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Stolen Smartphones, Tech M&A, and More on SDN Precon

Recent stories in the press about the cellular carriers and their position on smartphone theft brought to mind Clairol's famous hair color slogan "Does she or doesn't she?"

The reason why is because, on the one hand, cellular service providers including AT&T, Sprint and Verizon (among others) have aligned with the FCC to create a stolen phone database – which will allow operators to identify and block service to stolen devices. Some of these same carriers also have their own stolen phone databases. But, on the other hand, reports now indicate that wireless service providers and handset makers are not particularly gung-ho about preventing smartphone theft.

A story published in early May sites law enforcement and legal sources who indicate, in the words of The New York Times, "that carriers and handset makers have little incentive to fix the problem."

It would seem that this is referring to the fact that carriers and handset manufacturers benefit by selling replacement handsets when smartphones are stolen.

Here is one excerpt from the article: "The carriers are not innocent in this whole game. They are making profit off this," said Cathy L. Lanier, chief of the police department of the District of Columbia, where a record 1,829 cellphones were taken in robberies last year.

Another source noted by The New York Times, San Francisco District Attorney George Gascon, added that smartphone theft could easily be significantly lessened if handset makers built anti-theft features into the devices.

And Chuck Wexler, the executive director of the nonprofit group Police Executive Research Forum, told The New York Times: "The cellphone industry has for the most part been in denial."

In another recent development, PricewaterhouseCoopers in its Q1 2013 Technology M&A Insights report said that tech M&A decreased 38 percent to 40 deals closed

compared to 65 deals closed in the last quarter of 2012. But it expects more robust deal activity in this space going forward.

"Driven by the global macroeconomic uncertainties, the first quarter of 2013 saw technology deal volume and values drop unexpectedly to a four-year low as businesses prioritized operations above M&A," said Rob Fisher, PwC's U.S. technology industry deals leader. "Nevertheless, strong fundamentals, record cash levels and high equity valuations as well as promising recent announcement make Q1 M&A seem more like a 'pause' than a trend."

Meanwhile, we saw seven technology IPOs in the first quarter of 2013 with total proceeds of just under \$1 billion, according to PwC. That's still below the volume and value of IPOs in the fourth quarter of 2012, the firm reported, but it's nonetheless a strong start to the year. **IT**

SDN Precon will take place Monday, Aug. 26 at Mandalay Bay in Las Vegas. This TMC event precedes ITEXPO Vegas.

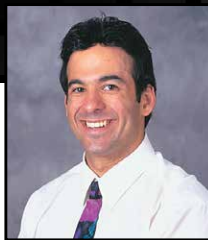
Programming at SDN Precon will include a talk by Ovum's Mike Sapien, who will present his new study on SDN's impact on enterprise services; analysis on various aspects of SDN by Frost & Sullivan's Ron Gruia; an update on SDN work at the ONF; and presentations and discussion from startups like Pica8 to industry giants like Cisco (among many others) on their own SDN strategies as well as SDN's relationship with NFV, with applications, with network visualization, with network programmability and automation, and with overall network – and network provider – transformation.

To check out the SDN Precon agenda visit: www.sdnzone.com/conference/agenda

The SDN Precon speaker lineup is at: www.sdnzone.com/conference/speaker-list

You can also register via the SDNZone.com area on TMCnet.

Clearwater is the Latest Development in Telcos' Software Transformation



The march to a software telco world is progressing nicely.

Communications service providers are at war with OTT providers and need to ensure they are able to battle on as level a playing field as possible. There are significant costs associated with running a major telco, and hardware infrastructure certainly ranks high among them. Sure, OTT providers like Skype and WhatsApp have infrastructure costs as well, but they often leverage standard servers and software to achieve their goals. Contrast this to a telecom operator that typically buys proprietary equipment from a number of specialized manufacturers. The difference in costs between these approaches is quite steep.

This is of course why carriers are pushing equipment providers to provide all of the network functions they supply in software which will run in virtualized instances on off-the-shelf servers. It also explains what ETSI network functions virtualization, or NFV, is all about. Metaswitch Networks has been on the forefront of this trend and hopes to ride the wave into larger carriers worldwide.

To further this push from hardware into software, the company recently announced Project Clearwater, which takes the components of IMS and runs them on standard servers in an open source manner. Some carriers have leveraged open source Asterisk in the past to provide telephony service to their customers; now they and others can take advantage of this new initiative to provide open source IMS as well.

One of the main reasons carriers want to shift their network functions to software is it allows them to select products from a wider variety of vendors. The reason has to do with the costs of developing telephony hardware for carriers. You need phenomenally deep pockets and lots of patience to sell to carriers as an upstart hardware provider. As a result, an amazing number of equipment companies have gone belly up waiting to become adopted by telcos worldwide. Software on the other hand has less cost associ-

ated with it, meaning a potentially higher likelihood of success.

Still, telcos can never be too cautious choosing a company on which to base their networks. One of the benefits of going with an open source project is you no longer need to worry about one company to support it.

I spoke at length with Metaswitch CTO Martin Taylor and he told me the company has learned a great deal from the efforts of many of the players in the social networking and cloud spaces and has taken the best ideas from these players and applied them to a SIP-centric IMS network. Some things the company learned and applied was using DNS as a load balancing technique as well as building massively scalable and resilient solutions in a low-cost manner.

He further explains that carriers that are looking to deploy RCS know they have to compete with OTT providers, and being able to lower the cost of IMS is a huge help in doing so. Metaswitch will supply support and bug fixes such projects.

"Charging for peace of mind really is what it boils down to," says Taylor.

This and supplying additional solutions is how the company hopes to monetize this new initiative, which is free for telcos to use.

This news is a potential game changer for telecom. Carriers once had to grapple with whether to purchase their IMS solutions from the U.S., Europe or Chinese equipment providers. Now they have the option of trying a software-centric, open source approach. They can even try this solution in tandem with other trials going on in their labs.

This kind of disruptive development has led TMC to launch a new event called Software Telco Congress. Be sure to learn everything there is to know about NFV and the birth of the software telco at Software Telco Congress (www.softwaretelco.com), which will take place Nov. 19-21, 2013, in Santa Clara, Calif. I hope to see you there. **IT**



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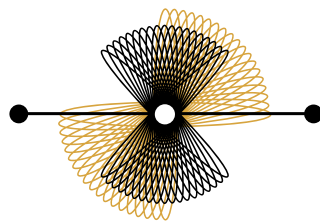


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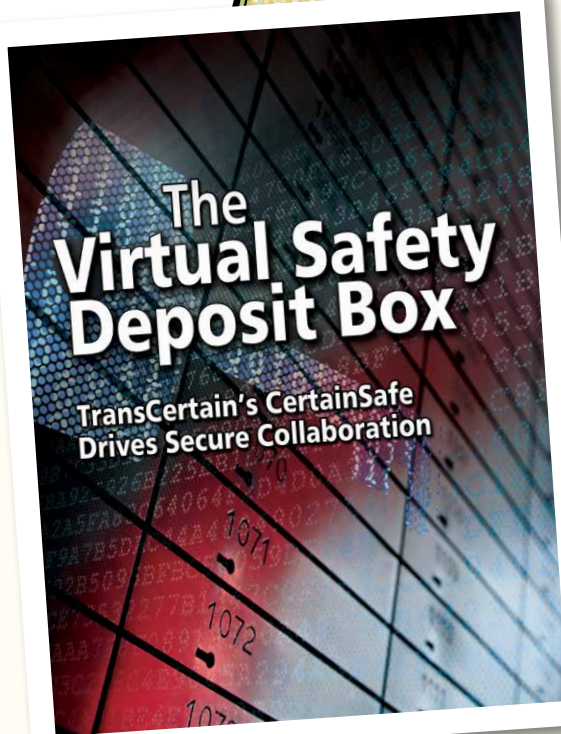
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Key Players Converge in Boston to Share Views on Spectrum Sharing

From April 23-24, 2013, the White House's Networking and Information Technology Research and Development WSRD (Wireless Spectrum Research & Development, or Wizard) group met at MIT to discuss spectrum utilization. Meeting days after the Boston Marathon Bombing and in the MIT Stata Center, the sight of the killing of MIT Officer Sean Collier, one of the panels included Brookline Police Department's Scott Wilder, director of technology and communications, and Don Denning, CIO for public safety for the City of Boston. Both police officers participated in the crisis.

Officers Wilder and Denning explained the key importance of the use of spectrum in helping save the injured at the scene and finding the killers in the days that followed. In particular, Officer Wilder pointed out the role Brookline's 2.4GHz Wi-Fi municipal mesh network and 4.9GHz spectrum played in giving Brookline police officers unprecedented access in their vehicles to computers and video during the crisis.

The 4.9GHz spectrum allowed Brookline officers to move off of cellular data cards, which became unusable, and onto 4.9GHz without interruption. Officer Denning explained the issues regarding the use by Boston officers of cell phone spectrum and police radio spectrum, and the need for broadband on the crime scene. He questioned whether FirstNet would provide the bandwidth needed. FirstNet is the federal public safety entity that is charged by Congress with using the Incentive Auction funds to build a nationwide public safety network. The efficient utilization of spectrum was experienced first-hand by public safety during the tragic week in Boston.

Spectrum sharing policy is being formed in real time. The FCC has three active proceedings all focused on developing our future spectrum policy: the TV Incentive Auction 600MHz proceeding; the 3.5GHz proceeding; and the 5.9GHz proceeding. Each of the proceedings has different spectrum issues. The WSRD meeting discussed the primary goal of creating a spectrum sharing policy today that can be used to frame spectrum sharing in the future.

Led by MIT Professor Bill Lehr, the WSRD Boston meeting including key spectrum academics like Pierre de Vries, economists like Armand Musey and the Brattle Group's Giulia McHenry, attorneys, analysts such as Mark Lowenstein, the spectrum sociologist Mark Cooper, and industry senior representatives from AT&T, T-Mobile, Google, ComSearch, Spectrum Bridge, NTIA, NTRD, National Science Foundation, the FCC, New America Foundation, Marcus Spectrum, and MITRE. Each represented different viewpoints on creating the most effective spectrum sharing and worked for

two days to tease out spectrum sharing issues and policies involved in each of the FCC dockets.

The FCC's 5.9GHz proceeding purported to use 5.9GHz to become the new Wi-Fi with Gbps speeds:

The FCC today takes the first steps to unleash significant additional spectrum to accelerate the growth and expansion of new Wi-Fi technology that can offer faster speeds of one gigabit per second or more, increase overall capacity, and reduce congestion at Wi-Fi hot spots.

Broadband is the primary goal. The secondary goal is protecting existing government, industry, and public unlicensed users in the bands. The FCC's Feb. 20, 2013, proposal for opening up 5.9GHz seems uncontroversial on its face. The FCC proposed creating 195MHz of unlicensed, shared spectrum from 5.35-5.47GHz and 5.85-5.925 GHz. The proceeding is required, the FCC stated, to comply with Congress' directive in the Middle Class Tax Relief Act of 2012 to amend Part 15 for Unlicensed National Information Infrastructure devices to operate in the 5.35-5.47GHz band. Currently U-NII devices are operating in the 5.15-5.35GHz and 5.47-5.85GHz bands.

In 1999, the FCC allocated 75MHz of the 5.85-5.925GHz band for the exclusive use of the intelligent transportation industry. Intelligent Transportation Society of America members have been developing equipment and industry standards for a connected vehicle program using dedicated short-range communications in the 5.9GHz band to deliver information between vehicles and road systems instantly. The specific band would, if assigned exclusively to DSRC devices, take away 75MHz from the DSRC of the 195MHz proposed to be unlicensed in the 2013 NPRM.

Such DSRC systems are vital to changing the death rate on our roads. Using DSRC devices at 5.9GHz, would, for example, give vehicles knowledge of other cars approaching an intersection that were on the other side of bushes or a building. Limited interference and the ability to use non-802.11 standards in the 5.9GHz spectrum has been crucial in the development of these systems. The need for DSRC connected vehicles is real because 30,000 people die on U.S. roads annually, or 250 are killed every three days. Automobile deaths are the leading cause of death for ages four to 34. DSRC and smart cars can lower this number. Millions of dollars of public and private funds have been expended on DSRC systems, all using 5.9GHz. These efforts and funds cannot go to waste.

On the other hand, the spectrum could be more efficiently utilized. Like Officer Don Denning explained at WSRD, every-

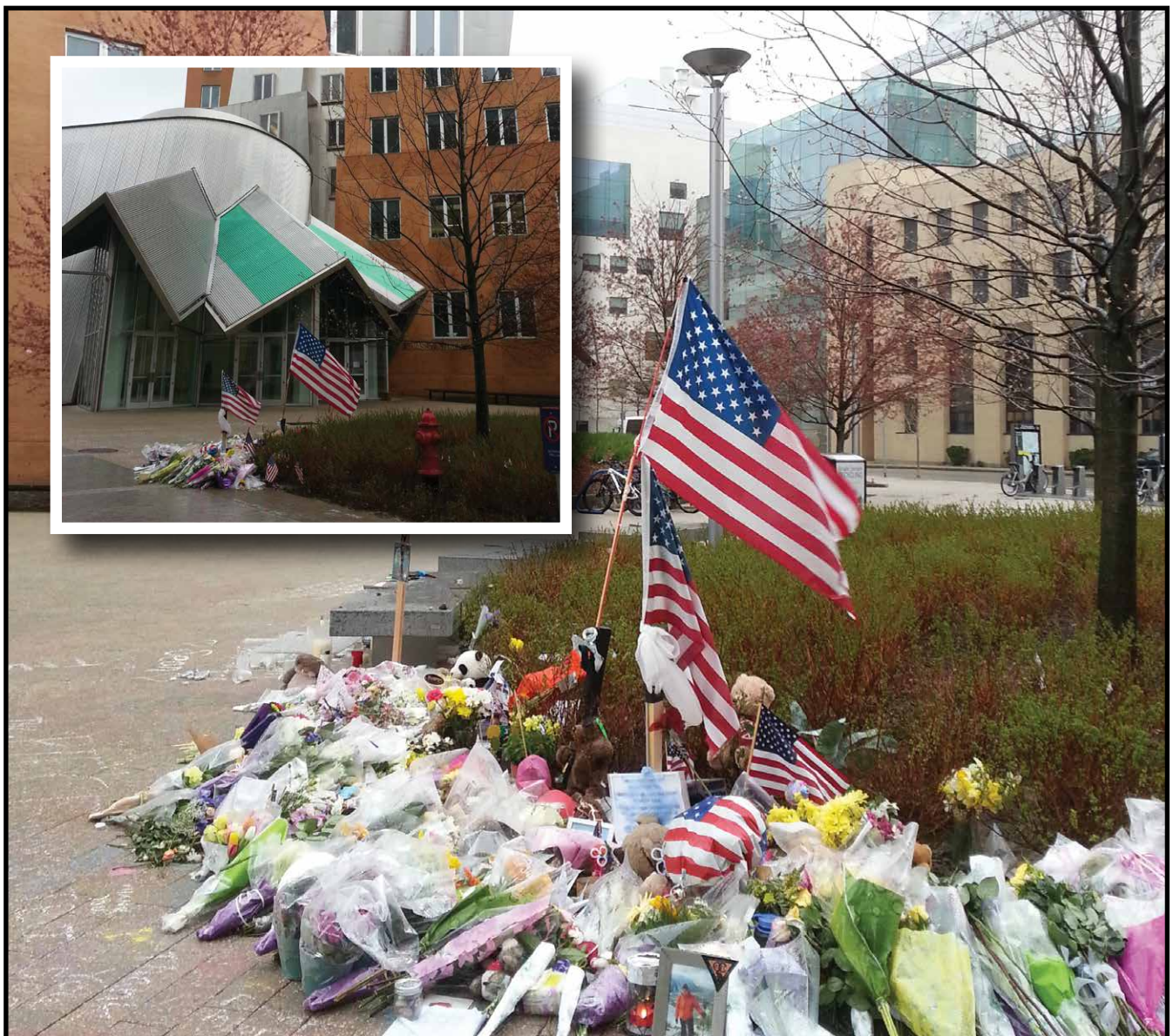
one agrees that the demand for more spectrum is needed for broadband purposes. FCC is struggling to make sure that prior spectrum policy implemented by the FCC like the 50-700MHz TV unlicensed Super Wi-Fi White Spaces use, the 3.5mHz radar and satellite ground station use, and the 5.9mHz connected vehicle program are not interfered with in a way that will cause harm to existing programs.

There is a way to thread the needle, but the FCC will have to consider the best course. The WSRD attendees agreed that the spectrum proceedings before the FCC now will pave the way for the most efficient use spectrum in the future bands. If exclusive

use is granted, spectrum will be underutilized. In some cases priority use of spectrum will work, in other cases new IEEE 802.11 standards will provide a way to run the rapids without interfering, still in other cases the geo-location database model such as from the White Spaces proceeding with strict receiver limits is the answer.

Delay by the FCC will not be helpful, but getting the right spectrum sharing solution is imperative. **IT**

Barlow Keener is the principal with Keener Law Group (www.keenerlawgroup.com) out of Boston.



A diverse and powerful group of people recently met at a Networking and Information Technology Research and Development WSRD (Wireless Spectrum Research & Development, or Wizard) gathering to discuss spectrum utilization. The meeting took place days after the Boston marathon bombing and in the MIT Stata Center, the sight of the killing of MIT Officer Sean Collier.



How Product Developers Can Improve Time to Market

Bringing innovative, differentiated products to market quickly is a top priority for most companies, but delivery often lags behind ambition. To improve time to market, product groups need to more effectively prioritize winning ideas and execute on them, but most lack the processes, tools, and executive buy-in needed to excel.

These are the findings of a recent study of 280 globally-based product development executives who conveyed their top pain points, business risks, software impacts, and process improvements through the lens of resource management and capacity planning.

Commissioned by Planview and conducted by Appleseed Partners and OpenSky Research, the study – How to Improve Time to Market with Existing Resources – reveals that most organizations need to better align and connect products with the corporate strategy as well as ensure that scarce human and non-human resources are leveraged wisely for the most competitive offerings and high-value returns.

Majority of Product Groups in Low- to Mid-tier Maturity Levels

Using a maturity model matrix, the study uncovered that two-thirds of product development groups are in low- to mid-maturity levels with significant room for growth. Lower maturity is characterized as chaotic, with virtually no visibility into incoming demand or insight into what their resources are working on. Higher maturity organizations have achieved a certain level of management control and optimization through having greater visibility into demand and capacity. Even those who identified their maturity level as high said that select processes and prioritization need improvements.

Top Pain Points and Business Risks

In addition to a lack of visibility into capacity and demand, the survey respondents also identified the impact of constant change, which affects assignments and availability, as a top pain point associated with not addressing resource management and capacity planning issues. This leads to business risks that include remaining in crisis mode, the inability to optimize both people and financial investments, and wasting resources on the wrong projects and products.

More than 50 percent of lower maturity organizations perceive that their greatest business risk is delayed time to market, resulting in losses of revenue, savings, user/customer satisfaction, and/or market share. This reduces by more than 10 percent for higher maturity organizations.

