for Microsoft Lync brand, which includes IP phones, gateways, session border controllers, and survivable branch appliances. It also offers Lync call recording compliance, as well as Lync-related services including network voice readiness, for which AudioCodes assesses whether the customer network is ready for the rigors of voice, video, desktop sharing, and other multimedia that Lync supports.

The AudioCodes One Voice for Lync puts all of the company's voice-based UC hardware, as well as professional services and support, under one umbrella. AudioCodes started with gateways, moved to E-SBCs, then added survivable branch appliances, and recently expanded to its IP phone line. The creation of this suite of products and services is particularly relevant for AudioCodes partners coming from the IT space, according to the company, which explains that these folks are not as experienced in the voice realm, so can use a hand with integration. One Voice for Lync gives IT-centric partners one place to go for all the voice pieces.

Crestron Electronics
www.crestron.com

The Microsoft Lync Room System: Crestron RL is a comprehensive solution that combines Crestron hardware with Microsoft Lync to bring Lync from the desktop to the conference room. In addition, Crestron RL links to all systems in the room and gives users control of the entire room from the same touch screen. As a result, with just one touch of a button, anyone can walk into a conference room and instantly start a collaboration session; share their desktop with local and remote participants; and view and annotate over Microsoft PowerPoint or interactive whiteboard remotely or locally using the 65-inch touch display(s) supplied. Remote participants can join via Lync on their desktops.

Crestron RL is designed to seamlessly integrate with Crestron DigitalMedia and all other Crestron enterprise control solutions and products to offer a complete room solution. Simply press the RL button to instantly access lighting, shades, thermostats, DigitalMedia, AV presentation, and much more – all from the same touch screen. Crestron RL rooms can be centrally monitored, managed, and controlled using Crestron Fusion software for a complete Enterprise Building Management solution.

The Crestron RL packaged solution includes the Crestron UC Codec for Lync, HD camera, microphone, 65-inch touch display(s), a hi-res 10-inch tabletop touch screen, and more.

CVT (Global) Pty Ltd.
www.cvt.com.au/periscopegclync

CVT's Periscope GC for Billing and Enhanced Reporting on Lync recognizes that Lync provides an opportunity to deliver more functionality for customers. Not only does Lync deliver a rich unified communications environment for users, but it coincides with the latest Microsoft technologies in operating system, database and web application development.

Periscope GC takes advantage of these developments to deliver a rich web-based user experience providing well-established

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telecom reporting features such as on-billing, call cost accounting, and service provider bill import, and extending that further to drive business analytics around the unified communications play. In the Microsoft Lync environment as well as reporting on enterprise voice usage, Periscope GC will also provide insight and reporting on other Lync media usage including application sharing, file sharing, IM and video.

Periscope GC, a qualified Microsoft Lync 2013 solution, is used by customers in all verticals delivering the full range of requirements including more than 100 standard report templates in multi-formats, scheduled reports, exception reports, monitoring dashboards and more.

Dell
www.dell.com

Dell Software simplifies migrations, ensures availability and maximizes performance while decreasing the management complexity of Microsoft Lync Server. The company says it has proven expertise and many years of experience managing millions of mailboxes and users, and can help prove that Lync and OCS are delivering their intended business results.

The company simplifies and accelerates Office Communications Server and Lync Server migrations with less risk to the budget and business operations and ZeroIMPACT on end users. Dell allows companies to migrate from Lotus Sametime to Microsoft Lync Server or OCS with solutions from Dell Software to help ensure a safe, accurate migration that saves business time and money. Dell Software provides the insights needed to understand the usage and adoption of the Microsoft Lync Server and OCS. By assessing the adoption and usage, organizations ensure that its benefits are fully realized.

Dell Software's products for these solutions include Migrator for Sametime, which offers in-depth pre-migration assessments, centralized project management and task automation. Because user contacts are migrated with complete accuracy, end users will not need to rebuild or reorganize their contact lists in the new environment because user contacts are migrated with complete accuracy. Dell also provides MessageStats, which reduce the complexity of e-mail and unified Microsoft Exchange reporting and analysis. This solution works across legacy Microsoft Exchange Server and newly implemented platforms, including on-premises Exchange, Office 365 and Lync Server. ActiveRoles Server from Dell simplifies the security and protection of Active Directory to solve security issues and meet compliance requirements. And its Spotlight on Messaging solution allows users to easily perform real-time diagnostics and resolve problems. From a single console, users can manage e-mail, IM, VoIP, mobile, conferencing and more for Microsoft Office Communications Server (OCS)/Lync Server, Microsoft Exchange Server and BlackBerry Enterprise Server.

GENBAND
www.genband.com

GENBAND C20 PSTN Gateway, EXPERiUS Application Server and QUANTiX SBC are all fully qualified by Microsoft under its Unified Communications Open Interoperability Program. All are Certified with Lync 2010.

GENBAND SMART SESSION SIP Trunking solution, meanwhile, enables enterprises and service providers to deploy a Microsoft Lync certified SIP trunk that is secure, adaptive to multiple SIP and IP variants, interoperable with non-Lync premises-based equipment, and enabled with hosted UC services such as GENBAND's SMART OFFICE.

Key benefits of GENBAND and Microsoft Lync Integrated Solution include hosted telephony service integrated to on premises OCS/Lync unified communications; flexibility in interworking with on-premises and hosted Microsoft Lync deployments; secure migration from PRI to Lync certified SIP trunks; centralized session management across Lync and non-Lync environment for advanced telephony and unified communications; seamless signaling, IP protocols, and media normalization between multi-vendor PBX, IVR, and UC environment; improved network resiliency and disaster recovery with multi-site geographic redundancy; better controls to assure QoS and SLA from SIP trunk providers; consistent user experience with enterprise mobility and federation across multi-vendor environment; and simple integration of new converged UC and multimedia applications with minimal investment and minimal infrastructure change.

The company plans to achieve certifications with Lync 2013 and Office 365 next year for individual products. GENBAND already has performed successful testing of its SBC product with Lync 2013 and has it working in customer deployments.

Gensys
www.genesyslab.com

Customer experience and contact center solutions provider Gensys has achieved Microsoft Lync 2013 qualification and is a member of the Microsoft Lync Independent Software Vendor qualification program.

Companies select Genesys and Microsoft Lync to leverage the combination of best-of-breed contact center and unified communications solutions, rather than closed proprietary hardware-based solutions. By incorporating multi-channel customer experiences and contact center capabilities from Genesys, Lync customers can seamlessly deliver voice and instant messaging interactions to both their customer service agents and back office employees.

Genesys integrates the real-time presence and availability status of all Lync users, which enables companies to route calls com-

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ing into the contact center to any available employee wherever he or she is located – in stores, branch offices, home offices, outsource partners, or any other location. As a result, organizations using both remote employees and contact center agents are able to track the availability of an employee resource beyond the contact center and better direct enquiries based upon the status of any given resource to increase efficiency of service.