Perceived Business Benefits of Improving Resource Management and Capacity Planning

When asked what business benefits they believed their organizations would recognize by improving resource management and capacity planning processes as well as using enterprise software, all participants regardless of their organization's maturity level shared two key expectations: streamlined and accurate resource forecasting and planning; and improved project success and time to market.

Depending on their maturity level, they also want to improve visibility into what resources are working on, optimize the productivity of resources, or improve visibility into capacity.

The Right Enterprise Software Can Make a Difference

According to the study findings, product organizations that invested in enterprise software are 27 percent better off in their visibility into capacity and 22 percent better off in visibility into demand. Significantly, software improved the ability for resources to consistently complete products on time by 6 percent. However, the effectiveness of software depends on having the right supporting processes in place and an executive mandate to ensure its consistent use by all appropriate parties. Also, product groups should ask two key questions when evaluating software: Is it the right software? Is it being used the right way?

Top Best Practices of Mature Organizations

The study shows that having a strong foundation of software, process, and executive support enable product organizations to achieve a more complete picture of capacity and demand, which results in optimized resources, stronger company bottom lines, better market share and brand awareness equity. Adherence to best practices is critical. The most mature organizations recommend three top best practices: better prioritization of products and resources in line with strategy; performing what-if analysis on capacity plans to determine the best use of resources and for risk mitigation; and establishing and communicating processes – a powerful first step is to leverage executive mandate to ensure that processes be improved and adopted across the enterprise.

In addition, mature organizations have insight into what people are working on, have a dedicated function to lead resource management and capacity planning activities, estimate projects well, and use product portfolio management software to optimize their resources. **IT**

Linda Roach is vice president of marketing at Planview (www.planview.com).



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Big Data, Big Opportunity for the Contact Center

New channels for communication have empowered customers to take more control of the conversations they have with brands. But at the same time, this has also increased service expectations. While some companies would argue this creates customer experience challenges, it also offers opportunities for organizations to deliver differentiated customer experiences and better meet consumer demand.

According to an Aspect survey, 77 percent of Americans think companies that offer multiple channels as part of their customer service are easier to do business with, and 74 percent say they provide better service. Each time a customer interacts with a company, whether it's a Tweet, Facebook post, phone call or discussion board comment, valuable information is shared. Consumers have the expectation that the information from those exchanges are recorded and shared from channel to channel so they don't have to repeat to a live agent what they shared earlier in the week on an IM. Many companies trail the consumer when it comes to managing this information.

The good news is that the ability to capture data is increasingly becoming less and less difficult. Instead, the process of cutting through the incredible volume, velocity and variety of data to find what matters and make that actionable for the enterprise is today's challenge. In fact, over half of customer service strategy decision-makers stated they struggle with data and that creating a single view of customer data and information is one of their biggest challenges (according to a Forrester survey commissioned by Aspect Software). Without the proper understanding and application of the data collected from these conversations, the collection of it becomes almost pointless. Parsing and sharing customer data and making it easily accessible to any employee who engages with a customer is a real challenge.

After data capture, applying effective business rules that simplify things like identifying the reasons for repeat customer calls or how certain call types are being resolved is essential. When a contact center implements precision monitoring and recording classification and evaluation based on call resolution types, recording can be graded to identify root causes and ultimately, to alter processes and behavior that increase first call resolution. This applied knowledge produces a complete, consolidated view of the contact center's operations, including both quality and performance metrics, and allows the organization to uncover best practices and opportunities for improvement.

Broader participation is the best way to make a continuous improvement loop. Companies should get agents involved in the process by enabling them to flag the interactions they want to record and review, and provide opportunities for self-evaluation and supervisor co-evaluation. This empowerment not only fos-

ters agent buy-in for self-improvement, but also ensures quality is not just a top-down initiative. Making customer feedback a part of the quality process is another opportunity by using integrated survey capabilities to measure satisfaction with interactions. If organizations can leverage their quality systems to capture feedback, it helps ensure that interaction context is maintained, and allows you to use the results to instantly inform KPIs within reports and dashboards as well as alerts and coaching workflows.

How can organizations make this happen? The first thing is for companies to look at where their communications and workflow bottlenecks are and begin to think about how to introduce smarter, automated, business processes. Through our research and customer conversations we've found that many of these workflow issues happen because of a disconnect between a company's contact center and its workforce optimization activity. Unifying the contact center with the back office creates an environment where information is easily and seamlessly shared creating greater business efficiencies. In fact, our research has shown that inefficiency and errors in the back office have been shown to drive up to 20 percent more agent interactions in the contact center.

From a broad perspective, companies need to shake the notion that the contact center is an inward-facing, savings-oriented cost center. Technology makes it possible, and competition makes it necessary, for the contact center to become an active contributor to revenue goals. Efficiency is no longer enough. To succeed in a fiercely competitive global economy, businesses have to realize that a contact center can be a profit center and can make significant contributions to the bottom line by fostering customer satisfaction and loyalty, winning new business, and increasing revenue.

To transform the contact center from a cost center to a profit center, managers have to consider every type of contact center system: contact routing applications, interactive voice response systems that deliver self-service, workforce management software, and tools for reporting and analysis. And while these are good tools for keeping the cost of communicating with customers down, the technologies also offer new capabilities that can go beyond cost savings and directly support enterprise goals such as expanding business reach and building new revenue streams. Perhaps more important, businesses need to look at the way these systems work together. Tight integration can substantially increase the potential of each individual application while making the contact center function a results-driven, unified whole. **IT**

Spence Mallder is general manager of workforce optimization and CTO at Aspect (www.aspect.com).

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Now You Want Me to Collaborate? Leave Me Alone!

As the namesake of this column implies, I'm trying to address themes that will give you cause to re-think how you use and invest in communications technologies. Collaboration is definitely one of those themes, and I want to come back to how this looks from the employee's point of view.

I have two basic ideas to explore, and each will get its own treatment over the next two columns. For this month, I'll look at how collaboration can add unwanted stress, and in my next column I'll touch on how the personalization of consumer technologies is impacting the way employees think about collaboration.

As an example, just think about presence. In many ways, it's the driver for UC, especially collaboration. More often than not, however, presence is a distraction or even an unwanted interruption. Presence may be at everyone's fingertips and is often the springboard to multimodal collaboration, but it's really only effective when all said parties want to use it.

When used for its intended purposes, presence speeds up workflows, but like a lot of new tools, it cuts both ways. The flip side is making yourself too available, and in no time you're drowning in information overload, and requests for meetings that suck time and energy out of your day. Of course, you can

Context is a complex topic, and that's why nobody has really figured it out yet, but when that happens, UC will truly make teamwork better across the board.

I have often noted that IT may be the economic buyer for UC, but employees are ultimately the end users and need to be co-opted along the way. The amorphous nature of UC makes the value proposition difficult to understand for IT, and the use case a bit tricky for end users to grasp. Nobody consulted end users about what an ideal UC solution should look like or even if they wanted it in the first place.

As such, even though IT may have struggled for months to settle on a solution and approach to deploying UC, it usually appears out of the blue when pushed out to employees. In essence, you may hear them saying "I never asked for this" or "I'm having a hard enough time keeping on top of e-mail". If this is how they react to new technology, how do you expect them to embrace the lofty ideal of collaboration via UC? IT is not normally in the business of reading people's minds, and just because they want UC, doesn't mean employees do. As such, the success of UC may largely depend on IT's ability to get end users amped up to use it.

Everyone knows that improved productivity is a good thing, so that doesn't need explaining. However, for UC to be effective, employees must, to some degree, become adept at multichannel communication. While younger workers are more attuned to this, most research will show that people don't multitask very well. Not only aren't we very good at it, but employees generally don't see a bump in their pay for taking on this extra stress. As such, if you take a steamroller approach to deploying UC, don't be surprised to get this kind of pushback.

manage that by being proactive with your settings, but this also means you can simply turn presence into a gatekeeper to shut out this activity and peacefully get on with your day.

This may be oversimplifying things, but most presence engines lack context to make them truly valuable, and by extension this is a holdback for UC. If every task required collaboration, we wouldn't have this problem, but most work is self-managed, and employees can actually be quite productive if just left alone. Management and UC vendors don't want to hear that message, but a balance is needed between pushing the limits of collaboration and letting employees do their own thing — easier said than done, for sure.

In that regard, UC vendors will be more successful when they can minimize the unwanted attention that presence brings. Real-time tools are great for speeding up business processes, but they also allow people to disengage just as fast when they feel taken for granted. Context is a complex topic, and that's why nobody has really figured it out yet, but when that happens, UC will truly make teamwork better across the board. This takes us into the realm of big data and predictive analytics, both of which are finding their way into the UC ecosystem, and in future posts I'll explore why this is a good thing. ■■

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



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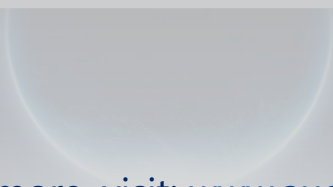
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A Hype or Disruptive – Will WebRTC Have an Impact on the PBX and SIP Trunking?

WebRTC is Google's initiative to bring multimedia or real-time person-to-person communication – RTC – directly into the web browser. Although it may be a year before the IETF and W3C standards are in place, WebRTC is already available in Google's Chrome and Mozilla's Firefox browsers and applications are emerging.

WebRTC-ready browsers are able to "talk to each other" with HiFi-quality sound and HD video – which is telepresence quality – with fallback to ordinary 3.5kHz telephony voice. However, there is no signaling protocol defined – no SIP, no phone numbers, not even a WebRTC address. The idea is that the parties already are in contact, e.g. chatting on Facebook and then decide to talk or have a videoconference. Or you send an e-mail with a URL, asking your

friend to click on that link at 3 p.m. when you are available for a call. Another application is click to call on the company or call center web page. Why stretch out for a phone once you've found a telephone number, instead of just clicking on the Support and Sales buttons?

The last application is obviously something that must be integrated into an enterprise PBX or UC solution. Another application is to have the web browser as the softphone for the PBX, available on any Internet-connected device with a browser. That will increase the enterprise UC usage, both on the LAN and for home workers and road warriors.

These applications imply that PBXs and UC solutions will come with WebRTC-

to-SIP gateways and those may be part of the SIP trunking solution. There are also NAT/firewall traversal issues to handle with WebRTC (as with all RTC traffic as we know from SIP). WebRTC is over the Internet or OTT and competes for the bandwidth with data traffic, so there must be QoS handling in such solutions, especially considering the potential HD quality.

At the WebRTC conference in Atlanta we saw these kinds of solutions, integration of WebRTC with the enterprise PBX and UC solutions appearing. WebRTC will improve and be a necessary part of the enterprise UC and SIP trunking solution. **IT**

Karl Stahl is CEO of Ingate Systems AB (www.ingate.com).



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Programmable Security

Whether it's cloud, BYOD, or just highly mobile applications deep inside the data center demesne, the reality today's security professionals operate in is volatile.

Applications, users, devices, and data are constantly in flux; even IP addresses, once solid points of light in an otherwise dark data center, are on the move. Security policies, whether focused on network or application access, user or application-generated data, must be dynamic and flexible enough to keep up to the constant myriad of changes. To not do so risks havoc and frustration when users can't access applications or check e-mail, or find their mobile device suddenly devoid of all data due to an unintentional policy violation.

Modern security policies must necessarily focus on securing data and applications without relying on topological constraints that may or may not exist in the future (or in the next five minutes, for that matter). As applications cross the data center-cloud boundary and also migrate onto mobile devices, such constraints only serve to confuse and complicate attempts to lock down resources. Rather it is increasingly the case that security policies must match user, location, device and resource to determine whether or not access should or should not be granted.

Traditional solutions relying on fixed topology to provide security services are as out of place in today's virtualized, mobile world as a vegan at a steakhouse. Firewalls and simple web access control solutions rely too much on

network variables and flowchart-based policies that may appear flexible, but are merely a thin veneer of easier configuration of the same, hard-coded policies that break when a new variable is encountered.

Programmability, touted as one of the more beneficial aspects of software-defined networking, is as applicable to security as it is to the network. Programmability of security policies enables greater flexibility with a higher degree of granularity than previous incarnations of security policies. The

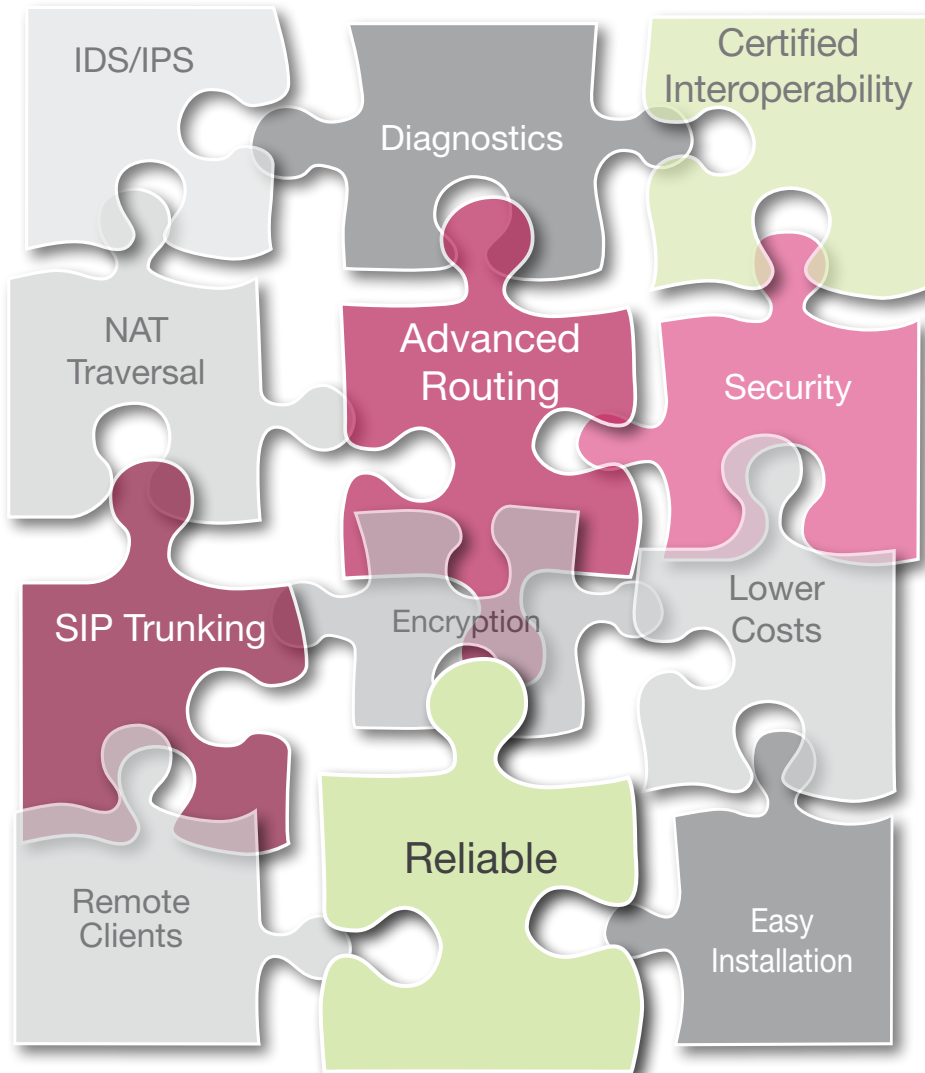
flexibility inherent in being able to apply security policies or make decisions based on external data far outstrips that of static identity store query access. While certainly being able to extract from Active Directory or LDAP attributes about a user is useful and an important piece of the overall puzzle, being able to extract from any source that can provide the information necessary is even more beneficial to crafting the types of policies that are truly robust and active themselves.

Programmability in the network isn't just for configuring switches and routers or processing packets. It's a higher-order function that enables agility in the data path on which security necessarily interposes itself. By taking advantage of programmability in the data path, security policies can become more active, more flexible and more able to deal with anomalies that are not attacks, but rather changes in access patterns caused by the increasingly mobile world in which users operate. **IT**

Lori MacVittie is senior technical marketing manager at F5 Networks (www.f5.com).

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By Jeff Hudgins

The Ivy Bridge Impact on New Server Appliances

The Ivy Bridge CPU micro-architecture is a die shrink of today's Sandy Bridge CPU. The faster Xeon E5 and E7 chips, which are based on Ivy Bridge, will be made using the 22-nanometer process. This new Xeon chipset will certainly bring performance, but will also showcase improved power efficiency and security.

The Xeon E5 chip is for mid-range servers with up to four sockets and will come with up to eight cores, while the Xeon E7 chip is targeted at high-end servers and will have up to 12 CPU cores. The Xeon E5 chip will draw between 60 and 130 watts, and servers with Xeon E5 can carry up to 768GB of memory. The Xeon E7 chip, which will be Intel's highest performing server chip, is designed for servers with up

to eight sockets and 4TB of memory (nearly triple the memory capacity of its predecessor). The Xeon E7 chip includes 30MB of L3 cache and draws up to 130 watts of power. The gains in improved power efficiency and performance will allow data centers to build out more telecom networks and expand their storage capacity while taking up even less foot print. And with space and power at such a premium within the centers, the impact is dramatic to their profitability.

The Ivy Bridge micro-architecture will also bring a new random number generator. Cyber security concerns within the data center continue to grow, and this new RNG release brings a new level of hardware-based security. Software-based RNGs can be hard to build and

test, often difficult to use, and still may not work correctly. That's why security-oriented processors usually contain a dedicated hardware RNG, even though most general-purpose cores do not. Now Intel has included a hardware RNG on its Ivy Bridge processors

So what's the final score? Ivy Bridge does not have the limitations on memory and power that Sandy Bridge has and is sure to be a game changer for solution providers that are hitting design margins in these areas. While any technology transition can be painful, this one appears to be very little pain for a lot of gain. **IT**

Jeff Hudgins is vice president of product management at NEI Inc. (www.nei.com).

Regulation Watch

Proposed Rural Call Completion Rules Would Impose New Reporting and Data Retention Obligations on VoIP Service Providers



By William B. Wilhelm and Daniel P. Brooks

The FCC recently released a Notice of Proposed Rulemaking aimed at improving the completion of long-distance telephone calls to rural customers. The proposed rules would impose new reporting and data retention obligations on facilities-based originating long-distance voice service providers, including over-the-top interconnected VoIP service providers and (potentially) one-way VoIP service providers.

If instituted, the proposed rules would require covered service providers with more than 100,000 retail long-distance subscribers to measure and report on a quarterly basis call answer rates to rural operating company numbers with at least 100 call attempts per

month compared to the overall call answer rate for non-rural call attempts. Covered providers would also be required to retain for a six-month period detailed records of each long-distance call attempt, including the calling party number, called party number, and date and time of the call; whether the call attempt was handed off to an intermediate provider; whether the call attempt was going to a rural carrier; whether the call attempt was interstate; and whether the call attempt was answered. The rules would also prohibit originating providers and intermediate providers from causing audible ringing to be sent to a caller before the terminating provider has signaled that the called party has been alerted.