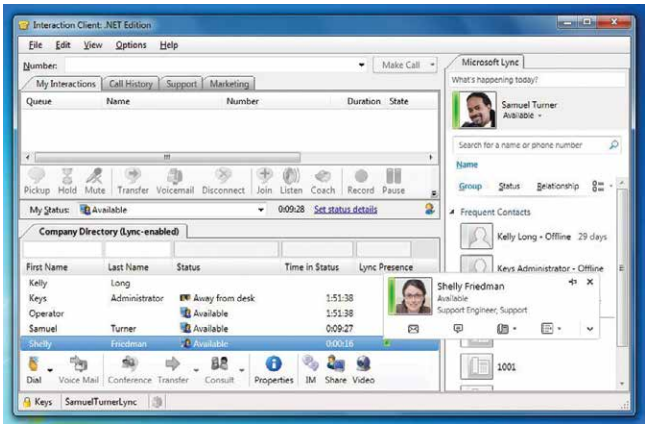
Ingate
www.ingate.com

Ingate E-SBCs are fully qualified by Microsoft's Unified Communications Open Interoperability Program guaranteeing a secure and reliable use of Microsoft Lync applications. Microsoft recommends an E-SBC to provide connectivity and interoperability when connecting the Lync environment to a SIP trunk service.

The Ingate E-SBC resolves interoperability issues between the SIP trunk provider, other on-premises equipment and the Microsoft Lync server, paving the way for a fast, simplified installation. Ingate provides solutions for enterprises and service providers and the Ingate E-SBC products available both in hardware and software versions.

While all of Ingate's SBCs already are compatible with Lync, it is in the process of getting certified on Lync 2013. It expects to have that certification this quarter.

Interactive Intelligence
www.inin.com



Customer Interaction Center, a software solution from Interactive Intelligence, has passed the UCOIP-Lync Qualification program for direct SIP connection interoperability, and the Lync Server 2013 and 2010 Qualification programs for interoperability with contact center systems.

CIC and Microsoft Lync Server integration provides a feature-rich contact center add-on to Lync enterprise telephony deployments. The combined solution helps mid-size to large enterprises improve collaboration between contact center agents and business users through shared features such as presence management, directory look-up, instant messaging, video, and more.

Key features include a single CIC/Lync directory with integrated real-time presence management and one-click access to multiple communications channels (e.g. IM, video, voice calls, e-mail, faxes, desktop sharing, etc.) for increased productivity and improved collaboration between the contact center and enterprise. In addition, CIC's open architecture enables customers to deploy Lync-certified third-party endpoint devices so they can use existing infrastructure and equipment for maximum investment protection and increased ROI.

Jabra
www.jabra.com

Jabra and Microsoft work as strategic partners to integrate Jabra devices into current and new generations of Microsoft Lync solutions to deliver the ultimate voice collaboration experience. Jabra audio devices that are optimized for Microsoft Lync are tested by Microsoft to offer a rich and integrated voice experience for Microsoft Lync users. The term optimized means that Jabra devices are built to rigorous Microsoft Lync specifications and adhere to the highest standards for voice quality and call control.

When customers buy Lync optimized devices they are guaranteed that their devices will work with Lync. In addition, they are assured that Jabra and Microsoft are aligned for post-sales support or service.

Today, Jabra offers a full portfolio of Lync-optimized devices suitable for different user work styles (mobile, office and desk-centric). Jabra's Lync-optimized devices ensure the best user experience by combining plug and play capabilities with innovative features, automatic device detection, remote call control and superior wideband audio quality. Those devices include bluetooth headsets for mobile professionals; wireless headsets and speakerphones for office staff; and corded headsets for desk-centric employees.

MIND CTI
www.mindcti.com

PhonEX ONE, a software solution from MIND, is a comprehensive, flexible, web-based solution for communications management and control in enterprises that deploy Microsoft Lync Server 2013/2010.

The comprehensive and varying communications media types available with Microsoft Lync Server 2013/2010 means it is important to have the ability to report, monitor, and manage the resources accord-

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ingly. Companies that take advantage of the Lync platform want to be able to reduce costs, increase employee productivity, and improve network performance. PhonEX ONE provides intelligent tracking of all calls and supports multiple call types generated by Microsoft Lync Server 2013/2010. This includes reporting on inbound, outbound, and internal calls; trunk-to-trunk calls and SIP trunks; forwarded, conference, and video calls; instant messages; and response groups.

Customers can easily produce customizable reports with drill-down capabilities, including traffic reports to monitor peak loads and bandwidth utilization as well as what if reports to compare alternative carriers and analyze potential cost savings. Other PhonEX ONE features include a dashboard user interface, event log for auditing and tracking system use, scalable architecture to support unlimited sites and extensions, LDAP compliance, easy adjustment to organizational hierarchies, a database structure based on Microsoft SQL Server database, automated reports (e-mail, screen, or saved to file), user-definable report format (in Microsoft Excel and Word, HTML, PDF, and CSV files), capability for multiple languages, currencies, and call detail records, cellular phone reporting, real-time automated alarms, and support for virtual environments.

NetScout Systems Inc.

www.netscout.com

NetScout's nGenius Voice | Video Manager is a unified communications performance management solution for UC deployments that has unique integration capabilities for Microsoft Lync deployments. It delivers real-time visibility into the user experience with end-to-end and call signaling and media performance for voice and video sessions. Qualified by Microsoft for both Microsoft Lync Server 2010 and Microsoft Lync Server 2013, the solution automates and simplifies the identification, triaging, investigating, resolution, and reporting of emerging voice and video service performance degradations. The nGenius Voice | Video Manager platform automatically combines performance metrics from Microsoft Lync endpoints with performance metrics generated from packet flow data at key visibility points along the call path, and from critical UC network infrastructure elements.

The nGenius solution provides contextual workflows that enable analysis and troubleshooting capabilities that support both proactive and reactive performance management tasks. This enables IT staff to quickly understand the impact of voice and video application-level service degradation on end user experience, precisely pinpoint root cause, and quickly resolve service quality problems thus reducing mean-time-to-repair.

Patton

www.patton.com

Patton's SmartNode VoIP media gateways have been tested and qualified for interoperability with the 2013 version of Lync Communications Server in Microsoft's Unified Communications Open Interoperability Program (UCOIP).

SmartNode eliminates the interoperability obstacles for companies that want to keep their legacy PBXs, phones, speakers, pagers, and fax equipment, existing FXS/FXO POTS service or ISDN BRI/PRI lines when implementing a unified communications solution based on Lync. Enterprises operating otherwise non-compatible voice equipment and telephony network elements ¬– including non-certified SIP telephony systems – can use Lync-certified SmartNode VoIP gateways to connect and interoperate with the Lync unified communications server.

By interconnecting Lync software with legacy voice technologies and the PSTN, SmartNode preserves investment in operational equipment while adding such rich benefits as voice-and-data survivability and least-cost call routing – all with the set-it-and-forget-it reliability of SmartNode. The 2013 re-certification assures customers that SmartNode interoperates seamlessly and reliably with Microsoft's UC software.