The NPRM is likely to be of particular interest to over-the-top interconnected VoIP service providers, which would be included as covered service providers under the proposed rules. The FCC has also sought comment on whether the rules should extend to other categories of providers, such as one-way VoIP service providers. The FCC collected comments on the NPRM in May 2013, and is now considering final rules likely to be released later this year. **IT**

William B. Wilhelm is a partner, and Daniel P. Brooks is an associate, at the global law firm of Bingham McCutchen LLP (www.bingham.com).



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SDN – Don't Believe The Hype

Wikipedia says software-defined networking “is an approach to building data networking equipment and software that separates and abstracts elements of these systems. SDN allows network administrators to have programmable central control of network traffic without requiring physical access to the network’s hardware devices... SDN decouples the system that makes decisions about where traffic is sent (the control plane) from the underlying system that forwards traffic to the selected destination (the data plane).”

Listening to every vendor that has rushed in to this new space to attempt to own the definition of SDN and control the minds and direction of the industry brings about memories of the title of a classic Public Enemy jam, “Don't Believe The Hype”. What ever you do, don't, don't, don't believe the hype!

Let's break down the definition of SDN and put it in plain terms.

SDN is an approach (a way, a path, a philosophy) to building (build your own) data networking equipment and software that separates and abstracts elements (deconstructs in to its elementary subcomponents to isolate and standardize to reach the control and the lowest unit and overall cost possible) of these systems.

SDN allows network administrators to have programmable central control (it is all about control of everything) of network traffic without requiring physical access to the network’s hardware devices (making the hardware simple, dumb and inexpensive).

SDN decouples the system (breaks apart the hardware from the operating system) that makes decisions about where traffic is sent (the control plane) from the underlying system that forwards traffic to the selected destination (the data plane).

To put SDN in proper perspective using a real-world example just think about open source and what impact the concept of open had on closed systems. Remember what Linux did to IBM and what Asterisk did to the PBX – Nortel, Avaya, etc. In the case of Asterisk it made the PBX an application on a server rather than a proprietary operating system on proprietary equipment. Now consider optical and Ethernet transport equipment and routers: how they are built, how they operate and who builds them. Imagine a world where a DWDM optical switch was a standard chassis filled with standard cards and form pluggable lasers all being controlled by an open source operating system running on a standard, generic server. Imagine the same simplicity, interoperability and standardization for an Ethernet switch, or router. Given the precedent, it might not be that difficult to imagine.

This might seem like a large undertaking without a particular center of gravity to push the agenda of change – and then there was Facebook and its Open Compute Project.

On Wednesday, May 8, Frank Frankovsky, chairman and president of the Open Compute Project had this to say: “A little more than a month ago, the Open Compute Project celebrated its two-year anniversary. When Facebook first launched the project, it was our hope that we could spark more conversation and more collaboration around the development of efficient data center technologies. The OCP community has since grown to 50-plus official members and thousands of participants; we've launched a foundation to guide the project; and we've started to advance open designs for everything from racks and storage boxes to motherboards and interconnects.

“This is amazing progress in such a short span. But something's missing. We are working together, in the open, to design and build smarter, more scalable, more efficient data center technologies — but we're still connecting them to the outside world using black-box switches that haven't been designed for deployment at scale and don't allow consumers to modify or replace the software that runs on them.

“With that in mind, we are today announcing a new project within OCP that will focus on developing a specification and a reference box for an open, OS-agnostic top-of-rack switch. Najam Ahmad, who runs the network engineering team at Facebook, has volunteered to lead the project, and a wide variety of organizations — including Big Switch Networks, Broadcom, Cumulus Networks, Facebook, Intel, Netronome, OpenDaylight, the Open Networking Foundation, and VMware — are already planning to participate. Work on the project will begin in earnest at the first-ever OCP Engineering Summit, being held at MIT on May 16.

“It's our hope that an open, disaggregated switch will enable a faster pace of innovation in the development of networking hardware; help software-defined networking continue to evolve and flourish; and ultimately provide consumers of these technologies with the freedom they need to build infrastructures that are flexible, scalable, and efficient across the entire stack.”

SDN is an effort to unify and homogenize internetworking completely by opening up the actual network in between the servers the reside within disparate data centers which will enable and unlock the capabilities that the virtual machines running on those servers in the global data centers already possess. In order to do that the networks must be taken over. It is not an easy task and will require more than just control of the equipment to make it work. It will also require control of the underlying dark fiber. False media, by design, or by default will cloud judgment and give way to bad decisions. If you don't want to get caught on the short end of the equation just don't believe the hype. **IT**

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

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Is All DPI Created Equal?

The main function of deep packet inspection platforms is to classify data traffic so that network activity can be monitored or acted upon. Basic network monitoring enables owners to analyze throughput levels to manage traffic. However, the first measure of DPI equality is: What level of awareness is possible when reporting on throughput conditions? In other words, can the platform understand traffic from the perspective of a subscriber/user, location, or device; or application usage, property, QoE, and category? This is important in understanding how both mobile and fixed broadband subscribers are using a service provider's network.

Traffic flowing through a DPI platform needs to be continuously analyzed in multiple ways with minimal impact on latency.

DPI platforms analyze network traffic in different ways, much like a fingerprint or DNA database where patterns of classification are pre-established. This information is referenced against a criminal suspect to determine if there's a match. If you think of a data traffic session as a lineup of suspects, a fingerprint-like mechanism called signatures is used to help identify and classify traffic in real time by examining Layer 7 packet information. Just

as with fingerprint/DNA classification schemes, signatures need to be updated constantly to improve classification success rates. Just-in-time signature database updates improve accuracy, thereby increasing cost savings or revenue capture for subscriber-based network services.

It is not enough to classify traffic by website URLs alone, since the mechanics of the access are the most important aspect to classify. Traffic flowing through a DPI platform needs to be continuously analyzed in multiple ways with minimal impact on latency. All packets contain information regarding source and destination IP address, VLAN ID, port and protocol. To create a context of usage, packets are associated with user-initiated sessions that occur over time that can help signature mechanisms understand a pattern of access. Analyzing these session connections in the context of protocol behaviors determines the type of traffic, which can include HTTP, FTP, BitTorrent, SIP and hundreds of other protocols. Other properties of classification are established by examining the information within these packets, such as the SIP calling, IRC channel, or FTP file transfer name.

Advanced traffic classification functions include the ability to detect and classify session flow behavior as random looking protocol behavior, downloads, streaming, or interactive. Session analysis logic that identifies connection patterns such as authentication and login sequences is also possible, and can detect intentionally evasive traffic behavior by identifying varying packet size, distribution, and patterns over time. All of this combines to help network operators achieve a very high percentage of accurate classifications for all traffic monitored.

The second key question is: How do DPI platforms enforce policies based on traffic classification? Policy platforms formulate actions that need to be enforced, and DPI identifies the traffic for enforcement mechanism. In the example of a mobile family service plan, DPI tracks data usage in real time across multiple devices, enabling policy platforms to determine when a subscriber has reached his or her data limit. Without DPI, this would be impossible. Once limits are reached, the DPI platform can notify the policy platform for the subscriber to be warned or presented with a data quota upgrade option in real time. The policy platform's role is to interface to OSS/BSS systems in a service provider network to get information about the service plan, identifying each device and its associated data quota to create policies that establish the boundaries of the service. Acting on the conditions met by classifying the traffic can result in limiting bandwidth, packet rate, or connection rate when users surpass limits. It can also prioritize traffic where certain usage is favored or filter traffic, selectively accepting, rejecting, dropping, re-writing, or diverting (steering) it. All of these policies and actions in concert are the basis for DPI-based policy management monetization.

In mobile and converged networks, 3GPP network policy and charging control components include the policy and charging rules function, policy and charging enforcement function, online charging system, and offline charging system. In this ecosystem, the DPI platform interacts with these network elements as the PCEF – the enforcement function.

All DPI platforms are not created equal. In fact, DPI is typically designed to handle specific network applications, especially DPI functions integrated in a dedicated network element such as a router or GGSN. This narrows its classification abilities, since performing unnecessary actions would steal compute cycles from the component's main function. For stand-alone DPI platforms, all classification schemes are not the same. You wouldn't want people driving through traffic lights on a red signal and stopping on green. Getting traffic classification wrong can mean enforcing a policy at the wrong time and living with either the increasing network costs of addressing congestion, or the service revenue leakage that could be avoided. **IT**

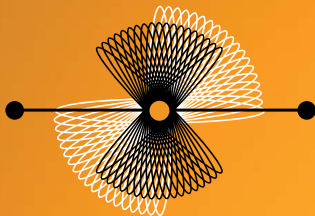
Ken Osowski is director of solutions marketing at ProCera Networks (www.proceranetworks.com).

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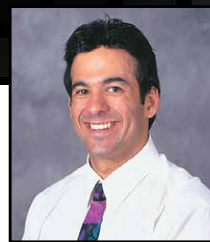


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Why Should You Listen to Our Advice?



By Rich Tehrani & Max Schroeder

The idea for this column began with a conversation between the two of us at ITEXPO West 2005 in Los Angeles. 2005 was the most active hurricane season in recorded history, and the devastation caused by Katrina was on everyone's mind. 2005 was also a turning point for IP telephony as, for the first time, more IP telephony systems were shipped than TDM phone systems.

We understood that too few organizations did not grasp the impact of emerging IP technologies on business continuity/disaster recovery designs. For example, companies could now reduce operating costs by implementing an IP PBX including a more robust feature set plus get a piece to their BC/DR plan puzzle in the bargain. Other emerging technologies appropriate for BC/DR could increase workforce mobility, provide regulatory compliance and improve productivity.

An integral part of our BC/DR equation included SaaS and other cloud services. In 2005/2006 many people were still skeptical of cloud services due to the dotcom crash of 2002. The Nasdaq Composite had lost 78 percent of its value and many Internet startups had gone down the drain. However, we persisted in defending the model as perfect for BC/DR planning despite some phone calls from investment "experts" questioning our support of the cloud model.

From the outset, this column emphasized that, statistically, major disasters like Katrina were the exception. More common occurrences like electrical outages and security breaches caused most business interruptions. However, the major Northeast storms of the past few years that struck our home area were a reminder that a good BC/DR plan must also factor in major events. Fortunately, our plan was solid, and TMC remained operational during these tragic events.

With the advent of new technologies that make bring-your-own-device meetings possible, security concerns are more important than ever. Recent government unease regarding cloud solutions for regulations like HIPAA increase the importance of security to a BC/DR plan. Again, TMC is leading the way with a new event, SecureIT: Protecting Your Enterprise in a BYOD World at NYU Kimmel Center in NYC this July. ITEXPO Las Vegas, Aug. 27-29, 2013, will also address these risks.

So why listen to our advice? Because we did, and it worked for us. **IT**

Max Schroeder is the senior vice president of FaxCore Inc. (www.faxcore.com). Rich Tehrani is the CEO and group editor-in-chief at TMC, and conference chairman of ITEXPO.



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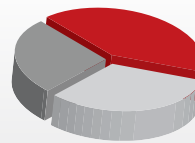
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The Benefits of Software-Based Session Border Controllers

Right now, SBC hardware is implemented at the edges of IP-based networks. While it might seem unlikely for a critical hardware node to morph into a piece of software, the reality is, software-based SBC's are becoming more viable in the multimedia network – both with service providers and within the enterprise.

Beyond the physical: SBC goes virtual

In a typical scenario, SBC hardware sits on the border of two IP networks, with IP connections on both sides of the box and a physical connection to an IP network. However, that physical connection doesn't have to be at the exact demarcation point. In fact, it doesn't even have to be part of the SBC box. Some other device could take care of the physical IP connection, and the IP data stream could then pass through a software-based SBC function that resides elsewhere. For example, a software-based SBC could be resident in a commercial off-the-shelf chassis, where network interface cards handle the connection to the IP network. A series of single-board computers could go into the chassis where the software-based elements could run as an application. The software-based SBC could be connected to a single-board computer in a virtualized environment, or as part of a few applications in a 1U or 2U platform. Ultimately, it could also be in a cloud environment. The actual physical NIC could be thousands of miles away from the SBC software.

When the software-based SBC is on a single-board computer in a common chassis with multiple other network nodes, users can realize significant cost savings due to the need for fewer hardware chassis. There would also clearly be a reduction in sparing costs, since the COTS components are less expensive and more commonly available, obviating the need for additional on-site sparing.



Keeping up with voice

Another important consideration is the increase in service velocity. New services are being rolled out more quickly, and agile network elements must be able to keep pace. Software-based network elements enable this nimbleness, due to ease of scalability and the power to add new functions, such as transcoding, on the fly. Media and multimedia transcoding will be required for the next-generation SBC, since an SBC is basically an IP-IP gateway. Transcoding is necessary, since it's required in a TDM-IP gateway. It's simple if you think about it from that perspective.

It's likely that the needs fulfilled by the SBC will continue to evolve over time. At the moment, the need to transcode HD voice codecs is based on converting it to the more regular codecs. But in the future, we'll see video transcoding needed as well. Even if it appears that video transcoding is covered, what about when the H.265 video codec comes out in roughly a year? Will you need to buy a new SBC hardware box to cover that? Wouldn't it be more cost effective to upgrade a piece of software instead?

We should also consider the WebRTC impact on SBCs. There is transcoding required because the WebRTC audio and video codecs are different than

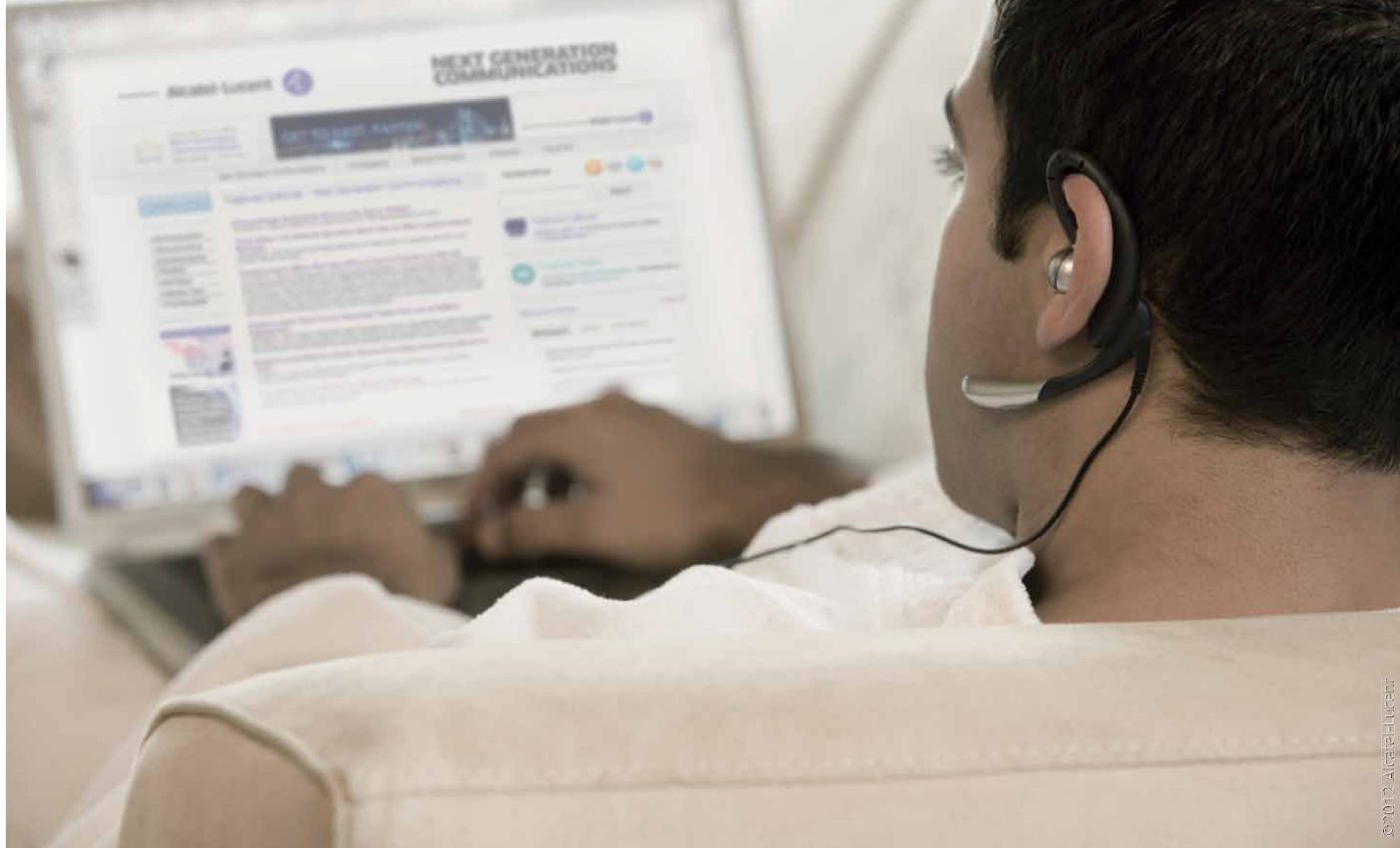
those used in networks today. But HTTP-to-SIP signaling conversion is required. Having a piece of software would make this support much easier.

Software SBC for the enterprise

For enterprises, software-based SBCs offer many of the same benefits as above, especially in relation to WebRTC. Many predict that WebRTC will see its earliest widespread deployment in the enterprise. Integration of enterprise apps, whether WebRTC apps or not, could be a differentiator with a software-based SBC. With its ability to scale down, the software-based SBC offers a cost-effective alternative to SBCs that are either too expensive for enterprises or offer too much in terms of session capability.

Software-based SBCs are convenient, cost-effective and scalable. But can they do what hardware-based SBCs do? Obviously, that is dependent on your supplier, but theoretically, there is no reason why a software-based SBC cannot handle the same functions as hardware SBCs. As voice technology continues to transition to software, you don't have to lose functionality. Just be sure you're partnering with experts in this software-ization of hardware. **IT**

Jim Machi is vice president of product management at Dialogic Inc. (www.dialogic.com).



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CertainSafe, the Virtual Safety Deposit Box, Drives Secure Collaboration

TMC Labs learned about a new product launching by TransCertain called CertainSafe that could be a game changer when it comes to cloud-based collaboration. Fortune 1000 companies and indeed even smaller companies are reluctant to put their most sensitive and confidential data in the cloud to be shared with their partners and customers. But what if you could encrypt the data in the cloud using AES256 encryption or any encryption algorithm of your choice, and combine that with "tokenization"? Further, what if you could share certain folders and files with specific people using just a browser and, with no plugins required, what if you could set an expiration date of how long a folder is shared and maintain an extensive audit trail?

TMC Labs spoke with TransCertain's CIO David Schoenberger about CertainSafe, along with its current product, CertainStore, which is the engine that drives the security behind CertainSafe.

TMC Labs: Please give us a bit of history on TransCertain, along with a technical description of CertainStore.

Schoenberger: My partner Tim Reynolds and I both came out of payment processing background, and we worked with a couple of payment processors before. We had built some remarkable payment processing technology – highly secure processing and working directly with the Federal Reserve System and to the backbone of VISA and MasterCard. Direct high-speed volume processing. We had to have high speed, high security, and high availability. Those were our three foundational hallmarks for the technology we built.