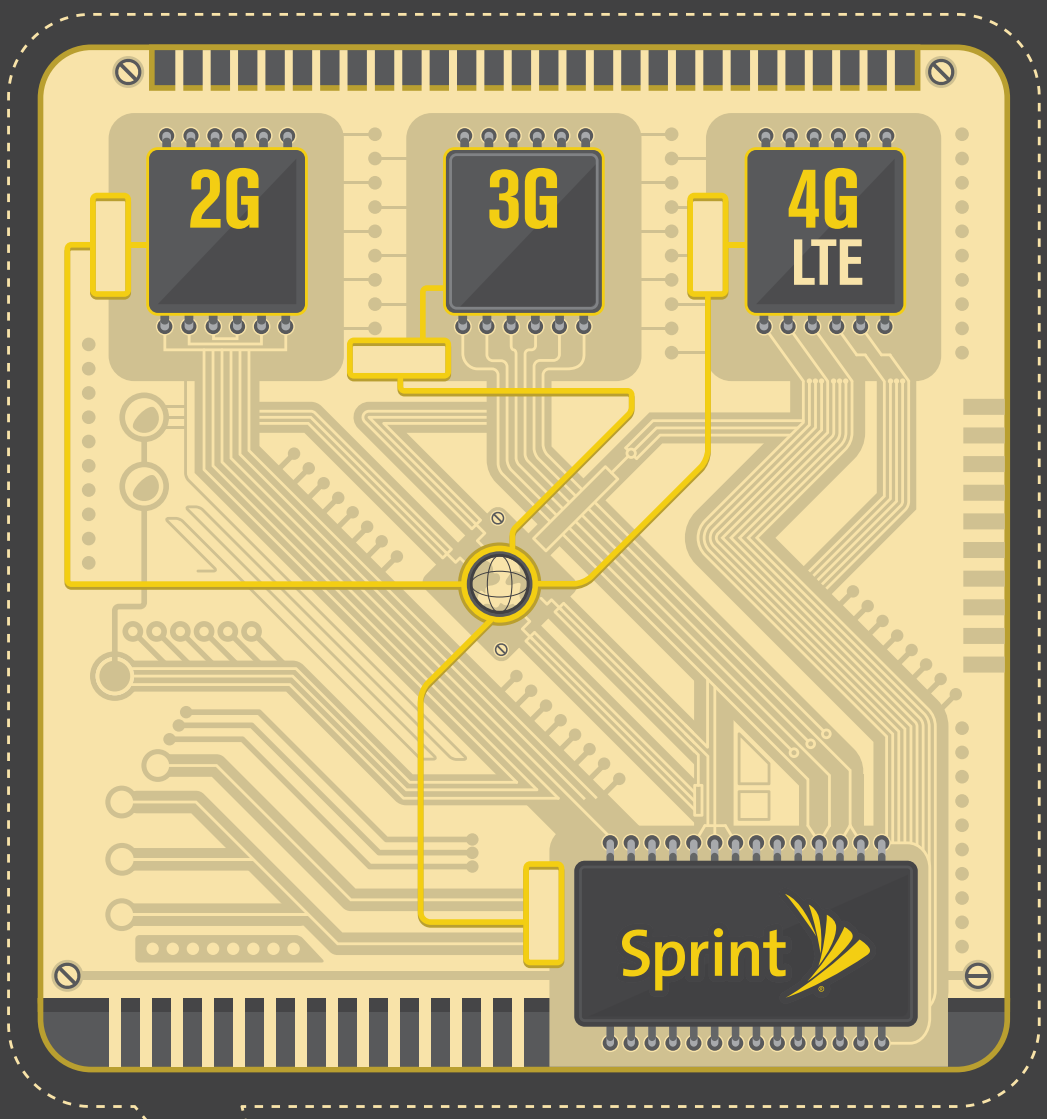
"When it comes to solving interop challenges, Patton's history is long and strong," said Tyler Delin, SmartNode product manager. "Not only with Microsoft and Lync, but in the VoIP industry overall. SmartNode was the world's first VoIP gateway that could actually get VoIP working in some extra-tricky ISDN environments."

Plantronics

www.plantronics.com

Plantronics audio devices are optimized to work seamlessly across the Microsoft Lync platform and beyond. The partnership provides simple, highly integrated audio solutions to bring technology and people together and create more productive, efficient and empowered businesses. Contextual Intelligence enables Plantronics audio devices, optimized for Microsoft Lync and Skype, to simplify and ease communications by understanding the user's location and delivering a service that best suits that environment.

Sprint



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The useful tool for impromptu conference calls, the Plantronics Calisto 620 is a portable wireless UC speakerphone that instantly transforms a laptop or smartphone into a high-quality conferencing device. Small and lightweight, the Calisto 620 provides professional-sounding audio and wireless connectivity.

Plantronics' Voyager Legend UC headset system, aimed at mobile professionals, offers connectivity to PC, smartphone, or tablet, and has sensors, precisely-tuned audio, voice controls and advanced charging accessories.

The Blackwire 700 Series is a versatile UC headset that offers high-quality PC audio and seamless Bluetooth connectivity to mobile phones and tablets. Smart Sensor technology automatically answers a call when you put on the headset, and there's a detachable cable for taking mobile calls throughout the office.

Polycom
www.polycom.com

Polycom offers a full line of purpose-built solutions optimized for Microsoft Lync as well as Polycom standards-based, interoperable voice, video and video content management solutions for Lync. These 40 solutions paired with Microsoft Lync deliver a complete and interoperable end-to-end unified communications solution for voice, video, conferencing and collaboration and connect people from any device, and from any location. Polycom is also a Lync Room System Partner.

Polycom business media phones and conference phones for Microsoft Lync are integral voice components to consider for any Microsoft UC strategy. Built to be an extension of Lync, the Polycom CX series takes the simplicity, ease of use, and familiar Lync interface to environments throughout the enterprise. Combining Polycom HD Voice technology with the advanced presence-enabled telephony capabilities of Lync, these phones and speakerphones deliver new levels of productivity and information to desktops, conference rooms, lobbies, and common areas. The Polycom CX Series of phones are optimized for Microsoft Lync and have full support to Lync PBX functionalities, access to calendar and contacts, rich conferencing, extended functionalities when connected to the PC, and integrated security and manageability.

The Polycom VVX series is a family of Business Media Phones qualified for Microsoft Lync that give busy professionals a high-quality audio and video communications experience.

Sangoma
www.sangoma.com

Sangoma's session border controllers are Lync 2013 certified. SBCs act like glue, notes Sangoma, doing LDAP integration, supporting legacy PBXs, and generally enabling all the parts and traffic to work together.

The company also offers the Lync Express appliance, which represents Sangoma's push into network virtualization. It's essentially Lync in a box and includes a front-end server, mediation server, active directory server, active proxy, TDM gateway, and SBC.

Sangoma's NetBorder Lync Express integrates the hardware and software elements necessary for a complete deployment of Microsoft Lync, Lync Enterprise Voice, or a wide range of other use cases, including Continuous Branch Exchange, Office 365 telephony support, and legacy PBX integration. Lync Express can serve up to 1,000 Lync seats per unit, incorporate a full-featured SBC for deployments using SIP trunks, can be configured with a variety of PSTN interfaces using the built-in VoIP gateway or with both an SBC and VoIP gateway in the same unit, all of which is fully Lync 2013 certified. The versatile Lync Express appliance can be configured with a variety of PSTN interface types and a VoIP gateway as an IP only device with an integrated SBC, or with both gateway and SBC capabilities in the same unit. Lync Express can cut Microsoft Lync deployment times in half.

SMART Technologies
www.smarttech.com

The SMART Room System for Microsoft Lync has been qualified by Microsoft as fully interoperable with Microsoft Lync Server 2013 and is now shipping worldwide. SMART Technologies says it is one of the first companies to globally ship an integrated hardware and software solution that supports Microsoft Lync in the meeting room.

The conferencing solution, available in three sizes, simplifies the collaboration experience for both virtual and face-to-face meeting participants and provides a seamless online experience through sharing of real-time video, voice and data. Businesses that have started using SMART Room System have benefited from its ease-of-use and found it led to better engagement, enhanced communication and increased productivity.

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Snom has been a Microsoft UC partner for five years. Today, a total of six snom phones are qualified for Microsoft Lync Server 2013. That includes the 300, 370, 710, 720 and 760, 821 models. Storella points out there's a difference between Lync optimized and Lync qualified. Optimized, he says, means the solution only does Lync, while qualified means it can support Lync and work with other VoIP systems and identities. For example, he explains, a Lync-qualified phone could be Avaya connected, and at the same time could work with Lync.