While we were in this payment processing business, our clients kept coming to us and saying: 'We understand you have fantastic security, you've got great speeds, but we're also concerned about some other pieces of our data. What do you guys do for social security numbers or what about this documents that go along with the payment transaction? Can you secure that stuff too?' And we couldn't. The growing concern in the marketplace was that we're not just concerned about payment data. In fact we might be more concerned about these other pieces of data than we are around the payment data.

So that's what we did. Tim Reynolds and I left the company we were with and founded TransCertain with the idea that we can take any data from any platform and secure it. But not just secure it – make it available. This availability is very revolutionary for us. We've bridged the gap between data

security and data integration and availability, and we have created a technology that secures data at very high speeds and very securely, and at the same time makes it available.

Unlike bulk database encryption solutions, which encrypt everything, CertainStore helps companies identify which items in their database would give the company heartburn if there was a breach. What CertainStore does is take those elements from their database and provide the customer a 'token' just as a reference or placeholder. They take the secret data and put it in CertainStore's cloud through a proprietary algorithm to generate the token, which importantly has nothing to do with the source data. So if someone hacks in and finds those millions of tokens sitting in the client's database, they won't be able to reverse engineer the originating data.

TMC Labs: What if a rogue employee attempts to contact TransCertain with all of the tokens and asks for the data back?

Schoenberger: Typically, when we have the data, we're doing something with the stored data. We can hand it to a vendor, to a bank, to the other doctor, the other insurance company. Typically speaking, we never hand the data back to the merchant. When they tell us to do something with the data they'll hand us the token with the rule that's already built into our platform called process on time that says 'here's what needs to happen to the data when it needs to happen.' So if a hacker says hand the data back to me, our system will deny it.

TMC Labs: This essentially eliminates social engineering hacking.

Schoenberger: Agreed. Even if the hacker figured everything out and broke through all the rules and understood every nuance of our technology, which I'm telling you is impossible, and he took the token and hacked in and unencrypted this data represented by the token and the hacker found in the thousands of different hard drives where that piece of data lives, MicroEncrypted on that hard drive and took the data out. The best thing – which is still impossible – that they can ever do and if they are able to hack through the encryption algorithm, which standard ships with AES256, instead of unlocking an entire encrypted database, they'll only be able to unlock one single element of that data.

He added that they can use whatever encryption algorithm a client wishes, including proprietary encryption algorithms.

TransAct is the final step, an adapter system they've built that unencrypts, transforms the data into a format the receiving side is expecting and then a Just in Time sort of method. It unencrypts the data using the token and uses the receiving side's proprietary

method of transmitting that data to them. The receiving side can use standards such as SSL for the transmitting of the data.

The solution completely relieves clients of the burden of securing the data, any fines or penalties or media embarrassment if a client's systems were hacked since no sensitive data was stolen. The platform gives them complete control and freedom over what happens to that data and because CertainStore does not ever hand back that data to the client, it eliminates the liability of "holding" that secret data locally. CertainStore acts as the go-between, pushing the data where the client needs it to go without the client ever having to store sensitive data in its own IT infrastructure.

If the client wants the data back, CertainStore will give it back to them. In fact, there are cases where fields need to be updated or compared. CertainStore offers APIs to expose the data and allow the client to update records and re-encrypt and re-tokenize that data without clients having to do anything on the front-end.

CertainStore leverages server-to-server communication using standard web services so that its database communicates with TransCertain's servers to provide the field-level encryption and what TransCertain calls "MicroTokenization". These connections are completed utilizing technology that can connect any platform to any other platform quickly, efficiently, and cost effective.

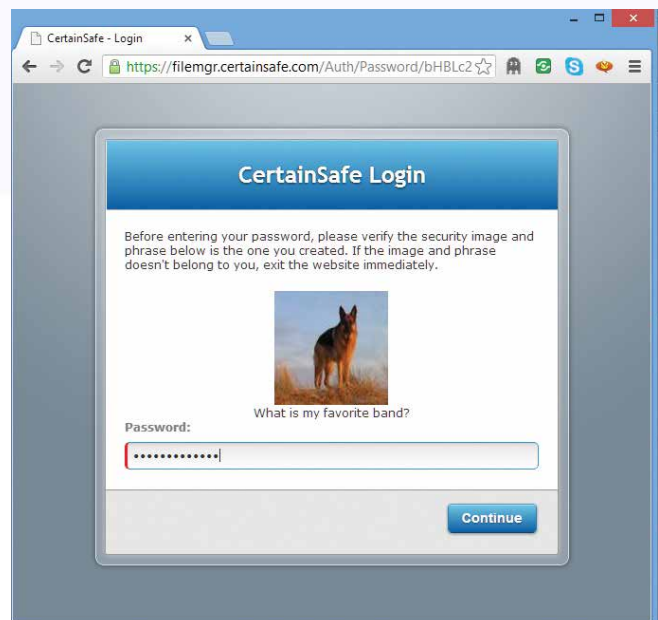
All TransCertain services – CertainStore, Process on Time, and TransAct – are wrapped with APIs, both XML and JSON APIs, so any organization regardless of its front-end platform or database can send and receive tokens from TransCertain. They also can send and receive the data that they need, and can make the requests that they need programmatically at the server level. That means integration is a piece of cake, said Schoenberger. They don't have to change their front-end software, or change their database, or change their legacy system, etc. All they have to do is make an XML or JSON call into our platform, he said.

With a background on TransCertain and CertainStore complete, Schoenberger proceeded to demonstrate the CertainSafe security-as-a-service solution. TMC Labs was also granted a trial account to test it ourselves. CertainSafe is a web-based front-end built by TransCertain designed to be completely browser-based with no installation, leveraging HTML5, and built on TransCertain's core foundation, of which CertainStore that we discussed previously is a core component. While CertainStore was designed for server-to-server communication with no human interaction, TransCertain built CertainSafe for human-to-server communications.

What does CertainSafe do? Essentially, you can think of it as similar to a Dropbox or Box, but with an added layer of security and compliance – and when we say compliance we're talking PCI DSS Level 1, plus AES256-level encryption, with support up to 1024-bit or any other custom algorithm that may be required. CertainSafe enables organizations to share mission-critical information across multiple platforms at a high level of security you just don't see unless you work for a government entity.

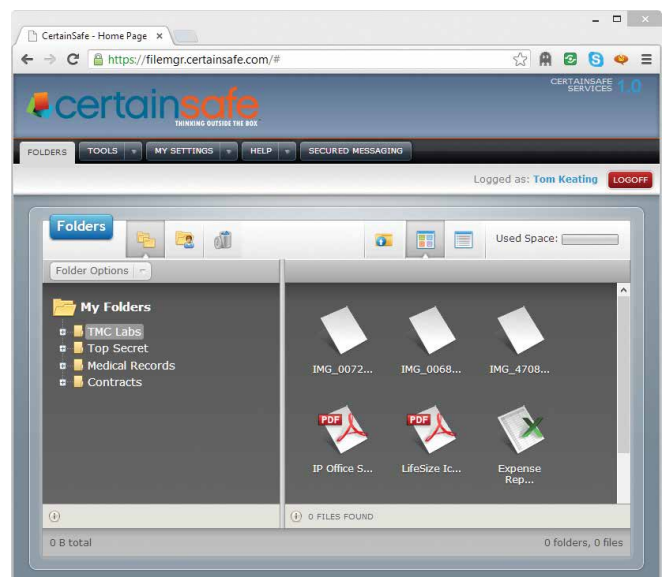
The popularity of Dropbox is due to its ability to easily share photos and documents with others as well as hosted backup. Schoenberger explained, "We designed CertainSafe very specifically to say 'we don't want the bulk.' We're not the neighbor-

hood storage unit. We're in essence the virtual safety deposit box. This is for your files where you need compliance and/or high levels of security. You want stuff to have a PCI-certified rubberstamp on it, or you want to pull in your X-ray files. We don't envision people using our service just for backup or storing vacation photos. This is for the real secret, sensitive stuff."



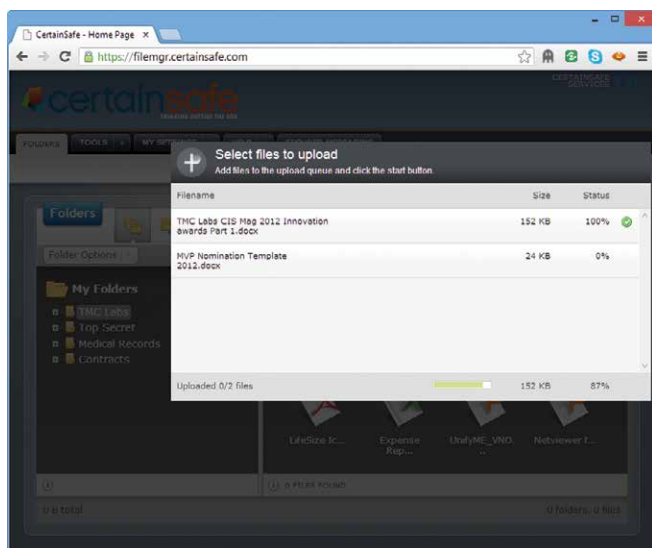
When we first logged into CertainSafe as a new user, we were prompted to pick out our own security questions and then we could set how often after we login that we're challenged. You can choose how often to be challenged, i.e. once per week, once a month, randomly, etc. Here's an example:

In CertainSafe you can create folders and then share the folder with other people, including people who are not currently CertainSafe users. CertainSafe users can share their folders and files with anyone, with the only caveat being that non-CertainSafe users only have "read" access and not "write/edit" access. The main folder and file management UI looks like this:



CertainSafe stores files in two different formats – the original file format and converted preview view if it's a viewable item, such as an Excel, Word, PDF, or other formats CertainSafe supports. It's a non-editable secure view of the file and cannot be downloaded or printed, though technically you could take a screenshot and print that. The system can store financial data or other confidential data because as previously mentioned, it is PCI DSS Level 1 certified with third-party auditing of this compliance.

Dragging and dropping files from your file manager (i.e. Windows Explorer, Apple Finder) into CertainSafe is a snap. In fact, you can drop-and-drop multiple files at once and through the magic of HTML5 you don't even need a browser plugin to upload your files. Here's a screenshot of the browser where you would simply drag-and-drop your files:



What happens on the back-end is the file is MicroEncrypted and has a token created. It is then stored in multiple locations, and converted into a viewable only document. It's actually stored twice times four, because they have a data center in Denver (primary) and Salt Lake (hot site) with each data center having a 2nd redundant database. If any disaster happens it's already running simultaneously at the hot site and essentially backed up an additional two times.

Importantly, when you share a folder you can set a data range, including the ability to share a folder in the future. Unlike Dropbox and other cloud-based sharing apps, which require you to remember to "unshare" a folder at a later date, CertainSafe lets you set a sharing expiration date. This is important for reporting, HIPAA compliance, and other compliance issues. Other sharing options allow you to set whether users can download the file, view the "preview" rendered document only, and even enable users to upload back into this folder. When viewing files you can view in icon view or in list view, which lets you sort by date. A couple other handy file management capabilities include auto e-mail notifications upon changes and auto e-mail notifications for new items added.

TMC Labs mentioned how fax is considered a strong legal document because there are no stops in the middle, unlike e-mail which travels across multiple hops, can be spoofed, etc. And

we asked Schoenberger what sort of legal standing CertainSafe has. He responded, "It's similar to fax in that regard. This means that if you upload something it's not going anywhere except into this compliant, certified, cloud-based application."

Audit logs built into the system add further legal standing and enable clients to track who changed what and when. You can see when someone looked at a file, and more. The web interface doesn't display every bit of detail. For instance, CertainSafe tracks how long each user has been signed into a session but doesn't display that information by default. CertainSafe records just about everything imaginable into the database, and TransCertain can customize what audit information is displayed for its clients.

One useful feature is that users can attach comments to a document. This is useful, for example, for signing contracts – simply upload the contract and request the other person sign it with a comment. TransCertain told TMC Labs the company is working on a digital signature feature for a more formalized signature process. Another useful feature for the enterprise is that administrators can set roles and permissions for users.

Secure Shred Option

When a file is deleted it is truly "shredded". It is overwritten by binary data at minimum seven times. Forensically, four is enough to make the file unrecoverable, but TransCertain mentioned that the Department of Defense requires a minimum of seven times.

TransCertain demonstrated how an X-Ray can be shared in the cloud without delivering the X-ray to the doctor's hard drive. This is not only important for HIPAA compliance, but it also solves the bandwidth issue of waiting for a 2GB or larger file to download. The X-ray image can be viewed from your browser with the image residing securely in the CertainSafe cloud.

Pricing

Basic Individual - \$9.99/mo each
Professional - \$7.99/mo each
Enterprise - varies

Ratings (0-5)

Installation: 5
Features: 5
Usability: 5
Security: 5
Overall: A+

Conclusion

TMC Labs inquired about future features in CertainSafe, and the company told us that Secure Chat is in the R&D stage. We also asked about WebRTC (VoIP, video), and the company said that's something it's looking at as well.

Sharing and security are like matter and anti-matter – if they get close they destroy each other. How can you have high-level security and at the same time share the information without killing usability and making users jump through hoops to gain access? CertainSafe takes this sharing/security/usability paradox and turns it on its head, making information secure, PCI and HIPAA compliant, and very usable/user-friendly for the end user. TMC Labs was very impressed with CertainSafe and would not hesitate to recommend its solution to organizations looking for a highly secure method of sharing information with high usability and at a cost that doesn't break the bank. **IT**

Tom Keating is vice president, CTO and executive technology editor/SEO director of TMC.

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Agent of Change

Alliance Discusses Reorganization, Channel Challenges & Equity Plan Update

The past couple years have been especially challenging ones for the channel at large and the Agent Alliance in particular. INTERNET TELEPHONY recently checked in with Bill Power, CEO of the Agent Alliance, on how the group is evolving to help its membership address new trends in networking and to get an update on the organization's legal tangle with Blue Casa, the new owner of TNCI. Below is a paraphrased version of that conversation.

For those not familiar with the Agent Alliance, give us some background.

Power: The group has been around since the late 1990s. It originally was formed as a caring and sharing group, to allow people to share their experiences.

But as time went on we saw we had an opportunity to band together and negotiate contracts together. That's still important aspect of the alliance.

We are now a for-profit corporation and our members are shareholders. We have 17 shareholders, and we're adding more. We opened up 12 more positions, for which we're recruiting cloud brokers and agents.

What value do you bring to your members?

Power: We offer our members value in three areas. The first is by virtue of these group contracts. We have such a significant mass within the alliance that we can negotiate favorable contracts – with the best compensation, terms and agreements. Second is the caring and sharing I talked about before. The value there is tough to quantify, but it is valuable. Third is member-to-member commerce. Alliance members have more than 300 unique contracts with one another. We find all the time that if one member needs to access a provider not in their portfolio they will do that through another alliance member, and they will do that with a handshake and with attractive commission pass through.

The alliance recently added The Cloud Taskforce and Foster as members. First, tell us about The Cloud Taskforce and what they bring to the table.

Power: They are the first non-traditional telecom agency we've added to the alliance. They are doing 3 things I just described.

The Cloud Taskforce can add to our production, and brings experience on the cloud –which is incredibly valuable to us.

What about Foster?

Power: It's a telecom agency in Minneapolis, a large Integra contract holder, very experienced. They will add incredible energy to the group.

The press release announcing that The Cloud Taskforce and Foster have joined the Agent Alliance talks about how the alliance is shaking thing up. So has the Agent Alliance reorganized, or has it just added new members?

Power: We have reorganized, we have created several strata of shareholders within the group. The founding members have settled into different categories. And we are for the first time holding each other accountable for contracts, so we now have a quota. As far as membership, we are looking for other additional cloud brokerage firms, and we're looking for VARs with telecom practices.

What is your view about the changing nature of communications, what it means for agents, and how the Agent Alliance is helping its membership respond?

Power: We're in the middle of a dramatic change, kind of like during the CLEC boom, before which agents were just selling long-distance and then we started also selling local. Now there's much more significant change, with the introduction of cloud services. It's no longer about just slinging pipes. To be a more trusted adviser is where we need to be now.

So how do you do that?

Power: It's a huge challenge. Every one of my members is faced with how do you continue to add value beyond selling pipes. It's about either buying expertise, building it yourself, or strategically partnering. The strategic partnering goes on within our membership. For example, one guy in alliance is focusing on virtual desktops, and now other alliance members can leverage that expertise.

Sounds like a clearinghouse. Does the Agent Alliance have a clearinghouse, or are these partnering relationships among alliance members more casual?

Power: It's not a formal clearinghouse. But we want to make sure everyone in the alliance understands what everybody else in the alliance is doing. And there is great accountability within the alliance.

OK, I have to ask you about the Blue Casa legal tangle and the TNCI Equity Plan. Please start from the beginning.



"Everybody has stuck together. I really think the struggle has made the alliance much stronger."

- Bill Power of the Agent Alliance

Power: Reseller TNCI's equity plan was conceived in 2007. Then TNCI's business plan was to grow and sell/be acquired, and they were willing to share the proceeds of that sale with agents.

Agents would sell TNCI services to help TNCI grow, and then when TNCI was sold, the agents would get a piece of the deal. The alliance owned that contract, but there was a mechanism through which non-alliance members could participate.

But it didn't work out the way we expected. TNCI ran into financial problems and tried to evolve from a switchless reseller to a facilities-based carrier – that was well before Blue Casa. And in 2009-2010 the traction the alliance got with agents embracing TNCI service was lost because

our members saw that it wouldn't be as successful as first hoped.

Then, in October of 2011 TNCI filed Chapter 11. I was on the official creditor's committee and there were lawyers all over the place. When they first filed Chapter 11, as a creditor the alliance filed a claim of \$18.5 million in unpaid commissions, which included the value of this equity plan and some other items.

TNCI tried to get a reorganization plan approved and that was turned down, so TNCI decided to sell its assets, and Blue Casa materialized. TNCI has since sold to Blue Casa.

The alliance's contract with TNCI has been rejected by Blue Casa, so we are no longer

involved in that. So there are thousands of customers of TNCI with no agents to support them. It's a real mess.

At this point, we are in the process of negotiating as part of a creditors pool. We'll probably get 10-15 cents on the dollar. I'm guessing this will happen in the fall time frame. Meanwhile, Blue Casa has contracted with some agents, but most of them it has not.

How did the TNCI/Blue Casa situation impact Agent Alliance's membership and leadership?

Power: The same leadership is in place, and it didn't impact the numbers of our membership. Everybody has stuck together. I really think the struggle has made the alliance much stronger. **IT**

Joint Initiatives Put Sales Organizations on a New Go-to-Market Path

Emerging markets and the small- and medium-sized business sector are all the rage today. That is where the opportunities are. That is where promising and potentially profitable new customer segments can be found. It is where companies should look for growth.

That is also where there are major potential potholes and landmines that most companies' existing sales models are ill-equipped to avoid.

As they look for growth in these new places, many companies find their existing selling models – specifically their traditional alliance relationships – are neither broad nor flexible enough. These markets are inherently more risky and require their own products and services, as well as different selling and pricing strategies. And most companies have limited data and insights on them, making it all the more difficult to be successful using their existing approaches.

The solution is for companies to look beyond traditional selling methods and leverage a market's broader ecosystem: the community of goods and services that meet the needs of a specific set of customers. To do so, companies need to forge new relationships with partners, suppliers, vendors, co-developers and even competitors – relationships that are deeper, more collaborative, highly flexible, adaptable and responsive. We define such a relationship as the joint initiative model, which is the embodiment of a new approach to sales called agile selling.

Typical alliance relationships are sell with arrangements in which teams from the respective companies work together as opportunities arise to sell a common solution. In contrast, a JI features two or more partners jointly investing to develop differentiated solutions they bring to market together. A JI is most often a new entity with dedicated sales and service teams and integrated operations that pursue aligned business objectives of the two or more participating partners. The most successful JIs eventually evolve into a standalone line of business for the respective parties, which, through highly strategic teaming, can generate multiples of the revenue that the traditional arrangement does.

Because a JI is, in essence, a small company, it should have a formal organizational structure with explicitly defined roles and duties. Parties investing in these JIs intend to leverage each other's strengths, such as better access to new sales channels, technology superiority and functional expertise. There are five key elements of the organization structure of this new company, each of which includes representatives from both parent organizations.

Leadership and Governance

Like any corporation, a JI needs people who are in charge – those who provide strategic direction and are the ultimate decision makers.

Solution Development

Unlike a traditional sell with relationship, which generally goes to market with standard solutions already existing in the respective companies, a JI is based on designing and developing truly differentiated solutions that draw on the strengths, experiences and expertise of each partner.

Go-to-Market Team and Delivery Workforce

The JI's dedicated sales team includes professionals from all JI partners who are charged with taking the jointly developed solutions to the market. This group comprises several different roles, with sales directors and field sales people accounting for the bulk of individuals in the group.

Program Strategy and Solutions Office

A JI, like any business entity, has many moving parts that must be managed on a daily basis. That is why a key function of any JI is the program strategy and solutions office, also known as PSSO, which is responsible for ensuring the organizations collaborate effectively while minimizing the impact on administrative resources and maintaining the run-rate business.

In addition to these five groups, a JI often includes a number of support resources typically found in companies of all types. These include professionals from disciplines such as marketing quality assurance, legal, finance and recruiting. In most cases, these professionals are not a formal part of the JI structure but, rather, are on loan from the parent organizations and contribute their expertise on an as-needed basis.

The JI model is a major step away from outdated, rigid go-to-market relationships that are becoming less effective in helping companies expand their reach and market share. JI relationships emphasize a tighter linkage between organizations with a common customer set, compelling new solutions targeted at these customers, and the ability to respond quickly to changes in customers' needs and market conditions.

But the JI model is only the beginning of such a shift. We expect to see companies in the near future taking JIs to the next level, tying together already-successful JIs into synergistic superstacks comprising the best companies in key markets, all working together to meet the ever-changing needs of customers. The beginnings of such superstacks already can be seen in the high-tech industry. They likely will soon spread to other sectors as more companies determine that going it alone could be a recipe for being left behind. **IT**

*Robert Wollan is global managing director of Accenture's Sales & Customer Services practice; Naveen Jain and Michael Heald are managing directors in the practice. The executives are co-authors of the recently published book *Selling Through Someone Else: How to Use Agile Sales Networks and Partners to Sell More*.*

By Peter Radizeski



Yo Agents! Start Blogging!

Content marketing is the hot thing now. It was the hot thing in 2004 when I started blogging, but that was before Google started changing their algorithm frequently.

Content marketing means adding new and relevant information to your website, your blog, LinkedIn and your G+ account.

Most small businesses forget to update their website. If you have added new services – like cloud or Hosted UC or managed services – it may not be reflected on your website. Today, with the do-it-yourself content management systems (CMS) like Wordpress, it is fairly easy to update or add pages to your website.

Do you have a complete LinkedIn profile, including photo? Do you have at least 250 connections? Do you participate in any group discussions? This could be achieved with 30 minutes twice a week in your calendar. LinkedIn has 200 million users and is the most active social platform for B2B.

Why G+ (Google Plus)? Google is moving everything under G+, including Local. Local search is where the rubber meets the road; it's where people find you. Most searches are local. And not for nothing, if you haven't captured 15%

of your local market, why are you looking elsewhere? Milk your own cows.

Now the blog. People look exhausted when I mention blogging. There are a number of ways to tackle a blog. One way is the team approach - get as many employees to blog as possible to take the burden off any one person or department. Another way is to hire a writer for it. I find the best way is to just start. Write 250-400 words every day. Schedule a time for it on your calendar. Pick 3 keywords. Picture your audience - who do you want to talk to? Who are you telling this story to? Then just write.

Don't know what to write about? Here are a few topics: frequently asked questions; an industry trend; hiring; finance; talent; book review; a response to an article/blog/editorial; a customer; a partner; an employee's charity effort.

When they talk about content marketing, they actually mean useful or compelling content. Focus on your audience. Tell a story. Add content weekly. **IT**

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

Data Center Infrastructure Supplier Expands Channel Effort

Cosentry has announced the expansion of its channel partner program with the hiring of industry executive Johnny Perales. The company says its channel program will grow its partnership portfolio, and expand existing partnerships with industry heavyweights such as CDW CenturyLink, EMC, VCE, and VMware. Perales, who is based in Texas and will be hiring additional personnel to cover the U.S. market, previously managed Rackspace's Preferred Partner division and served as Lunarpages' vice president of sales and marketing. He's also worked for Dell and ITT. Cosentry is a provider of compliant ready data center infrastructure, advanced cloud computing solutions and managed technical services.

Ceragon Unveils New VAR Partner Program

Wireless backhaul specialist Ceragon

Networks Ltd. Recently announced its new North American Ceragon Partner Program, which pairs Ceragon with leading value added resellers with experience in strategic industries and markets. The introduction of this new partner program enhances Ceragon's existing program, which has been in place for over a decade. It expands the company's North American go-to-market strategy and focuses on bringing more value to its prioritized vertical markets. The Ceragon Partner Program will focus on self-sufficiency and enablement with formal business planning available for top-tier partners on an annual basis. Education for the partner community will include technology training, collateral development as well as ongoing support.

Spanning Cloud Apps Launches Reseller Program

Spanning Cloud Apps, Inc., creators of the enterprise-class data protection solution Spanning Backup for Google Apps, has launched the Spanning

Authorized Resellers Program. The program has been designed to provide value-added resellers and system integrators "with outstanding margins and recurring revenues, as well as sophisticated marketing and sales support," according to the company. Spanning Backup provides backup and recovery of the complete Google Apps suite: Gmail, Drive, Sites, Calendar and Contacts. The solution features a secure cloud-to-cloud environment for protecting Google Apps data and SSAE 16 Type II audited processes. "As enterprises encounter obstacles in moving to the cloud, Spanning Backup provides a unique solution that solves the challenges facing our customers in North America, Europe and Asia," says Doug Shepard, president of the Google Business Unit for Cloud Sherpas, the world's largest cloud services brokerage and two-time Google Apps Global Partner of the Year. "We look forward to a successful partnership with Spanning as we integrate their solution into an overall cloud strategy for our clients."

Cloud & Data Center

Rolling in the Deep

Database Startup Helps Businesses Dive into Big Data

Deep Information Sciences, which is led by a deep bench of former Arbor Networks and Ellacoya top brass, in April announced Series A funding and unveiled its DeepDB database.

The company's leaders say DeepDB is a new approach to database architecture that addresses performance and scale, and which they report has outperformed existing databases by 10 to 100 times across a wide variety of use cases.

INTERNET TELEPHONY recently interviewed Kurt Dobbins, CEO and co-founder at Deep, to find out more about the company's strategy and financial position.

When was Deep Information Sciences founded?

Dobbins: We started the company in 2010 and were in stealth mode until our official public launch in early April 2013.

What market need does the company address?

Dobbins: Deep is addressing the need for high-performance, real-time transactions and analytics using the same dataset. Deep's technology and product solutions address both the volume and complexity of today's data as well as the computational demands of advanced queries and the time-to-result constraints that businesses and their customers now require. We have created a new database engine that sits deep within the data infrastructure to address the challenges driven by big data that organizations are facing today. What takes legacy systems hours to complete Deep completes in minutes. Unlike existing database solutions, which rely on batch processing or data exports for analytics, Deep enables our customers to gain meaningful business intelligence from the live transactional commerce data in real time. Our technology is a major leap forward in database design and allows our customers to address problems more quickly and cost effectively than anything else on the market.

Tell us about the management team at Deep.

Dobbins: Our team is led by a group of exceptionally gifted technologists and

entrepreneurs. In our collective experience we have shipped thousands of commercial products, built billions of dollars of exit value and have over 50 patents. The team includes Jack Boyle, chairman; me, as CEO and co-founder; Phil Bedard, COO and co-founder; Jason Jeffords, CTO and co-founder; Tom Hazel, chief scientist and architect; and Mike Skubisz, vice president of product management and strategy.

What is Deep's ownership and financial situation?

Dobbins: In early April, we closed our Series A private funding with over \$10 million and are now generating revenue. Our investors include Stage1 Ventures with David Baum, Robert Davoli, Chamberlain & Steward, Robert Levine, Cofounder, Cabletron Systems, Alessandro Piol and a group of passionate angel investors.

Who is Deep's target customer?

Dobbins: We like to think of our customers as CIMOs – chief information and marketing officers – at enterprises, service providers and government agencies who need a new way to tackle the complexities associated with big data. Our target customers can come from any sized organization in any vertical that has complex data management challenges.

How widely is DeepDB in use today?

Dobbins: We have several DeepDB beta customers today, including Blackmesh, Global Relief Technologies and PixelMedia, who are seeing orders of magnitude improvement in their particular use cases. We are also working with several Fortune 500 companies that are in various stages of pilot and beta testing.

Why do customers need the Deep solution, and how are they benefiting from it?

Dobbins: Our customers are using DeepDB to handle their big data quickly

and efficiently. For the majority of our customers, the technology acts as any other database would for their business – the difference is Deep is doing it faster than ever before. One of our customers, Global Relief Technologies, is using DeepDB to update its database with data from remote field personnel who log information on their tablets. This process used to take more than a day. With DeepDB, it takes 17 minutes.

How is DeepDB packaged and priced?

Dobbins: DeepDB is available via flexible software license terms that enable our customers and partners to use DeepDB in the way that gives them the best economic and competitive advantages: as an enterprise solution; as part of a SaaS solution (an application or DBaaS). Because DeepDB supports industry-standard open interfaces, it installs in minutes.

What is the availability of this solution?

Dobbins: The DeepDB general-purpose database technology is in beta now, powering our first go-to-market product, which we will be making generally available later this year.

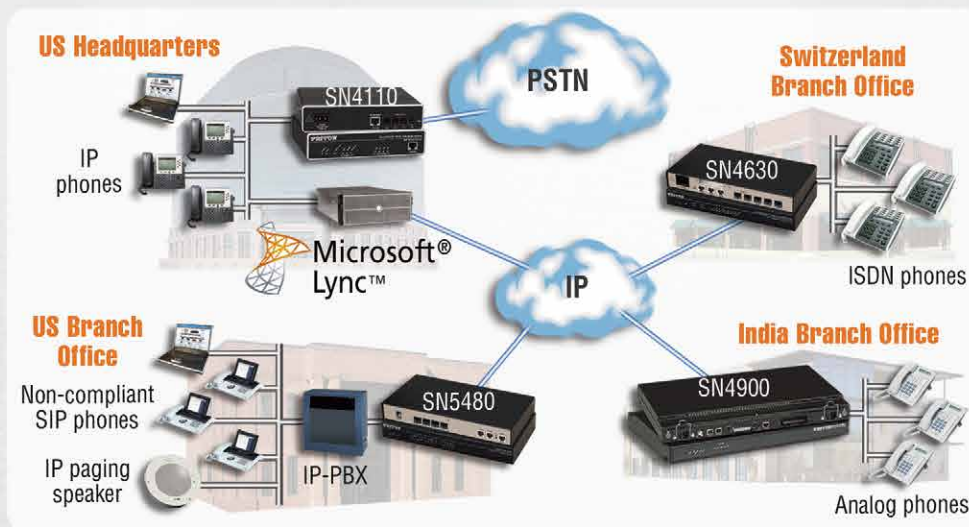
Deep is not the only player working to address this need. How is the company's solution different and better than competitors in this realm?

Dobbins: Deep represents a fundamentally new way of handling big data. Unlike other new database solutions that have either made minor optimizations to older techniques or have focused on narrow use cases, Deep has reinvented database technology in the broadest sense. We took a fresh look at how to deliver a general-purpose database solution capable of supporting both structured and unstructured data with the same database in a highly performing manner. Our technology is one of the most significant changes in database technology over the last decade and allows Deep to address problems more quickly and cost effectively than anything else on the market. **IT**

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The Voice Network in the Cloud

In my earlier article *Carrier Voice: Ditching Boxes for Clouds*, I outlined the factors leading to a new solution to the next-generation voice conundrum – the efficiency and new possibilities of IP networks in conflict with the cost and complexity of VoIP/IMS equipment along with the reality that service providers are challenged to grow voice ARPU in the all-IP era. That solution is cloud-based voice platforms, which allow service providers to get out of the voice network building business and focus on growing their business.

There are various requirements that this wholesale solution needs to meet to be a true alternative to building a voice network. The ideal solution is not just in the cloud. To be effective, it needs to be an extension of how service providers manage and monetize their networks. There are six key elements to demand in a cloud-based voice platform.

1. Standards-based

The cloud-based voice platform must support the relevant SIP and IMS interfaces so that service providers can choose from a broad device ecosystem and allow for carrier interconnect and roaming. This further drives down costs for service providers, provides future flexibility and means that end customers are globally connected and not contained in a walled garden.

2. Horizontally integrated solution

This means all the functional elements for a complete voice network starting with application and media servers for end user features and also including other foundational components such as session management, security/session border control, fraud prevention and device management. This also means having a single management interface to manage, provision and troubleshoot the service. This single view helps drive down operational costs associated with voice networks.

The architecture and system design needs to be done with a focus on performance, reliability and scalability. The cloud-based voice platform is not just easier and more economical, but designed to meet the same expectations as classic voice networks.

3. Multi-tenancy

A solution that can be securely virtualized is a hallmark of the cloud and is an extension of the horizontally integrated solution. Custom-built, managed or hosted models do not offer the same flexibility, nor do they offer the same compelling economics. A single platform supporting many service providers and millions of end users is the only way to contain costs as the service scales.



4. Back office integration

Providing functional replacement of the voice infrastructure is the first step. Examination of how that platform plugs into the business processes and operational systems already in place is also critical. The cloud-based voice platform must provide data feeds and APIs to facilitate reporting, information flow and the control mechanisms for all service provider staff – product managers, customer service representatives and support technicians.

The broadband service provider must be able to maintain complete control over product offerings, billing, subscriber provisioning and troubleshooting. This also includes the ability to seamlessly integrate with existing end user portals for self-care and management.

5. Regulatory compliance

As an alternative to building out the network, the cloud-based voice platform must deliver on all the components required to meet regulatory compliance. This includes full support for emergency service and lawful intercept, as well as tax calculation and reporting.

6. Carrier services

The cloud solution also needs to address the transport, local exchange and routing of voice communications. This means full automation capabilities for number portability, telephone number management along with PSTN origination and termination for domestic and international traffic.

When all six elements are provided as part of the overall voice delivery solution, it can be transformative for the service provider. It can drastically reduce capital and operational expenditures and liberate product management and engineering to focus on more strategic and mission critical initiatives. **IT**

Kevin Mitchell is vice president of marketing at Alianza (www.alianza.com).

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Infonetics Assesses Data Center Security Market

Globally, the data center security hardware appliance segment of the market grew 2 percent in 2012, according to Infonetics Research. The smaller but much faster-growing virtual security appliance segment grew 33 percent in 2012, and is forecast by Infonetics to more than double between 2013 and 2017, to more than \$1.3 billion. Market share for data center security hardware appliances generally parallels that of the overall security solutions market, with Cisco, Juniper, and Fortinet in the top tier, but there are many challengers, including Palo Alto Networks, poised to move up the leadership ladder, according to Infonetics.

BluIP Announces Cloud PBX for Hospitality

Wholesale Broadsoft service provider BluIP has announced a cloud-based integration of a carrier-grade hosted VoIP platform with a widely established cloud-based hospitality software platform. It includes BluIP's PBX system and SDD Inc.'s JAZZ Fusion software. "BluIP's leveraging of strong established core technology has clearly created a viable cloud alternative for hoteliers with an above property technology strategy," says Ron Tarro, president and CEO of SDD Inc. "The BluIP and JAZZ Fusion Virtual Private Clouds combine to present a fully-managed hotel telecoms solution. JAZZ Fusion delivers its well-established integrations and guest features to support BluIP's voice cloud."

ManageEngine Previews OpManager Major Upgrade

The next version of OpManager will feature 360-degree root cause analysis, enterprise-class scalability and a real-time user interface to help large enterprises and service providers ease their private cloud management, according to ManageEngine, which was demonstrating OpManager at Interop 2013 being held May 6–10. The company is also demonstrating major upgrades that were just announced for ADSelfService Plus, the IT self-service software; Applications Manager, the on-premises application monitoring solution; and Site24x7, the cloud infrastructure monitoring service. "For IT teams today, life in the data center and on the network requires faster responses and remediation for a growing number of challenges," says Dev Anand, director of product management at ManageEngine. "Unfortunately, root cause analysis is a backward process in most IT departments while scaling a monitoring solution often imposes high costs in both IT staff and systems. And without real-time views, IT teams can't act with real-time responsiveness. That's all going to change with this next version of OpManager."

A Cloud Service for Cloud Providers

The new Cloud Innovation Suite from BlueOSS bills, provisions and does end-to-end ordering, all via a software-as-a-service package.

The implementation process has four stages: a requirements definition workshop, which produces a statement of work; system preparation, on-site configuration and testing; training and knowledge transfer; and user acceptance testing. The Cloud Innovation Suite itself is divided into three main categories: integration tools, process tools, and what the vendor calls value engineering tools. On the integration side, the built-in product management features can both aggregate and integrate items such as order process management, cloud services catalogs, and license management. On the process side, it manages customers by handling customer quotes, managing their terms of service, and providing a self-service portal where customers can do their own changes and upgrades as well as manage their own accounts. The value engineering tools include the ability to handle SLAs, do renewals and manage partners through multi-tenant pricing and support.

Report Sounds Alarms about Disaster Unpreparedness

The new report "Disaster Unpreparedness", underwritten by NetApp and SwishData, reveals that federal IT professionals lack confidence in their data resilience and disaster recovery capabilities and may not test their systems as often as they should. Only 8 percent of federal IT professionals are completely confident that they could recover 100 percent of the data subject to service level agreements in the event of a natural or man-made incident, according to the report, which is being promoted by MeriTalk, an online community for government IT.

Ericsson Does the Math on Video Traffic Growth

Video traffic is growing by 60 percent annually, driven by better network speeds, according to the new Ericsson Mobility Report. The company says that total global smartphone subscriptions hit the 1.2 billion mark in 2012, and are due to reach 4.5 billion by the end of 2018 and that 60 percent of the world's population due to be covered by LTE in 2018. While data traffic volumes doubled between the first quarter of 2012 and the first quarter of 2013, they are expected to grow 12-fold by 2018.