The company offers the snom UC Edition firmware (snom Unified Communications Edition), an optional software module for the snom 300, snom 370, snom 821 and snom 7xx series phones, enabling them to connect directly and natively to Microsoft Lync.

It combines the advantages of open standards-based IP telephony by using the SIP protocol to seamlessly integrate with Microsoft Lync and any other SIP-based IP PBX in parallel.

Storella adds that snom continues to develop more capabilities for these devices. One example is a feature called Boss/Admin, which is a shared line. It lets administrators answer the phone for multiple bosses, so involves sharing identities on multiple phones. Presence is also a feature snom offers on its phones. Snom UC Edition qualified for Lync also includes easy sign in with an extension and PIN (so it's plug and play), SBA support (snom also offers failover identity, so if one identity is cut off users can fail over to a local IP PBX), park orbit support, and picture display (users can assign context, music on hold, and language support so a different language appears on the phone display). The snom phones now also have Lync-Skype federation and two-year warranties. The company also has been in beta with Better Together, which it expects to make generally available this quarter.

Sonus Networks
www.sonus.net/lync

All of the session border controllers sold by Sonus Networks are Lync qualified. The company in November announced that the Sonus SBC 5210 and Sonus SBC 5110 session border controllers have achieved Microsoft Lync 2013 qualification for SBC deployments.

The Sonus SBC 1000 and SBC 2000 Session Border Controllers also received Microsoft Lync 2013 qualification in several categories, including SBC, survivable branch appliance, E-911 ELIN gateway and enhanced gateway. The SBC 1000 and SBC 2000 also received Microsoft Office 365 Exchange Unified Messaging qualification.

In announcing this news, David Tipping, vice president and general manager for the SBC business at Sonus, commented: "Sonus is the only vendor offering enterprises and service providers a complete end-to-end Lync qualified SBC solution. From the enterprise headquarters to branch offices, Sonus SBCs empower customers to communicate in the most efficient ways – whenever and wherever – with seamless, secure access to unified communications applications such as instant messaging, collaboration, video, conferencing and voice."

Tipping tells INTERNET TELEPHONY that 25 percent of Sonus product goes through Lync channels and that around 35 to 40 percent of end users served by Sonus infrastructure are users of Lync.

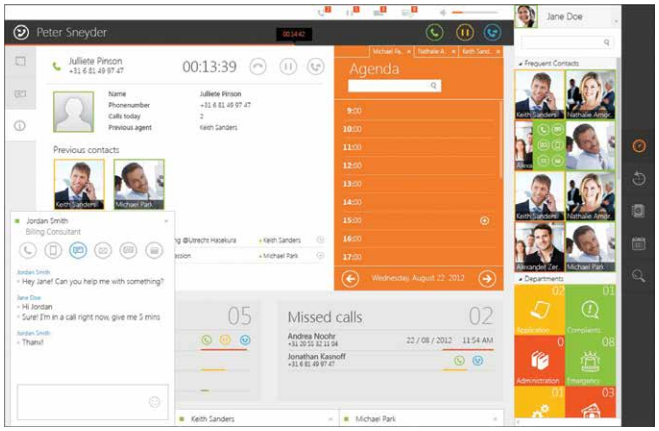
Spectralink Corp.
www.spectralink.com

Spectralink says it is the first company to offer enterprise wireless communication solutions qualified for Microsoft Lync 2013. The Lync qualification applies to the DECT product line as well as the 84-Series Wi-Fi handsets.

The Spectralink DECT and Wi-Fi handsets that have been qualified on Lync 2013 directly interoperate with Microsoft Lync, eliminating the need for a gateway between the technologies. Direct integration reduces both the complexity of implementation and the associated cost of hardware and support services. Using Spectralink's purpose-built wireless devices, businesses can combine Microsoft Lync with applications and tools customized for specialized working environments such as health care, manufacturing and retail.

WORKSTREAMPEOPL
www.workstreampeople.com/Anywhere365

Rotterdam, Netherlands-based WORKSTREAMPEOPL created its Anywhere365 solution because it believed the contact



center needed to be reimagined. Your business does not need a contact center, according to the company, your business is a contact center, with a variety of individuals with different skill sets. That said, WORKSTREAMPEOPL leveraged Microsoft Lync Server as the enterprise communications platform to natively build its Dialogue Management platform within Lync.

The Anywhere365 Unified Contact Center, the company's flagship product, is part of its flexible dialogue management system, for which all (IP) voice, chat and web chat, video, e-mail and conference communications can be efficiently and adaptively routed, traced and tracked. Lync Reception Attendant is provided on top of the Anywhere365 UCC platform.

With Anywhere365 as the dialogue management system, powerful business intelligence capabilities have been implemented to allow the organization to extract key information based on business specific dialogue patterns. This helps to better manage workforce capacity, determine bottlenecks and allows for pro-active decisions based on anticipated dialogue volumes and characteristics

Zeacom (an Enghouse Interactive Company)
www.zeacom.com

Zeacom is a member of the Microsoft Partner Network with Gold competencies in application development, application integration and communications software. Its software solution is known as the Zeacom Communications Center 7.0. ZCC 7.0 is a multi-channel contact center software platform that integrates natively within the Microsoft Lync environment.

ZCC 7.0 features TouchPoint, Zeacom's redesigned user interface for agents and supervisors, as well as new campaign tools for customers using Microsoft Lync, and enhanced redundancy options. TouchPoint is a new minimalist interface designed to encourage collaboration both inside and outside the contact center, and as such improve first-contact resolution of customer needs. The application provides real-time information and context-aware functionality to maximize efficiency, and its lean, compact nature prevents desktop clutter and information overload for those users who also work in CRM and other business applications.

Additional productivity features available in ZCC 7.0 include increased agent utilization. Outdial for Lync allows outbound campaigns, such as collections, outbound sales campaigns and appointment reminders, to be run during slow inbound calling periods. This improves agent productivity and offers revenue generation opportunities within the contact center.

Also new are additional customer feedback channels, ZCC Survey enables managers to capture customer feedback on e-mail and web chat-based agent interactions, as well as those conducted through voice automation. Integrated reporting provides comprehensive monitoring of customer satisfaction across all communication channels.

It has improved redundancy. Database replication is now supported in a variety of configurations, ensuring that the standby server is always current; this significantly enhances performance in multiple disaster recovery scenarios.

As a part of the larger Enghouse Interactive business, Zeacom continues to enhance its available portfolio of products through integration to Enghouse Interactive Quality Management Suite (recording, evaluation, and computer recording across a larger set of platforms), and Enghouse Interactive Communications Portal (an IVR, self-service, and speech-enabled automation solution).

ZCC's intelligent routing can identify and deliver calls to the most appropriate agent based on factors such as called number, caller ID, call region, data entry, value, time of day, agent skills and more. Multimedia queuing allows agents to seamlessly handle all types of media quickly and easily. The results are shorter customer response times and higher agent productivity.

For organizations migrating to Lync, ZCC 7.0 connects to two-thirds of the world's most prevalent PBX systems using their native architecture, which means that users can pilot, prove and migrate helpdesk or contact center to Lync when the time is right.

With ZCC for Lync, users also can screenpop and dial from Microsoft Dynamics CRM right out of the box, assimilate SharePoint tasks into workflows and take advantage of Zeacom software development kits to integrate with a wide range of software applications.

Using UCMA and the Trusted Conferencing platform to interoperate with Lync also allows Zeacom to offer a rich customer and user experience that can be implemented in a scalable, robust fashion. IT

By Paula Bernier

Get Ready for a Year of Intense Cellco Marketing, VoLTE Intros & Mobile Intelligence

Wireless in 2013 continued its ascent, and the number of wirelessly connected devices and people is expected to climb in the year ahead.

At the end of 2013 there were more than 2 billion smartphones, 300 million tablets, and one billion portable PCs in use globally, according to Deloitte's Global Mobile Consumer Survey. Deloitte estimates there were one billion smartphones sold last year, up from 750 million in 2012.

That doesn't even include the quickly growing category known as the Internet of Things. This space, which excludes PCs, tablets and smartphones, will grow to 26 billion units installed in 2020, representing an almost 30-fold increase from 0.9 billion in 2009, according to Gartner Inc., which expects IoT to generate incremental revenue exceeding $300 billion, mostly in services, in 2020.

"The growth in IoT will far exceed that of other connected devices," said Peter Middleton, research director at Gartner. "By 2020, the number of smartphones tablets and PCs in use will reach about 7.3 billion units. In contrast, the IoT will have expanded at a much faster rate, resulting in a population of about 26 billion units at that time."

That said, it comes as no surprise that mobile data traffic continues to grow at a breakneck pace. Video is the largest and fastest growing mobile data traffic segment, and it's expected to increase by 55 percent annually until the end of 2019. And we can expect mobile data traffic to grow by a multiple of 10 between 2013 and 2019, according to Ericsson Mobility Report issued November 2013.

GSM/EDGE-only represents the largest share of mobile subscriptions today, says Ericsson, which adds that's starting to decline in developed markets as they move to more advanced technologies.

"Despite this," Ericsson goes on to report, "GSM/EDGE will continue to represent a large share of total mobile subscriptions. This is because new, less affluent users entering networks in growing markets will likely choose a low-cost mobile phone and subscription. In addition, it takes time for the installed base of phones to be upgraded. GSM/EDGE networks will also continue to be important in complementing WCDMA/HSPA and LTE coverage."

LTE Update

As for LTE, networks and subscriptions based on this new, 4G technology continue to be turned up at a very respectable pace.

There were 222 commercial LTE networks in operation in 83 countries in the third quarter of 2013, according to Ericsson. LTE subscriptions globally hit 150 million in the third quarter, and forecasts indicate LTE subscription will reach around 2.6 billion in 2019. At the end of October 2013, 22 wireless carriers had launched LTE networks, with 18 service launches in the last two months and 38 more expected by end of 2013, according to Deloitte, which said about 59 percent of the consumers it surveyed indicated they want to update to LTE in the next 12 months.

Some markets are very far advanced in terms of LTE and some are not, but LTE is very prevalent in the U.S., says Jim Guillet, vice president of wireless marketing at Alcatel-Lucent, where the cellular carriers are locked in a battle of one-upmanship.

Verizon, which in December celebrated its three-year anniversary of being to first to launch with LTE, today offers LTE in 500 U.S. markets. The company notes that means it's available to more than 303 million people, or more than 95 percent of the U.S. population.

"With the most reliable 4G LTE network, the largest footprint, and deployment of its Advanced Wireless Services spectrum now adding capacity nationwide, the company is ahead of the competition in terms of quality, coverage and technology," wrote Verizon spokesman Paul Macchia in a Dec. 5 blog. "Verizon 4G LTE is available where customers need super-fast mobile broadband connections, from major airports to many small towns through the LTE in Rural America program. And Verizon Wireless' 4G network is pure 4G LTE, not a mix of 4G technologies."

AT&T doesn't seem to like talking about its overall 4G LTE coverage, as details about that are not listed in either the FAQs part of its website or in the boiler plates to its new market launch press releases. Instead, AT&T, which uses a combination of LTE and HSPA+ technology to deliver what it refers to as 4G speeds, emphasizes its new builds, dollar-figure network investments, and – notably – the fact that it's considered to deliver the fastest 4G speeds in the marketplace.

Meanwhile Sprint today delivers LTE in 300 markets. Sprint recently made news with the launch of its Spark campaign, which promotes the fact that the carrier uses three spectrum frequencies to deliver peak 4G LTE wireless data speeds of 50 to 60mbps.

"In 2013, we made major improvements across our 3G and 4G LTE network," says Bob Azzi, Sprint chief network officer. "In the growing number of markets where the upgrades are nearly complete, our customers are noticing. Re-engineering our entire network has been a big undertaking, but now it's delivering tangible benefits to our customers. With the announcement of Sprint Spark, the increasing availability of 4G LTE and the improvements we have made to our voice network, we're full speed ahead for 2014."

AT&T and T-Mobile are also turbo-charging their 4G networks, writes Kevin Fitchard in a Nov. 7 Gigaom story, which explains that AT&T has begun leveraging its PCS spectrum for LTE.

"Unlike Verizon's forthcoming 4G monster, Sprint's planned Spark network and T-Mobile's recent doubling of LTE bandwidth, AT&T's new PCS LTE network won't boost the speeds of its current networks," Fitchard writes. "The 10mHz configuration AT&T is using is only half the size of the 20mHz network it's already running in the 700 mHz band, which means it will support only half the theoretical speed. But I doubt AT&T is too worried."

That's because, as noted above, AT&T already is the market leader in terms of LTE speeds. What the new PCS spectrum use for LTE at AT&T is about is new LTE capacity.

This idea would seem to dovetail with the concept of LTE-Advanced, a standard out of 3GPP that addresses how the radio access network can combine airwave pipes (which can involve a wide array of spectrum, even the stuff that carriers amassed during their 2G days) between small or macro cells and consumer devices in an effort to achieve higher capacity. LTE-Advanced is now in trials, with first commercial deployment expected this year. But user handsets will have to support this new technology for end users to benefit.

"Wireless operators have to pull every lever they can to address the capacity needs that mobile broadband requires," notes Alcatel-Lucent's Guillet.

While they are doing that on the network side, on the marketing side cellular providers are expected to become more visible in promoting how their services differ from the competition.

Verizon has been talking a lot about staging video demonstrations to show what can be done with video over its 4G network. In fact, Guillet says, Verizon leadership recently mentioned it will demo this kind of thing during the Super Bowl in February.

"With LTE and with some broadcast capabilities in LTE you can broadcast over LTE live streaming of video," says Guillet. While the big four cellular carriers battle it out over 4G in the U.S., LTE is also ramping up in China.

China Mobile was first at bat, which makes sense considering its 3G network is based on TDS-CDMA for 3G, which doesn't really

offer a clear path to 4G, explains Guillet of Alcatel-Lucent. China Mobile, which says it is rolling out the world's largest 4G network, offers 4G TD-LTE services in 16 cities including Beijing, Shanghai, Guangzhou and Shenzhen. By the end of 2014, the cellular carrier expects to have launched service on 500,000 4G base stations, which will cover more than 340 cities.

Alcatel-Lucent in December was named as one of the top suppliers for China Telecom's LTE build. Ericsson, which was not involved in China Mobile's 3G network, is another of the carrier's 4G suppliers. Ericsson has been selected to help China Mobile deploy LTE in 15 key provinces in China, providing its EPC solution as part of the deal. Huawei and ZTE, which were named as key suppliers for the build back in August, are also key suppliers for the China Mobile 4G effort (owning 25 percent each of the build, according to some reports).