The Cost of Data Breaches

Symantec Corp. and the Ponemon Institute have released the 2013 Cost of Data Breach Study, a global analysis that reveals human errors and system problems caused two-thirds of data breaches in 2012 and pushed the global average cost to \$136 per record, with the United States total cost per data breach incident at roughly \$5.4 million. Issues included employee mishandling of confidential data, lack of system controls, and violations of industry and government regulations. Human errors and system problems account for 64 percent of data breaches in the global study, while prior research shows that 62 percent of employees think it is acceptable to transfer corporate data outside the company and the majority never delete the data.

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Avaya Takes Networking Lead in SPB

Avaya used a recent industry event to demonstrate its real-world Shortest Path Bridging solutions, while interoperating with Spirent, HP and Alcatel-Lucent.

Many of you will remember when Avaya was actually the enterprise division of Lucent before the company spun off just over 12 years ago. Randy Cross, the company's director of PLM, discussed how there is a rapid move to software in the networking market, and SPB is an evolution of MPLS, allowing services to be created dynamically on the server where the applications reside or on the switches nearest the users.

This is one of the main benefits of SPB in fact. It allows customers to simplify network creation and management by requiring service provisioning only at the edge of the network.

Avaya thinks the new protocol has a bright future as it saves time, effort, and reduces human error by dynamically building and maintaining the network topology between nodes using intermediate system to intermediate system, or IS-IS, a carrier-grade link state protocol. Another benefit lies in its ability to establish a multi-path fabric for traffic distribution and subsequently maximize bandwidth utilization on all paths while being able to execute seamless, sub-second network changes.

The company showed multicast over SPB utilizing its VSP 4000 multiservice edge switch and later demonstrated a sub 200 millisecond failover.

Using this technology and the VSP4000, you can extend the service-enabling fabric to the edges of the network supporting a distributed enterprise. Cross explained that the company deployed this technology with video surveillance company Pelco and were able to show that SPB provided three times better performance than IP multicast (PDF) without needing to reset the IP cameras frequently.

Another big benefit of this technology is building metro area networks where a data center can have VSP 7000s or VSP 9000s while the VSP 4000 can sit in the basement of a building providing all the benefits of MPLS with security and isolation at a lower cost. This can be as simple as having a few engineers lighting up the metros quickly with fiber to the building and a truck roll to deploy the box, he explained.

Other benefits of this solution include simple commands of a few words to allow services to come up quickly between nodes as well as the ability to transfer virtual machines rapidly between the gear of various equipment vendors.

Zeus Kerravala, principal analyst at ZK Research, had this to say about the news, "These four vendors coming together to

showcase SPB interoperability in a public forum such as Interop is significant. In comparison to alternative fabric technologies, SPB offers more vendor support, offers greater scaling and has implementations which are closer to the actual standards – facilitating this type of interoperability testing. Companies that are looking to virtualize data centers and reduce network complexity need to consider an approach based on Shortest Path Bridging." ■

The company showed multicast over SPB utilizing its VSP 4000 multiservice edge switch and later demonstrated a sub 200 millisecond failover.

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Why Startups Should Consider the Option of Equipment Financing

Economic times are challenging many businesses today, and the current economic environment poses even greater difficulties for entrepreneurial startups and small businesses that are struggling to get established, grow or just stay in business. The characteristic innovation, agility and hard work of these businesses are precisely what the U.S. economy needs to get moving again; however, their nature of being newer, less capitalized or less established creates a catch-22 that impedes their ability to secure the credit they need. That's why it has never been more important for startups and small businesses to understand their options for financing the equipment needed to operate and grow their businesses.

Acquiring equipment through leasing and other financing methods is more flexible and customizable to meet unique business needs than most funding options. This makes equipment finance a perfect fit for startups and small businesses, both of which may have trouble getting traditional bank loans. With equipment finance, there's no jumping through the same hoops as with commercial and industrial loans. For example, typically most lenders want to see two years of financials, which startups, by definition, don't have.

Equipment finance is a \$725 billion industry in the United States, and it is easy to find industry participants that customize their service offerings by end user industry, equipment type, ticket size or end user business size. There are equipment finance companies that offer special programs for startups, and companies that specialize in services for small and mid-size businesses.

This is a particularly good time to finance equipment because there is so much liquidity in the marketplace. There are many funding sources – leasing companies and banks – that are looking to lend because they have the cash available to deploy. So, a highly competitive marketplace makes this a favorable time for end users to finance productive equipment.

In addition to current finance market conditions, the following are among the most compelling benefits for the financial and operational needs of startups and small businesses:

100 percent financing with no down payment

Unlike with most traditional lenders, it is possible to arrange 100 percent financing of equipment with no down payment. This is a critical benefit since cash flow is often a concern for small and new businesses. Holding on to cash, or working capital, enables it to be used for other areas of the business, such as expansion, improvements, marketing or R&D.

Elimination of risk of ownership

A business just starting out can use equipment financing to help mitigate the uncertainty of investing in a capital asset until it achieves a desired return, increases efficiency, saves costs or meets other business objectives.

Expense planning for cash flow and business cycle fluctuations

Financing equipment helps maintain cash flow and greater certainty in budgeting by setting customized rent payments to match cash flow and even seasonal cash flows.

Meet the business's equipment needs

Leasing, loans or other financing enables businesses to acquire more and better

equipment than they could have without financing. It is more feasible to make monthly payments than to make large cash outlays for equipment up front.

Updated technology/obsolescence management

To be on the cutting edge and be competitive, businesses need access to new technology. Certain leasing finance programs allow for technology upgrades and/or replacements within the term of the lease contract. Also, since the lessor owns the equipment, it bears the risk of the equipment becoming obsolete.

There are many additional features of using leasing or other financing to acquire equipment that are also highly beneficial. The equipment expertise of equipment finance representatives makes them valued consultants to end users, providing services that range from setting residual rates through lifecycle asset management solutions. Many financing companies provide asset management services that track the status of equipment, know when to upgrade or update it, and provide services relating to installation, use, maintenance, de-installation and disposal of the equipment. Equipment disposal, particularly of computers and IT equipment, can prevent end users from incurring legal penalties for improperly disposing of such assets, which are often regulated by federal, state and local governments. Equipment management by a third party, such as an equipment financing company, can enhance the ability of a business to focus on its core operations. **IT**

William G. Sutton is president and CEO of the Equipment Leasing and Finance Association (www.ELFAOnline.org), the trade association that represents companies in the \$725 billion equipment finance sector, which includes financial services companies and manufacturers engaged in financing capital goods.

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And Then There Were Three....

As I write this, Federal Communications Commission Chairman Julius Genachowski and long-standing FCC Commissioner Robert McDowell have packed their offices and departed from the FCC. While President Obama has nominated Tom Wheeler to replace Genachowski, we will likely have to wait for Senate Republican leaders to nominate McDowell's replacement so both candidates can go through Senate confirmation hearings at the same time. This is typically not a quick process. In the interim, Acting Chairwoman Mignon L. Clyburn and our two newest commissioners, Jessica Rosenworcel and Ajit Pai, will carry on the work of the FCC.

While having only three FCC commissioners is not completely unusual, I had feared that the painfully slow progress on the Universal Service Fund to Connect America Fund transition would grind to a screeching halt. Fortunately, this proved not to be the case. Within a few short days of Commissioner Clyburn taking over the reigns as interim FCC Chairwoman, she issued the long-awaited CAF Phase 1 round 2 order. Hallelujah! The leadership of the FCC has finally taken the action needed to free our country's frozen broadband capex from the heavy shackles of regulatory uncertainty and complex rules and conditions.

The 2013 CAF Phase 1 order is a godsend for rural communities across our nation for a number of reasons. First, this order addresses many of the issues that prevented price cap carriers from accepting the 2012 CAF Phase 1 funding, which resulted in nearly \$2 out of every \$3 being left unclaimed. Secondly, this order provides a mechanism for price cap carriers to request funding beyond their allocation. This will help safeguard that the entire fund is available to the full pool of price cap carriers, which will ensure that this money gets used to build out broadband facilities reaching the maximum number of rural communities. Most importantly, this order stimulates private capex investment, with the three largest rural carriers committing to match CAF funding dollar for dollar. While CAF Phase 1 is a price cap carrier program, its momentum provides the desperately needed tailwinds to restart capex investment and new broadband projects in the tier 3 rate-of-return markets as well.

Easing Frustrations over CAF Phase 1 Restrictions and CAF Phase 2 Delay

The 2013 CAF Phase 1 order, coupled with several other recent developments with the FCC, are providing a sense of restrained optimism in the telecommunications industry that the wheels are finally in motion to enable as many Americans as possible to enjoy the benefits of broadband. A key indication has been the FCC's release of the CAF Phase 2 Greenfield Model in April. This is a model for estimating the monthly cost of operating and maintaining a fiber-to-the-premises network. It is important for carriers to understand that the FCC is not telling them which technology to use during construction or upgrades, but just providing a model for estimating costs. Footnote 61 to the FCC order explicitly states: "Adoption of a model platform that incorporates this network technology does not imply, and this Report and Order does not dictate, that carriers must necessarily extend fiber out to the premise. The requirements laid out in the USF/ICC Transformation Order focus on the services delivered, not the technology used."

While this model does not dictate technology, it does provide a reasonable cost model that can be applied to any technology, removing previous concerns and uncertainty. While this is just one of many steps toward defining the CAF Phase 2 program, it does provide optimism that the FCC is on track to getting this program in place by the end of the year, albeit a year past the original plan. It is critically important that CAF Phase 2 is finalized this year and that funding gets launched for 2014 as CAF 2 provides \$1.8 billion per year

of broadband funding (vs. \$1 billion of frozen support + \$300 million CAF Phase 1 funding). The USF transition phases out the implicit support from Intercarrier Compensation, with the intent for this funding to be replaced with the explicit support from CAF Phase 2. The ICC phase out began last year, but CAF Phase 2 has been delayed a year, leaving a significant gap in price cap carrier subsidies. The recent FCC progress on CAF Phase 2 is very encouraging, and hopefully we will see this funding flowing by this time next year.

Strong Tailwinds for Rural Broadband Capex Investment

While the 2013 CAF Phase 1 order will be a strong catalyst to fuel rural broadband capex investment in tier 1 and tier 2 territories, we are also seeing positive momentum in the tier 3 rate-of-return carrier territories. Earlier this year, the FCC issued the Sixth Broadband order, which addressed issues with the Quantile Regression Analysis benchmarks. Previously, under the CAF program, the subsidies of the more than 600 rate-of-return carriers were subjected to an annual adjustment based on how their spending compared against that of their peers. This was based on a 90th percentile QRA benchmark for capex and for opex.

Evaluating capex and opex individually versus combined resulted in a serious overcorrection, negatively impacting the funding of more than 170 of these rural service providers. As a result, these rural service providers stopped spending on new broadband deployment projects. The lack of visibility into their ability to fund multi-year projects due to annual adjustments further slowed projects. The FCC realized this flaw in the rules and has now made an adjustment for the QRA benchmark to evaluate total spending (capex + opex). This significantly reduces complexity and the number of rural service providers that are negatively impacted with funding reductions. In addition, the FCC Wireline Bureau has been asked to evaluate going from annual adjustments to multi-year adjustments. **IT**

Gary Bolton is vice president of global marketing at ADTRAN Inc. (www.adtran.com).

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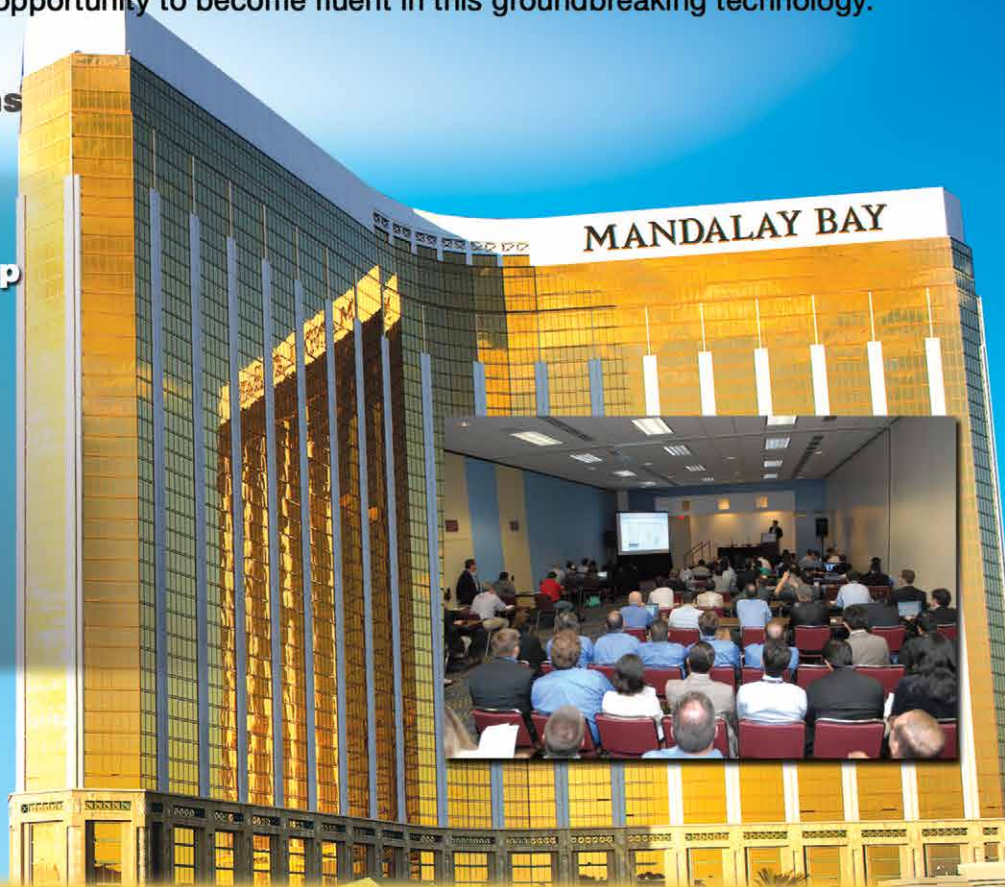
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Security

What to Consider When Addressing BYOD Security and Management

Clearly, the bring-your-own-device workplace trend is here to stay. As a result, more companies are moving to formulate BYOD strategies so they can get a handle on what's happening with this growing sea of devices as they relate to corporate networks and business data.

Aragon Research Inc. in a research note released earlier this year talks about the need for a holistic approach to BYD management and writes: "Enterprise device, application and infrastructure management tools are rapidly evolving to help manage different aspects of the new mobile, bring-your-own enterprise. In the near term, businesses will face a fragmented market that includes public and private app stores along with MDM, MAM and emerging EMM vendors. Each of them is valuable for certain business needs and circumstances, but the coming consolidation in this market will have important consequences, and should be reflected in relatively short-term planning."

Michael Markulec, CTO of Lumeta, a Bell Labs spinoff that provides enterprise network discovery and security software to large global companies, says the first step in addressing BYOD is to know what devices — wireless and wireline — are connected to the corporate network. The challenge with wireless, he notes, is those devices are not there for long.

If you're going to allow a device to join the network, he continues, that device has to have an agent, which is a small piece of software on the device so you can monitor and secure it, says Markulec, who notes that Lumeta has been working with the Trusted Computing Group on network access control.

He adds that we can expect to see a growing incidence of split-purpose machines, which when on the corporate network only have certain applications and functionality enabled. These "split-personality" wireless devices, as Markulec calls them, have already seen a fair amount of uptake in the government and medical arenas. But most of the wireless devices of that nature today rely on custom software, he adds, noting that now suppliers are coming out with prepackaged solutions to transform BYOD devices into split-personality units.

Doug Louie, senior director of product marketing for enterprise at Smith Micro, a 30-year-old public company that has been

Aragon Research Recommends These Key Priorities

- authenticate and manage user identity;
- control the devices;
- manage the apps;
- protect enterprise data;
- monitor the network;
- optimize performance of the systems;
- administer inventories and expenses; and
- oversee a workplace with users as the perimeter.

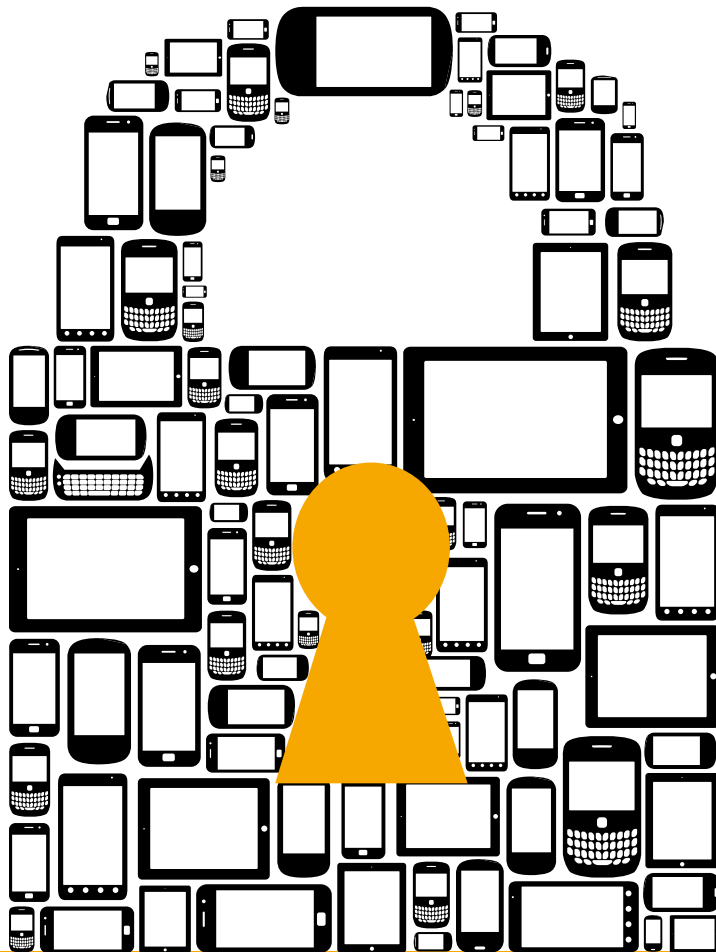
in the device management space for more than a decade, says that connection management is a key part of the mobility management picture. By setting policy, organizations can define what devices can connect and to what on the corporate network, Louie explains.

Smith Micro has built geofencing into its solution so that organizations can see when a user is inside or outside certain physical parameters. That way, if the organization requires, it can set policy so that the wireless device is locked down when it's off premises. This capability is important for organizations for which security is a key consideration.