China Telecom, whose 3G network is based on CDMA (another technology without a clear path to 4G), moved on the heels of China Mobile. In December China Mobile tapped Alcatel-Lucent to provide it with small cells. Nokia Solutions and Networks in December also announced it had won LTE business from China Telecom, which will use NSN's Flexi Multiradio 10 Base Stations, its NetAct network management system, and related launch optimization, implementation and care services.

And China Unicom, which currently relies on W-CDMA, is expected to move beyond its LTE trials soon, according to Guillet.

Mobile VoIP

While cellular companies in the U.S. and abroad continue expanding and improving upon their 4G network builds and marketing campaigns, they are also looking forward to finally introduce VoLTE to the mix.

Voice over LTE is expected to launch in a significant way in 2014. According to a new study from iGR, we can expect several major U.S. mobile operators to make VoLTE commercially available on a widespread basis in the second half of this year. And, iGR says, the number of VoLTE subscribers will grow at a compound annual growth rate of 187 percent between 2012 and 2017.

VoLTE is noteworthy to cellular service providers and their customers for at least a couple of reasons.

First, it will enable some cellcos to lower their costs and better leverage their assets because now they can move voice traffic onto newer 4G networks and spectrum. That means they can decommission older networks when it makes sense, and leverage the spectrum now earmarked for voice fallback for other uses.

Second, cellcos see VoLTE as a potential answer to the mobile VoIP threat by over-the-top providers like Apple, Facebook, fring (which was recently purchased by telco infrastructure outfit GENBAND) and Google, and a wide array of others. That's because VoLTE can deliver high-definition voice services.

"VoLTE promises to energize both mobile operators and vendors," said Iain Gillott, president and founder of iGR. "Consumers will benefit from the many new multimedia products and services that mobile operators will be able to offer as they transition from legacy voice solutions to the new platform."

Ed Elkin, director of advanced communication solutions at Alcatel-Lucent, says that VoLTE gives the telcos a strong play in mobile voice because with it they can deliver simplicity (all you have to do is make the call, no download required), a solid connection (unlike OTT types, cellcos own and can control the network), existing operator billing, the ability to multitask while on a call, and a high-quality audio and video experience. That's going to be important for the cellular companies, adds Elkin, considering that voice still accounts for more than half of their revenues on average.

"A neat thing about VoLTE is it's more than voice," Elkin says.

VoLTE is more spectrally efficient than the current method of handling cellular voice (for example, six times as efficient when compared to UMTS), so it allows cellular carriers to free up their networks to support more data services. And they can do some interesting new things with services as a result.

He adds that Alcatel-Lucent has VoLTE with APIs (both REST and JavaScript), so developers can build apps for VoLTE. That could potentially include new services leveraging WebRTC technology, and/or services that could help enterprises cut the cord on desk phones since cellular voice with VoLTE becomes so high quality that businesses will no longer need fixed voice services.

Mobile Network Intelligence

For all the advancements the industry has made in terms of mobile devices and connectivity, the networks that underpin all of this are not as sophisticated in some aspects as you might think.

Steffen Paulus, director of product marketing for network management, network analytics and policy control at Alcatel-Lucent, paints the picture by explaining that about a year ago Facebook came out with a new version of its mobile app, and that app created an increase in signaling traffic on mobile networks of about 7 percent. That was bad for cellular network operators because signaling is a scarce resource, he says, it was bad for Facebook and its users because it created a battery drain on mobile phones, especially Android devices. This, he says, is an example of something you would not be able to identify using traditional tools like deep packet inspection and RAN probes, which can recognize an increase in signaling but don't have visibility into apps and devices.

To address this gap in visibility, Alcatel-Lucent has come out with what it calls Motive Big Network Analytics. Motive brings together two existing Alcatel-Lucent solutions and a new offering. One of the existing solutions that comprises Motive is the Wireless Network Guardian, which is now in use by 35 service providers. It offers a real-time, in-context view of application, device, IP flows, network, signaling, and subscribers. That helps network operators optimize and troubleshoot apps, devices and networks, and to understand usage trends. The second existing solutions that comprises Motive is Alcatel-Lucent's Kindsight Security Analytics, which analyzes network traffic patterns to detect malware on customer devices. And the third piece, which is new, is called Big Network Analytics Data Miner and combines WNG analytics with circuit-switched voice and SMS data sources and select IT/OSS/BSS data like billing information, profile, and subscriber data plans to provide analysis that can be leveraged to improve application and network performance, deliver usage information to market staff, and to enhance customer care. IT

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By Dave Nowoswiat

How to Manage the Signaling Impact of LTE Small Cells

Mobile networks are groaning under the heavyweight expectations of our modern mobile lifestyles. Running hard to stay ahead of demand for capacity and coverage, many mobile service providers are finding that adding small cells to an existing LTE network can be an economical and efficient way to ease the strain on the network. But relief for coverage and capacity comes with challenges in signaling.

Small Cells impact EPC signaling volume

Adding small cells to an existing LTE network can have a significant impact on the signaling volume that hits the evolved packet cor. The equation isn't simple though. The impact varies depending on many factors, including:

- the number and type of small cells added;
- how densely concentrated those small cells are;
- whether the small cells are directly connected to the EPC or are connected through a small cells gateway; and
- whether their access mode is open, closed, or hybrid.

Adding a small cell gateway to aggregate traffic from the small cells to the EPC is one design option to avoid some of the signaling increase. But when that is not practical and the small cells are directly connected to the EPC, the volume of signaling – especially on the mobility management entity – becomes a performance concern that demands attention.

Signaling strain on the MME

So what is going on with the MME? The MME is the control plane node in the EPC. It is responsible for:

- security procedures, which include user authentication;
- device to network session management, which involves establishing packet data contexts and QoS parameters for service requests ; and
- idle mode location management, which involves paging and tracking area management procedures.

As more cells (both macro and small cells) are added the signaling on the MME also increases. Studies conducted by Alcatel-Lucent of dense urban areas identified as the top three contributors to MME signaling. The bulk of this signaling is for service requests. These are procedures to set up and terminate the use of services on our mobile devices such as checking e-mail or Facebook, web browsing, uploading a photo or placing a call. Reducing service request signaling is challenging and requires coordination between mobile device manufacturers, application developers, and equipment vendors. Discontinuous reception/transmission and adjusting UE activity timer are examples that can help to reduce this signaling.

The second and third highest signaling volume on the MME is for the idle mode paging and tracking area management procedures. Consider the impact of the small cell on the signaling volume due to paging and tracking area updates. While a handful of small cells added to the network will have little difference to the signaling load, the numbers needed to support the service demands in dense urban areas can have a significant impact.

Striking a balance between increasing capacity and coverage with small cells and increasing signaling on the MME is not as difficult as it may seem. The best option is to reduce the volume of signaling rather than to overbuild network capacity to handle it. There are idle mode features available that can reduce paging and tracking area update signaling as well as extend mobile device battery life.

Turn down the signaling volume with smart paging

Paging can be reduced in small cell deployments by using Closed Subscriber Group paging optimization procedures. CSG paging optimization uses closed mode cell access and closed subscriber group memberships to limit paging. Small cells that have closed access and CSG membership are typically deployed in residential (home) and some enterprises, and it's impractical to include them in a large paging broadcast. When the MME is directly connected to small cells, paging is initiated only to the closed mode cells that have the tracking area and the CSG ID in the UE's list.

Using CSG paging optimizations does not preclude the use of other paging methods used in macrocell networks that page based on service type including voice, SMS, data, or quality of service class identifier. By combining these methods, mobile service providers can reduce the overall paging volume in any deployment scenario across both their LTE macro networks and small cell networks.

Optimize tracking area management

There are still more signaling savings to be had in expanding mobile networks, particularly in the optimization of tracking area management.

Tracking area management updates are triggered when the mobile device crosses the edge of one tracking area into another that's not in its current TA list and so must notify the MME that it's in a different area. TAU signaling can increase if the device moves along the edges of two or more traffic areas and constantly is updating the MME of its location. When a large number of small cells are added they may require a new, separate tracking area or may split the existing tracking area. While a well-planned tracking area network design can alleviate much of this signaling, there are traffic area management capabilities that can reduce the signaling associated with traffic area updates. IT

Dave Nowoswiat is senior manager of product and solutions marketing of the IP routing and transport division at Alcatel-Lucent (www.alcatel-lucent.com).

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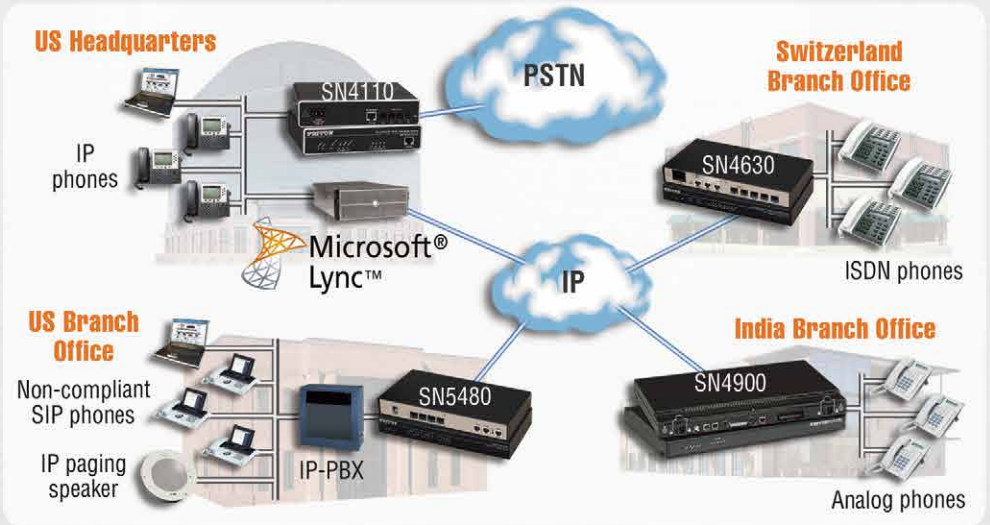

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By Paula Bernier

Lemko Exec Offers Radical New View on Cellular Data Networks

Forget what you know about mobile data networking. The cellular carriers got it all wrong. Actually, forget about the cellular carriers too. The future is in swarming, self-organizing cell sites owned by individuals.

This disruptive view of mobile data networking comes courtesy of Norman D. Fekrat, chief strategy and revenue officer at Lemko Corp., a keynote speaker at the recent Software Telco Congress in Santa Clara, Calif.

Fekrat, whose speech was called "The Consumerization of Mobility", talked about how cellular service providers spend a lot of time discussing the great new opportunities that widespread LTE will deliver, the lack of spectrum availability, and the most efficient way to build networks. Some folks suggest we use orchestration for better network performance and flexibility, he said, but orchestration is complicated; before jumping in, he said, operators need to make sure this approach is worth the time and the trouble.

The first order of business to improve things is to look at the metrics that matter for cellular companies. Financial analysts that follow the mobile industry have it all wrong, Fekrat said, because they're using voice-related metrics like subscriber numbers, ARPU, CPGA, and churn to measure value and risk. The metrics they should analyze are cost per gigabit, profit per gigabit, and to what extent carriers are making a profit on their spectrum.

The problem in the industry is that mobile data, and mobile video, are growing tremendously, and the cost to support that is growing prohibitively, Fekrat noted. That's why broadband operators are offloading traffic to Wi-Fi, he said. So what we should really be talking about – and finding answers for – is how to reduce the cost per gigabit on mobile networks, he said.

Instead, cellular operators have been overlaying 2G networks, with 3G networks, and now 4G networks. But even though 4G LTE is now here, at least in some areas, unlimited data is going away. Costs aren't coming down as networks gain speed; instead, Fekrat said, carriers are offloading their costs on the consumer.

And while mobile operators promote the idea there's a spectrum shortage and lobby for more licensed spectrum, cellcos – which have yet to role out LTE in buildings or rural areas – are not fully monetizing the spectrum they have. At the same time, they're relying heavily on Wi-Fi for offload, he said, which is curious since Wi-Fi runs on unlicensed spectrum.

Fekrat went on to say that there is no value in evolved packet core networks, which he said were engineered as if for voice. Backhauling to a proprietary Layer 2 network just to get to the Internet is costly, he said, on the order of $10 a gigabit. Meanwhile, wireline is around 15 cents a gigabit, he said.

Mobile needs to be more like the Internet, using Internet economics, he continued. CDN and caching work great in wireline, and the wireless camp should use it too, he suggested. Reengineering mobility for Internet economics should also entail applying other IT, IP and wireline principles so mobility isn't so hard, he said. That, according to Fekrat, should include:

- virtualized distributed edge mobility – plug LTE into the Internet (any IP);
- proximal communication and content – enable peer-to-peer communications between cellular radios;
- mobility in motion – swarming, SON, ad-hoc bring your own network; and
- mobility as a service – personalized mobile networking and mobile chipsets.

"The point here is: Virtualize it, don't keep it centralized," said Fekrat. "Enable peer to peer communications. The cell sites should talk to one another," he said. "If we virtualize the whole EPC, we can run it anywhere we want – run it on a silicon chip," he said.

Here Fekrat exposes Lemko's long-term vision. The 10-year-old company sells software that can be used to power 2G, 3G and 4G mobile networks using any air interface running on any spectrum. The Lemko software can run on any hardware, and Fekrat explained that the company's goal is to get the software to run on the cheapest hardware possible. Today that means running on a 1RU x86 blade on the edge of the network. It can also run on an integrated circuit board on the edge. But the ultimate goal is to run the software on a silicon chip, and Fekrat said Lemko is seeking out and negotiating with companies to build such a chip.

Once Lemko gets its software to a silicon chip there's no reason Amazon can't with a Kindle platform sell its own wireless network, said Fekrat.

Despite Fekrat's earlier comments about making cellcos obsolete, it should be noted that wireless carriers such as rural WISPs already are using Lemko's solutions. (The government, including the military, is too.)

To date, Lemko has focused on serving tier 2 and 3 carriers. But recently, and in light of the rollout of LTE, Fekrat said Lemko also is getting a lot of interest in its solutions from tier 1 cellular companies in the U.S. and Canada. In fact, the company already has gone through tier 1 certification in Canada, where a tier 1 is deploying it solution in an effort to monetize its spectrum in buildings and rural areas. The large U.S. cellcos are also looking at using Lemko software to fill and make money on their dead zones and to improve their margins on unprofitable cell sites by replacing equipment at those locations with the Lemko solution.