He adds that Smith Micro's mobility management solution also maintains session persistence so users don't have to relogin to sessions if connection goes down; that, he says, can be a very important features for such users as police departments, in which connectivity may play a role in life-and-death situations. **IT**

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By Chris Vitek

Vonage Goes Native With WebRTC

Much of the discussion related to WebRTC is about the browser manufacturers. Google and Mozilla are supporting the implementation within their browsers. Significantly, there are now more than one billion browsers in use that are WebRTC enabled. Microsoft and Apple will soon have to make a choice. Vonage Mobile, on the other hand, is taking the high road. You see, Google's open source offer of free software does not stipulate that it must be implemented in a browser. Part of the open source offer is what is known as Native Implementation. Native is an app that contains the Google code that runs natively on the operating system of the device. It does require a download, but it does not come with the browser baggage. You can find the app on Play and the App Store right now.



Vonage Mobile's product is targeted at mobile video, audio and text. The peer-to-peer nature of WebRTC fits perfectly into Vonage Mobile's architecture where it offers a directory and connectivity service on other people's networks. Further, the company offers out of the box integration with your address book and integration with your Facebook account. The app uses SMS to invite non users of the service to participate. The interface is uncluttered and intuitive to use. Additionally, the company is using SIP signaling so the app leverages the substantial investment that Vonage Mobile has already sunk into its SIP network.

Sagi Dudai, vice president of mobile development for Vonage and general manager of Vonage's Israel office, characterizes the SDK development efforts as challenging and interesting. Below are some of the topics that we discussed.

Quality

The company was looking to deliver a high quality experience and the maturity of the VP8 video, Opus, iSAC and iLBC audio codecs seemed to have satisfied

this requirement. The average video call is about 4.5 minutes. As an observation, anyone that has worked with mean opinion scores will know that 4.5 minute calls are a marker for high quality.

looking to deliver a video and audio experience on multiple mobile operating systems, and this issue alone required that it have access to source code. Proprietary software vendors are not very keen on this idea.

Vonage Mobile has the distinction of being the first communications carrier to offer a WebRTC-based product for consumers.

Open source

The company had looked at using proprietary software but ultimately decided on open source. The key reason was that it was

CPU issues

A large part of the video experience is driven by CPU speed. So much so that the mobile industry measures every new phone

by the number of frames per second that it can process. This is particularly relevant to video communications. Given the wide variety of smartphones in the marketplace, there was a need to optimize the software to support this variability. This would have been much more difficult in a browser implementation.

Federation

With WebRTC, federation is nowhere near as complicated as SIP or Lync federation. Basically, WebRTC federation is driven by the endpoint, not a server; although, in the case of Vonage Mobile federation will be based on a proxy implementation since free-keying a URI for an alternative WebRTC directory is not a concept that is built into the interface. Remember, it is not a browser. In this case Vonage will need to allow access to such directories. Basically, this is a one-line URI housed on the proxy. The company is conversational about this, but it is an enterprise feature and I am sure that there will be more discussion before it is productized.

Adoption

Notably, the app has been around for a while. Early versions were voice and text only. As you would expect, the versions that are already downloaded are being systematically updated to the video version. Vonage was not ready to offer a usage statistic yet, but it did offer the fact that the company has seen a heavy spike in utilization.

Vonage Mobile has the distinction of being the first communications carrier to offer a WebRTC-based product for consumers. It is well designed and has the financial backing to scale very quickly. Updates to this product will be coming on a monthly basis. Given its ease of use and access, I would expect that there will be several mobile carriers that will shortly see a further decline in the use of their voice services. **IT**

Chris Vitek is president of WebRTC Strategies Inc., and a speaker at the upcoming WebRTC Conference & Expo in Atlanta (www.webrtcworld.com/conference).

Infonetix: Comcast Leads Hosted VoIP Market

Comcast, 8x8, Verizon, and West are the top hosted VoIP providers in North America, according to new data from Infonetix Research, which notes that the hosted VoIP and UC market in North America remains highly dynamic. "Comcast's nationwide push of its Business VoiceEdge service helped Comcast grow its installed base and maintain its No. 1 position in Infonetix' hosted VoIP leadership scorecard for the second year in a row," reports Diane Myers, principal analyst for VoIP, UC, and IMS at Infonetix Research. "8x8 follows right on the heels of Comcast, making a big leap this year thanks to improved financial stability, continued growth of its installed base and a focus on service enhancements." Myers continues: "And for the fifth straight year, Verizon is No. 1 in our IP connectivity leadership scorecard, followed closely by XO." The top hosted VoIP providers had more than 200,00 seats each at the end of 2012.

ShoreTel Brings Enterprise UC to iPads, iPhones

ShoreTel recently unveiled a device that it says transforms iPads and iPhones into desk phones and enterprise collaboration tools. The new ShoreTel Dock works with ShoreTel Mobility software to enable users to place and answer calls by simply picking up the handset and dialing a number on the dial pad or on the device's screen. "We didn't try to change or replace devices users already love, but instead enabled those same devices with enterprise UC to give end users a dynamic productivity tool that supports their own work rhythm," says Pejman Roshan, vice president of product management at ShoreTel. The ShoreTel Dock, which will list for \$349, is expected to be available this quarter for both premises-based and cloud platforms.

Movius Opens CAFÉ

Movius has launched its CAFÉ cloud solution to service providers around the world. CAFÉ can deliver converged messaging solutions such as visual voicemail, which allows users to see a list of messages using their smartphones and simply click to listen to the specific message; and virtual communications such as the myIdentities application, which separates, controls and protects multiple personas on the same device. The company is targeting Europe, Asia and the U.S. as key regions to offer CAFÉ as a service. It will initially host CAFÉ platforms in the U.S. and Europe, the latter being hosted by its partner Monaco Telecom. Other regions will follow later this year.

Distributor Jenne Signs On with 911 ETC

Jenne Inc., a value-added distributor of IP telephony, audio and videoconferencing, unified communications, data networking and security and surveillance products, has signed a distribution agreement with 911 ETC, the industry leader in enhanced E911 services. Under the terms of the agreement, Jenne will distribute 911 ETC's solutions as the E911 piece to its IP telephony and unified communications solutions portfolio. "An E911 solution is a key part of any IP telephony or unified communications deployment," says Vince Piccolomini, vice president of business development at Jenne Inc. "Through our offer of the 911 ETC products VARs will be able to deliver a solution that brings organizations into compliance with current regulatory measures while providing additional safety measures in the workplace. This solution is an ideal value-add during the planning phase and also as a potential add-on to an existing telephony system that has already been deployed. It represents a great opportunity for Jenne resellers."

Video

Telepresence – It's What's Next for Videos and Education

Our institutions – Moraine Park Technical College and Minnesota State University-Mankato began adopting video technology as early as the 1990s. But it wasn't until the use of telepresence that we saw video pushed to the next level, enabling institutions like ours to connect students across campuses and across the globe.

Moraine Park Technical College has three campuses about 30 miles apart in Wisconsin. In the early 1990s, we began offering classes via ITV to expand educational opportunities for students. Classes were often comprised of small groups of students at the three campuses, with the professor at one campus and the other two campuses connected via ITV on 19-inch, low-definition monitors. The audiovisual quality was poor, but the technology expanded course offerings for students at all three campuses. In 2000, Moraine Park upgraded to IP-based videoconferencing, which improved audiovisual quality but was still far from lifelike and plagued by user error. In 2010, the college implemented a telepresence room on each campus. Faculty and students immediately embraced the technology for its ease of use and lifelike experience.

Minnesota State University-Mankato has a satellite campus in Edina, Minn., nearly 100 miles from Mankato, which also needed to connect students and faculty across the campuses. Like Moraine Park, MSU-Mankato started with ITV before moving to IP-based videoconferencing in 2010 and then to telepresence last fall. Selling the idea of telepresence isn't necessary; students and faculty are clamoring to take and deliver classes in the telepresence rooms. Myriad applications of the technology are already in use and planning for additional ones is under way.

In Minsky's essay for the June 1980 edition of *Omni Magazine*, he wrote, "[telepresence] suggests future instruments that will feel and work so much like our own hands that we won't notice any significant difference." Likewise, we explain that you have to experience it to believe it, which sounds clichéd, but it's true. After a few minutes in a telepresence room, the technology disappears. Students forget they aren't in the same room as their peers. If a student on one campus drops a pen on the floor, a student at the other campus will bend down to pick it up – it's that real.

It is important to explain that telepresence is more than just videoconferencing. Guest instructors can teach from across the nation or around the globe. Soon, MSU-Mankato may use telepresence to deliver Ph.D. programs to southwestern Minnesota for the first time.

Telepresence is also a valuable marketing tool. Students want to see the latest technology, especially if they are pursuing a

technical course of study. At Moraine Park, which also features a computer numeric control lab and nursing simulation lab, all prospective students visit a telepresence room. Moraine Park and MSU-Mankato are also marketing the technology to their local communities and using it to connect faculty with their counterparts at other institutions.

While telepresence offers compelling benefits it also brings challenges that are important to consider before implementation.

One of the biggest challenges is demonstrating return on investment. Telepresence is more affordable than ever before, but like any major technology investment, it's not inexpensive. Boards of trustees and other stakeholders need to understand the hard costs, as well as the benefits, both tangible and intangible. Student engagement and room usage are two important metrics.

Moraine Park Technical College conducts a survey of students each semester to gauge their engagement with face-to-face classes (no telepresence), telepresence classes, and online classes. In a recent survey, 19 percent of students said they were more engaged in a telepresence class than in a face-to-face class. It's not surprising: The concentric circle layouts and tiered seating means students are looking at each other across the campuses, rather than at the backs of the students in front of them. Each seat has its own speaker, so every student is heard. There's no hiding, and as a result, faculty say they are better able to judge student comprehension, know when it's time to move on, and when they need to spend a little more time on a topic.

At both institutions, telepresence is in such high demand that faculty members are willing to teach at off hours – 8 a.m. on a Friday, for example – just to use the telepresence rooms. At Moraine Park, telepresence rooms are booked 65 percent of the time, compared to 20 percent for other classrooms.

In addition to up-front discussions about ROI, we also recommend careful attention to project planning. Successful implementation involves many elements beyond installation of the technology itself. The technology must blend into the environment. To achieve that result, HVAC sound must be moderated, lighting must be controlled, and cables must be run under the floor. Room remediation takes both time and detailed project management. **IT**

Pete Rettler is West Bend and online campus and community administrator at Moraine Park Technical College, and Ed Clark is vice president and CIO at Minnesota State University-Mankato.



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Video

Driving TV Viewership via Mobile Devices

Though there are numerous ways available for viewers today to retrieve content after it has been aired, the majority of TV viewing is still linear, i.e. scheduled TV programming. Sports, news and reality shows are the natural leaders of linear TV, and best demonstrate a phenomena that is unique to the TV industry, prime time rating.

Prime time rating is a strong tool for broadcasters and content rights owners to get quantitative feedback on their programming and audience engagement. It is a specific time frame in which %X of the general population becomes a captive audience, and as such, it should be nurtured and developed.

In recent years technology has made video and live TV accessible on mobile devices, and by utilizing improved encoding technologies and higher broadband speeds, mobile users can watch video and TV almost everywhere. But how can that experience transform users from receptive viewers to active participants and consumers? How can the device and its functionality enhance viewer engagement even further, to extend traditional prime time TV to new time slots and new revenues?

Harnessing the power of video on mobile

Through devices, broadcasters gain daylong access to audiences, and can therefore introduce new prime time slots. For this to happen in a way that benefits the broadcaster or content rights owner, watching and interacting with the video on the mobile screen must be designed and served to viewers as part of a comprehensive offering, under the provider's own brand.

In addition, before applying all the latest tricks and fireworks to mobile TV viewing, the video experience itself should be consistent with the same high quality and accessibility of the living room screen, even when surges in demand occur, especially during live TV events.

Once brand, users and revenue ownership is secured for the new mobile service, and accessibility to content is guaranteed, the service can be further enriched as a stand-alone service, and as a complementing experience to TV viewing, also known as second screen. In both cases, viewers enjoy a variety of exciting gamification and social TV activities. To make the experience engaging and rewarding, gamification elements and social TV participation can be sponsored, and connected to the physical retail world to offer real rewards,

coupons and redeemable vouchers. All of these activities deepen viewer loyalty to the broadcaster brand and create new revenue opportunities through mobile advertising and content related retail offers.

The right video experience for each TV genre

A couple of Applicaster's recent customer deployments presented here portray ways in which mobile devices can be utilized for a variety of TV genres, drive viewership and complement TV viewing.

The first example is Canal Panda in Spain, the Kids Pay TV Channel and the latest channel launch of Chello Multichannel, a Chellomedia company and the largest independent TV channel producer in Spain and Portugal. Canal Panda launched a subscription-based live streaming, VoD and social TV application for the iPhone and iPad, developed and hosted by Applicaster. The offering, designed with a kid-friendly UI, includes live streaming, on-demand video, a synchronized EPG, social media, and games. It even enables the viewer to create a favorite clips library, and view it even without any Internet connectivity.

In less than three months after service launch, Canal Panda reported that ratings increased from 0.3 percent to 0.95 percent. That is attributed solely to the usage of mobile and tablet apps.

An additional successful mobile experience is Televisa's introduction of the first video platform with the Facebook-oriented Video Player. For Televisa, Mexico's biggest television broadcaster and the world's top producer of Spanish-language programming, the mobile video application enables viewers to make social expressions in relation to the content they are watching, using a set of pre-defined emoticons, and achieve badges and rewards. This new platform offers real insight into social recommendations for bringing in more viewers and additional revenue sources from in-player advertising space.

Mobile video, the road ahead

As these two deployments demonstrate, video on mobile devices has yet to unlock its great commercial potential, as we have touched only some of the innovative technological capabilities and the creativity behind new TV formats. As video and TV become part of our lives on the go, we will see more viewer-driven applications and services that will enhance the synergy between the content the experience and the variety of screens. **IT**

Sharona Meushar is the marketing and media director at Applicaster (www.applicaster.com).



The Voice Peering Fabric ("VPF") is a private Internet that expands to major U.S. cities and abroad, uniting domestic and international telecom providers to bring the most secure and quality experience for the exchange of voice, video and data. It is a unique environment for enterprises and carriers to buy, sell and peer communications services on their own terms. Businesses now have control over and choices about their communications needs.

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White Spaces

Bridging the Digital Divide

In a world that runs on technology, it's hard to believe that about one third of the global population is unable to access the Internet – Americans accounting for approximately six million of that number. These aren't people who have chosen to fall off the grid, or the others who don't know how to turn a computer on. These are regular folks who want Internet access, but happen to live in some of the most rugged, expansive, or under-developed areas across the planet.

Now, there is a viable solution to the problem of rural connectivity – TV White Spaces. For Americans, these analog frequencies have been left unused since the FCC Digital Television Transition, which required TV stations to broadcast exclusively in digital starting in 2009. White Spaces technologies have powerful signals that can easily penetrate areas where it is nearly impossible to achieve line-of-sight, and are becoming increasingly available as many more countries have initiated, if not planned, a switch from analog to digital.

Recent trials both in the U.S. and abroad have begun to prove that TVWS is a practical solution to rural broadband. Northern California's Gold Country is currently serving as a testbed for the first deployment of a TVWS broadband network, thanks to El Dorado County wireless Internet service provider Cal.net and RF design firm Carlson Wireless Technologies. Under an FCC-granted Special Temporary Authority license, the project looks to validate the efficacy of TVWS products in real-world scenarios while qualifying their potential for the millions of other rural residents throughout the U.S.

Still in its first month of deployment, the TVWS network is providing noticeable benefits: smooth videoconferencing, superior remote-access capabilities, and data rates of up to 3Mbps downstream – delivering access to telephony resources that were previously unattainable. Resident and local businesses now have the capacity to tap digital tools that are fundamental to both individual and economic growth.

TVWS broadband is also proving its worth internationally. A trial led by Google, Carlson Wireless, and six other partners is currently providing a TVWS network to schools in Cape Town, South Africa. The network utilizes multiple base stations in one location to deliver broadband Internet service to ten locations within a 10-kilometer radius. Much like the El Dorado deployment, the Cape Town initiative looks to support the efficacy of TVWS spectrum use.

To be successful, both trials have to show that quality Internet can be offered over White Spaces, and without interfering with TV broadcasts and licensed spectrum holders. To meet this requirement, TVWS radios have been equipped with built-in database technology that monitors and configures the use of vacant spectrum, making interference an unlikely event. The success of projects like these will ultimately decide the regulatory framework in support of wider TVWS Internet use, potentially revolutionizing the communications industry on a global scale.

The most significant impact of wider TVWS Internet use will be to rural residents, low-income settlements, and populations living in emergent nations. TVWS technology is particularly pertinent to the development of communities that lack access to basic infrastructure and services, which often includes standard telephony resources like copper phone lines and optical fiber cables. With the ability to reach these communities, TVWS will bridge the digital divide by opening the Internet – a hub of educational, economic, social, and political discourse



– to the disconnected world. If you imagine one third of the global population now adding to the already high level of Internet engagement, it's easy to see the revolutionary potential of TVWS.

As with any new technology, there are always roadblocks. The idea of collectively sharing a resource – in this case, spectrum for broadband connections – is foreign to the communications industry, which has evolved to become a monopoly of a few large companies looking out for their own individual and financial interest. The lack of public awareness only incites these incumbent spectrum holders to withhold their spectrum from secondary users, thwarting TVWS innovation. However, the key objective for trials such as the El Dorado and Cape Town deployments is to demonstrate the capabilities of White Spaces, encouraging communication regulators to introduce policies that motivate and reward TVWS development and spectrum sharing. With greater acceptance, TVWS will lead the way into a world in which every person has the ability to connect and interact online. **IT**

Jim Carlson is CEO, president and chief engineer at Carlson Wireless Technologies (www.carlsonwireless.com).

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Wearable Tech Could Grow Even Faster than 40 Percent a Year

Stephen Wolfram, the man behind Mathematica and Wolfram Alpha, is now focused on personal analytics. He has developed an app for Facebook that can tell you interesting facts about your friends and relationships. He also records his phone calls and keystrokes and monitors his personal productivity in this manner. He believes that by using such data, people and companies will become more efficient. In fact he compares the ability to monitor this information with investing. The key takeaway here, according to TMC's Rich Tehrani, is that wearable tech + big data analytics means better personal and corporate productivity. If purchasing decisions in this new market begin to be driven by such logic, the already optimistic estimates about the growth of wearable tech could be low. This, Tehrani says, could be a very big deal for this emerging space as some analysts already say the market will reach \$5.8 billion in 2018, representing a compound annual growth rate of 40.8 percent from 2012 to 2018.

payvia Acquires Mogreet for Mobile Payments

A company called payvia, which calls itself the leader in direct carrier billed mobile payments, is buying Mogreet, a mobile video and rich media messaging engagement solutions provider that is used by thousands of marketers, retailers, small businesses and developers including major brands such as Cox Media Group, Emmis Communications and Gamefly. The full Mogreet team will join payvia, with Mogreet Founder and CEO James Citron serving as payvia's chief marketing officer. The acquisition is significant, says payvia, "as it will set payvia apart from the rest of the mobile industry with a simplified solution that increases revenues for businesses through highly targeted mobile payment transactions and relevant ongoing engagement via branded communications, offers and mobile relationship management."