When asked how this relates to the small cell movement, which is also aimed at filling coverage gaps and addressing in-building coverage, Fekrat commented: "We make small cells profitable." IT

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By Erik Linask

TMC Announces 2013 Product of the Year Awards

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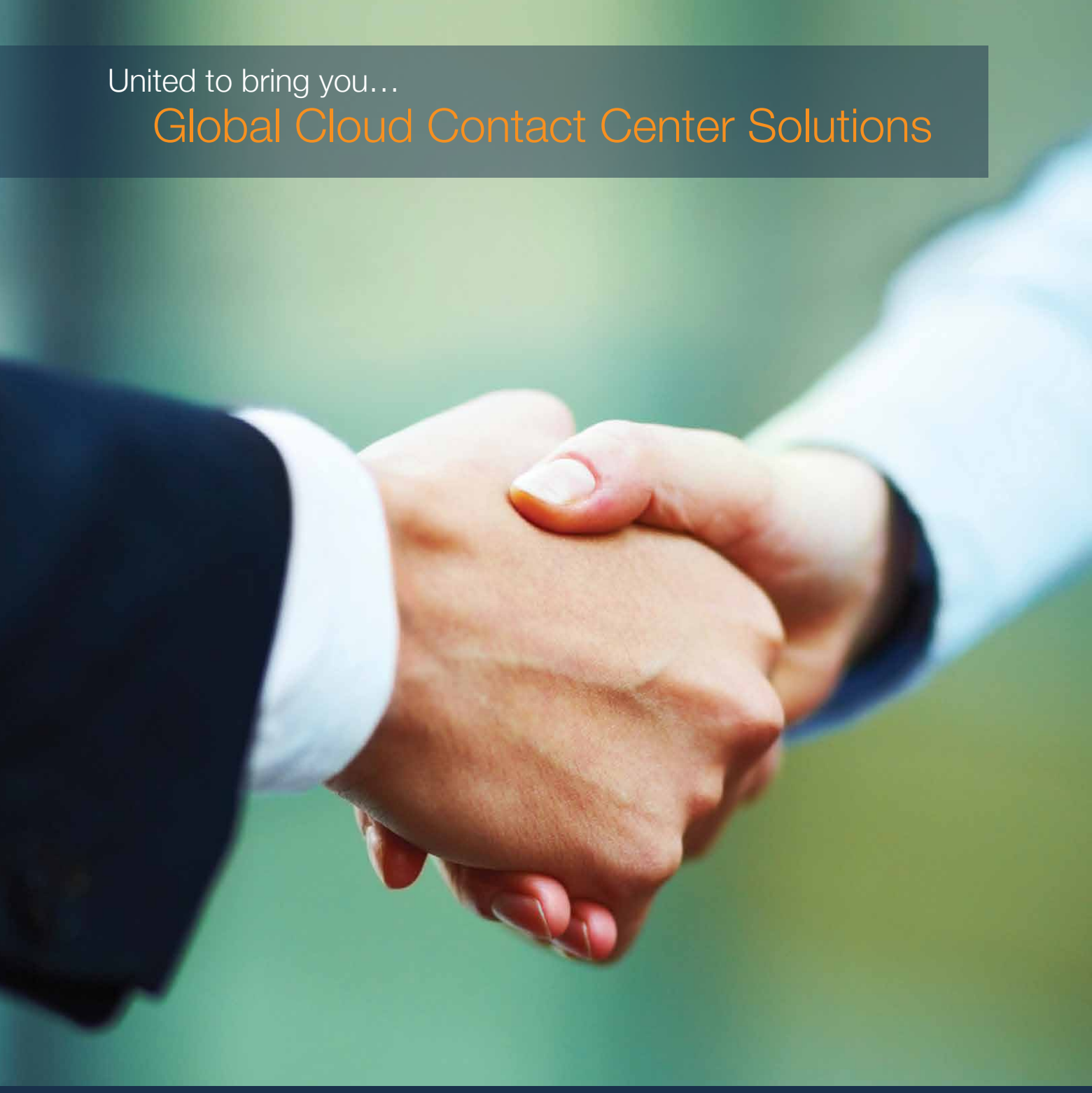

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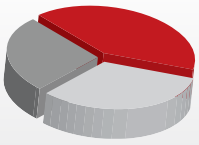

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By Erik Linask

Real Reality TV

The mobile revolution has created what can only be called an age of instant gratification. We have come to expect access to information and content instantly, whenever and wherever we want it. That evolution of mobility and communication has given rise to entire new ecosystems of activity, in the process spawning new industries. Perhaps most notable is the mobile application market.

Mobile apps deliver access to information and resources we've long wished could be available, but until the age of ubiquitous connectivity had not been a viable option. From scores from your favorite sporting events to weather reports and travel conditions and even instant coupons in retail environments, there's little that isn't available on mobile devices. Truly, the mobile device has become an extension of our being.

Until it comes to the broadcast world, where the mobile device has failed to materialize as the so-called second screen that broadcasters dream will become reality. It's not that mobile devices aren't part of our viewing experience – they are. But, the experience is being able to perform other activities while being (somewhat) engaged in our audio or video experiences.

Shazam made a quick splash with its ability to quickly engage listeners, allowing them to easily and quickly identify songs being played in the car, in restaurants, or in any other environment. Honestly, its ability to deliver accurate information even in environments with substantial background noise is impressive, but it has failed in its ability to truly engage listeners or effectively monetize the listening experience. As most other apps, it has become an informational tool.

While its use on the TV screen is perhaps a more engaging experience, in that it has allowed advertisers to easily bring viewers to websites and portals full of information about specific products, it has its drawbacks, including the short timeframe of TV commercials combined with the multi-step process of noticing the Shazam logo, picking up a device, opening the app, and then listening. Many times, the process takes far too long to present a positive experience.

That, says Yangbin Wang, CEO of Vobile, is the challenge broadcasters and advertisers face – they need to find a way to keep viewers engaged and hooked to their TVs, especially in an age of time shifting, where most advertising loses its power.

"Broadcasters are doomed if they lose their live audiences," he says. "Our goal is to use the second screen to help broadcasters keep eyeballs on live programming."

Vobile's idea is to allow viewing audiences to do something they have traditionally been precluded from doing: being participants in programming. For instance, Vobile partnered with Japan's Asahi Corp. on a virtual reality experience, where viewers watching a TV personality catching fish with a harpoon would be able to catch their own virtual fish by logging onto the show's URL and "catching" fish on the screen with their smartphones. It not only created an interactive experience, but also built a potentially competitive environment between viewers reeling against one another to see who could catch the most fish.

It's all done by running its software in real time against broadcasters' content to create live digital fingerprints that allow for the online interactivity.

Imaging being able to balance on a narrow post against Survivor competitors, or to kick a field goal in the last seconds of the Super Bowl, or spot clues to figure out whodunit in the latest episode of Elementary. Such real-time digital interactivity has the potential to ensure live viewership, which also increases advertising value, and similar activities can be built into ads themselves, allowing for special discounts and offers for completing certain activities during commercial spots.

"It's really TV gamification – an extension of your TV viewing – and it draws the audience," says Wang. "The potential is endless."

The potential is the main reason Vobile has just completed its Series-C investment, led by IPV Capital, along with Ivy Capital. Wang says he has been approached previously by potential investors, but now that the market is ready for an advanced viewing experience (and broadcasters and advertisers are searching for ways to ensure live viewership), the time to take on funding was right.

"We want to be the enabler of these kinds of interactive programs, and it's going to take some capital to do it," he says.

Indeed, second screen engagement has never been the issue. What has been is the connection with the first screen. Vobile's hope is its technology will bring a new, highly engaged, viewing experience that will transform the TV from a one-dimensional to a multi-dimensional activity, further engaging viewers and building live viewing loyalty, and ultimately allowing monetization of the second screen for its partners.

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