Small Cells with Wi-Fi Expected to Reshape Market

"The use of Wi-Fi functionality in small-cell base stations will be a game changer for cellphone service providers, easing heavily congested data pipes while linking together billions of devices into a single network architecture," according to the IHS iSuppli, which expects large-scale deployment of small cells to start in 2014. "By combining the different elements of just such an architecture, wireless carriers can use small cells to deploy optimized solutions tailored to the coverage and capacity requirements of networks and their different locations," says Jagdish Rebello, Ph.D., director for consumer & communications at IHS. "For entrepreneurs, intellectual-property firms and wireless providers, the offloading approach also affords them an opportunity to develop a unique 'network of networks,'

which can deliver seamless handoffs as users move from cellular to high-bandwidth personal networks like Wi-Fi."

ACLU Files FTC Complaint over Android Smartphone Security

The American Civil Liberties Union has filed a complaint with the U.S. Federal Trade Commission asking it to investigate the major wireless carriers—AT&T, Verizon, Sprint and T-Mobile—for failing to warn customers about un-patched security flaws in the software running on their phones, reports TMCnet's Peter Bernstein. The complaint says the vast majority of customers of millions of smartphones running versions of Google's Android operating system, "Never receive critical software security updates, exposing consumers and their private data to significant cybersecurity-related risks." The 16-page complaint argues that the major wireless carriers have engaged in "unfair and deceptive business practices" by failing to warn their customers about known, un-patched security flaws in the mobile devices sold by the companies."

AT&T Launches Aio Wireless Prepaid Service

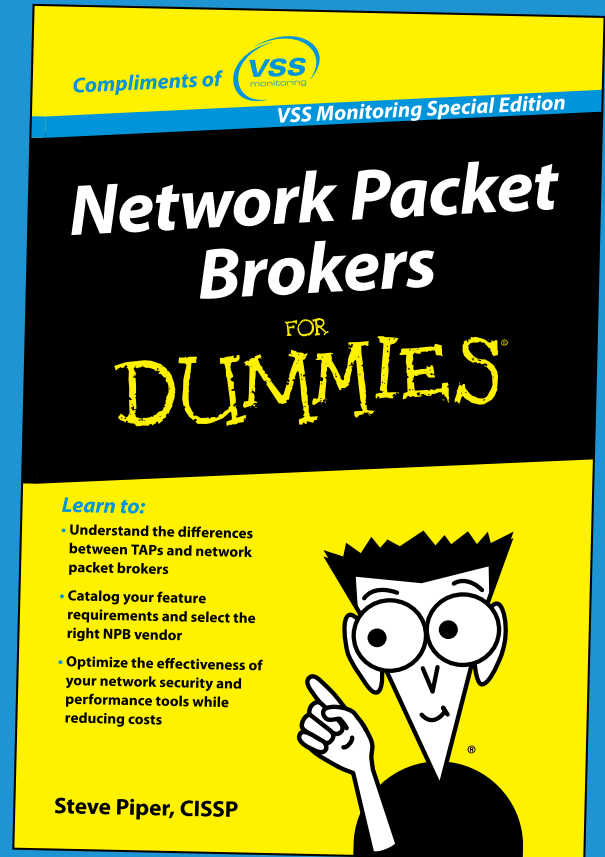
Tech industry analyst Jeff Kagan recently commented on AT&T's new prepaid service, saying: "This is not a transformation of the wireless space. Rather this is a new slice to the wireless pie giving customers more choice. The wireless world suddenly has another competitor. If handled correctly, Aio Wireless could grow into a well-known brand name in the pre-paid market. Aio Wireless has the marketing know-how of AT&T behind them. Aio Wireless is a prepaid service designed to serve this young and rapidly growing market segment." Kagan added: "The wireless industry reinvents itself every few years. The last major transformation was the smartphone revolution starting about six years ago. Now it looks like the pre-paid market is the next focus of growth."

Ceragon Expands FibeAir IP-20 Product Series

Ceragon Networks Ltd. has introduced the newest additions to its FibeAir IP-20 product series – the FibeAir IP-20A and FibeAir IP-20C HP. "Our commitment to the North American market is demonstrated in the solutions we are introducing today," says Ira Palti, president and CEO of Ceragon. "Our expanded FibeAir IP-20 product series which features the most compact, high power radios in the industry answers the unique requirements of North American network operators for high capacity wireless hauling that can facilitate the expansion of 4G/LTE. Our growing North American customer base can now benefit from a versatile set of solutions for a wide variety of deployment scenarios. The feedback we have received from initial deployments and ongoing customer trials is extremely positive, and we look forward to presenting the platform to additional operators throughout the year."

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Digital Ordering Means Business for Restaurants

It's no secret that the restaurant world is undergoing a massive wave of change. Led by advancements in technology on both sides of the counter, the way we interact and transact with restaurants is evolving rapidly, especially our expectations for how we are able to order and pay for our meals and beverages.

For restaurants that live and die by speed of service (namely of the fast-casual and quick-service varieties), the proliferation of smartphones represent an opportunity for restaurant operators to extend their reach beyond the confines of a physical building and into their customers' hands via digital ordering.

Aside from the novelty – and some might even say fun – of letting your customers use their phones to order and pay, there also happen to be some sound economic reasons for restaurants to get on board with this new movement.

Here are just a few of the benefits to offering digital ordering:

Convenience means business

Restaurants that use Splick-it to power their digital ordering receive a boost in their average ticket size of 25 percent over transactions placed using traditional means. Therefore, simply by converting the everyday walk-ins and phone-ins to digital orders, a restaurant operator could make a significant impact on his or her bottom line. The ease of making modifications to an order, upsell techniques and the ability to save previous, customized orders for future use are some of the factors we believe account for this lift.

Coming back for more

It's simple. The data shows customers will order from a restaurant more often because it offers digital ordering. A report published by the Center for Hospitality Research found that operators that accept digital orders saw a 42.5 percent increase in frequency of takeout orders.

Enhanced experience when not inside the restaurant

Digital ordering outfits restaurant operators and marketers with detailed information about their customers' buying

preferences. With every digital order, data about who ordered what, when and where can be easily captured and stored. As orders accumulate, this data becomes increasingly valuable, revealing patterns in how and when a particular person tends to order. The benefits of this information span both sides of the counter. Restaurant marketers can use this data to their advantage with greater efficiencies in how they spend and target their marketing efforts, and customers receive less irrelevant communications from a brand.

But like any new technology trend, restaurant adoption of digital ordering doesn't come without its challenges. The crux of the problem? Information asymmetry. Restaurant operators believe customers feel one way about the digital ordering experience (and they believe it's usually negative) while research suggests that customers actually prefer it to the alternatives (e.g., walk-in, phone, fax).

For example, restaurant operators have expressed concern that the impersonal nature of online ordering has an adverse effect on customer satisfaction. However, that's not the story from their customers' point of view. In the same Center for Hospitality Research study mentioned earlier, 36 percent of customers stated that they were more satisfied by the impact of digital ordering, 22 percent said there was no difference and the remainder said they couldn't tell if there was a difference.

The disconnect between operator and customer

sentiment around digital ordering becomes even more apparent when comparing customer demand with current rates of restaurant adoption. According to this year's industry forecast published by the National Restaurant Association, 40 percent of restaurant-goers said they would use digital ordering if available. However, less than 2 percent of all quick-service restaurants have adopted these capabilities. Restaurant operators that continue to ignore this demand will do so at their own peril.

Fortunately, the tides do appear to be changing. In the same forecast, the National Restaurant Association also stated that 48 percent of restaurants said they plan on investing more in consumer-facing technology this year. That can only mean good things for restaurant operators and guests alike. **IT**

Rob Taylor is the co-founder and chairman of Splick-it (www.Splickit.com), a mobile and online ordering provider for restaurants.



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INTERNET TELEPHONY Announces TMC Labs Innovation Award Winners

Welcome to the 14th annual INTERNET TELEPHONY magazine TMC Labs Innovation Awards where we honor innovative technologies. This year we had some interesting applicants, including one that helps companies with antiquated CAT3 cabling deploy VoIP, another that brings Skype-like functionality to carriers networks, and yet another that bundles a phone system with specialized dentistry software with deep integration. TMC Labs has enjoyed discovering and testing innovative products and services within the VoIP industry for many years, and one of the things we enjoy most is awarding TMC Labs Innovation Awards to innovative VoIP products.



TMC Labs uses a rigorous application and selection process when choosing innovative products and services. This year, TMC Labs proudly bestows 11 companies with a TMC Labs Innovation Award.

ADTRAN Inc.
NetVanta 1535P Gigabit Ethernet Switch with
ActivReach
www.adtran.com

Enterprises and SMBs – including office buildings, schools, retail stores, hospitals, distribution facilities – are looking for maximum flexibility in designing next-generation networks for IP-based voice, hosted services, cloud-based UC while utilizing existing voice-grade wiring infrastructure, and transitioning to a gigabit future. Additionally, hosted voice/UC service providers can utilize this solution for their capabilities.

Many older buildings are wired with CAT3 or voice-grade cabling infrastructure for their legacy phone systems. These organizations that have looked into upgrading to VoIP PBXs are told they cannot take advantage of the latest IP voice, unified communications, and data network capabilities since CAT3 is not suited for Ethernet. Traditionally, businesses have been forced to run new, cost-prohibitive cable to enable VoIP and high-speed Ethernet.

ADTRAN's ActivReach is an innovative technology that breaks down these barriers and enables the power of Ethernet even over CAT3 cabling. ActivReach, currently available on the NetVanta 1535P Gigabit Ethernet switch, extends the reach of Ethernet across a variety of cable-plant infrastructures (CAT5e,

CAT3 or even voice-grade copper) and at longer distances. This allows businesses to deploy data networking speeds up to 100mbps at triple the reach of standard Ethernet (up to 365 meters/1200 feet). Furthermore, infrastructure upgrades can be performed incrementally, and the same switch port previously configured for ActivReach can be transitioned to gigabit networking speeds once new cabling is put in place, maximizing return on investment while transitioning toward gigabit.

In other words, since ActivReach can be enabled or disabled per port, it can deliver gigabit connectivity speeds to endpoints within 100 meters of the switch and enable ActivReach for the long-distance endpoints that also need network connectivity. This can come with an enormous cost savings over the purchase of multiple switches to provide connectivity to all endpoints and some type of networking infrastructure to connect them all together (usually expensive fiber).

With ActivReach, over certain distances, it is possible to split the individual pairs within a CAT3 or CAT5 cable to run PoE and data over each individual pair. Thus, a single 100mbps uplink with PoE can become four 100mbps uplinks with PoE. In this scenario, cost is minimized considerably since no new cabling has to be put in place. A very innovative solution indeed!

01 Communique Laboratory Inc.
I'm InTouch Meeting
www.01com.com

I'm InTouch Meeting is one of the most innovative online meeting products you will find due to its ability to have both VoIP and PSTN phone bridge intermixed and support for up to 15 attendees. Many

competitors provide only one-to-one meetings or don't offer a VoIP option. Besides VoIP, a PSTN phone bridge is provided for real-time audio chatting with local access numbers provided for the U.S. and Canada. It also supports chat, file transfer, remote printing of documents from the moderator to the local printer of an attendee, as well as powerful central administration and real-time attendees access rights control. The company recently added speed improvements in the screen sharing session to the product, and the ability to re-assign the presentation role to any of the attendees, and improved the user interface. Unlike competing products, it features a shareable (concurrent) licensing model so that multiple users in an enterprise can share the same license, making it more cost-effective.

AudioCodes

AudioCodes Mediant Software SBC
www.audiocodes.com

AudioCodes is well known in the VoIP industry for its family of enterprise VoIP products including VoIP gateways, SBCs, and even VoIP phones. The session border controller is a key component since it acts as the demarcation point between the business's VoIP network and the service providers' SIP-based services, providing a layer of security. Until now, enterprises buying a SBC had to purchase a proprietary hardware box with the SBC software loaded onto it, which is why they are often expensive. AudioCodes Mediant Software SBC turns this model on its head with a software-only version of AudioCodes' E-SBC, enabling cloud-based and virtualized implementations for large enterprise and hosted service providers.

AudioCodes told TMC Labs, "We believe AudioCodes Mediant Software SBC is the first software-only SBC to be an extension of an already-proven hardware-based SBC portfolio, allowing designers to choose dedicated hardware or virtualization with the same software, configuration and management interfaces." Deploying embedded SBC software features/functions to a commercial-off-the-shelf or virtualized server platform is quite innovative.

An important aspect of AudioCodes' SBC strategy is making it easy for the systems integrator/reseller/network designer to get trained on one SBC platform, then allow them to use either hardware or software-based SBCs for any particular application without having to start from scratch. This significantly improves their success rate, reduces training effort/costs and makes VoIP implementations much more predictable.

Since the initial release, AudioCodes has improved the scalability of the software SBC from a maximum of 1,000 sessions to 10,000 sessions – utilizing multi-core features found in COTS servers and efficiencies in software architecture.

Broadview Networks

OfficeSuite Dental
www.broadviewnet.com

Most VoIP phone systems take a cookie cutter, one-size-fits-all approach. While that works in many cases, many business verti-

cals require specific customization to make their phone systems work with their business processes. That can require hours of consulting time or the VoIP system just may not support the level of integration the business is looking for.

One common business is dentistry; just about every town, large or small, has at least one dentist. Partnering with Henry Schein Practice Solutions, Broadview has developed a desktop PC application that links its OfficeSuite cloud-based unified communications service with Dentrix G5, Henry Schein's popular practice management system.

OfficeSuite Dental delivers a highly efficient office receptionist experience to the dental community. The OfficeSuite Dental client integrates Broadview's feature-rich OfficeSuite service with Henry Schein's Dentrix G5 database. It provides the dental receptionist with an instant and comprehensive view of the calling patient's name, family members, account status, appointment schedule, missed appointments, treatment plan and access to display more information with a simple click of a button. Broadview Networks told TMC Labs, "The solution also helps dental practices reduce costs by providing all the advanced features and functionality of an enterprise-grade phone system for no upfront cost and low monthly payments. It gives practices a professional image, makes their staffs more productive and dramatically improves patient satisfaction."

OSDC provides an instant pop-up display of key patient information extracted from the dental office's Dentrix G5 database upon receipt of the first ring of the phone. The OSDC application runs on the receptionist's PC and when a call comes in from a patient, the window opens, key patient data is extracted from Dentrix G5 based on the patient's phone number, and the data is instantly displayed on the receptionist's PC monitor screen.

When combined with OfficeSuite, Broadview's easy-to-use, cloud-based phone solution with unlimited nationwide calling, dental offices have a very compelling solution worth checking out.

Calabrio

Calabrio ONE
www.calabrio.com

Calabrio ONE is a comprehensive suite of contact center software that's easy to implement, use and maintain. Calabrio ONE includes call recording, quality assurance, workforce management, speech analytics and performance-based dashboards and reporting. Calabrio ONE is a flexible offering to which bundles and features can be added as needed.

Calabrio told TMC Labs, "Calabrio ONE is the first product of its kind on the market to utilize a dynamic, widget-based user interface that offers key personalization for its users. Agents and supervisors alike can have the data they need most front and center. The Calabrio ONE suite is seamless, offering truly integrated software that harnesses masses of data and creates actionable results, assisting the increase of efficiency and compliance in the contact center no matter its size."

The company added, "Contact centers are sitting on endless amounts of useful data. However, many are not extracting the valuable insight this data can hold because the information is highly unstructured. Furthermore, traditional analytic technology has been very complex, which makes adoption difficult and unattractive. When left to traditional approaches to analyzing voice data – where contact centers are forced to manually listen to calls in order to pinpoint essential transactions, trends and take action – enormous business opportunities can be lost because users can't literally listen to every call, so they don't have a complete view of what customers and agents are saying. Calabrio ONE's Speech Analytics component is more intuitive, making the process of turning unstructured phone transactions into big data that can be sorted, evaluated and acted upon more easily and cost effectively."

A key advantage of Calabrio call recording has been the ability for customers to choose the capture method or mix of methods to best suit the customer's business and technical requirements – whether it's a single center, a multi-site center or home agents. One option, gateway recording, provides a reliable option for capturing every call in even the most complex multi-gateway environments across the enterprise. Calabrio ONE supports robust recording of the full customer experience on every call to the enterprise regardless of capture method, including the ability to associate contact-rich metadata with every call, record and associate multiple legs of a call, and the ability to associate IVR interactions with each call.

Jibe Mobile

Joyn by Jibe

www.jibemobile.com

Jibe delivers both an end-to-end joyn solution for carriers to launch their own joyn services and to fill the void in the market left by carriers that have not launched joyn. You can think of joyn as the carrier's answer to Skype, but with tighter integration into carriers' services like SMS/MMS. The joyn initiative represents the first time attempt from carriers to roll out a new, interoperable global service since the introduction of SMS. Jibe's cloud is the secret sauce that allows any carrier in any market to launch new joyn services and provide a complete cross-carrier solution that works both in-network and across networks. joyn by Jibe provides in-network and cloud-based joyn capabilities to mobile users on any network, giving them the ability to easily share, voice and video call, group chat, group file share, and even initiate an "instant challenge" to play a head-to-head game. It also features in-call video sharing and the ability to request friends' location and share their own location.

The video and audio quality has been improved over the last several months with the inclusion of dynamic bit-rate adaptation, voice activity detection, half duplex operation and automatic gain control. Supported video codecs include: H.264, VP8. Supported audio codecs include: AMR-WB, AMR-NB, OPUS, G.729, G.726, G.722, G.722.1, ILBC, G.711 (PCM a-Law/u-Law). Encryption supported: Secure Real-Time Transport Protocol (SRTP/SRTCP).

Jibe has incorporated SMS/MMS as a mode of communication into the user experience, allowing SMS/MMS to be utilized as a fallback mode in case joyn capabilities are not available – so no friend is left behind. With this approach, users are able to upgrade their mobile experiences while remaining connected to all of the contacts in their address books.

Jibe explained to TMC Labs, "Until every carrier launches joyn, the service is unable to deliver upon its most fundamental promise: universal reach. In almost every market with a live joyn service, at least one carrier has yet to launch, meaning [anywhere] from 5 percent to 97 percent of mobile users in those markets cannot access joyn or be reached using joyn. Market leaders are therefore held back by market followers because it only takes one absent carrier to break the experience for customers of all the other carriers. Jibe is the only company that delivers an end-to-end joyn solution to interconnect users on different carriers without requiring each carrier to first implement joyn. Jibe's cloud allows any carrier in any market to launch new joyn services and provide a complete cross-carrier solution that works both in-network and across networks."

OrecX

Oreka TR (Total Recording)

www.orecx.com

Oreka TR allows clients to search, find and categorize recordings based on time or date of call, incoming phone number, outgoing phone number or other customer requirements. The incredibly flexible, VoIP-ready Oreka TR is based on an open-source core, runs on all computer operating systems, and integrates with any phone system. Just a browser is needed for call playback. Powerful and flexible search criteria allow for quick retrieval.

Oreka TR records VoIP SIP sessions by passively listening to network packets. Both sides of a conversation are mixed together and each call is logged as a separate audio file. It can also record from a standard sound device (e.g. microphone or line input) and can record multiple channels at the same time. Features include voice activity detection, GSM6.10, A-Law and u-Law compression to save disk space, and recording metadata logged to file and/or any mainstream database system.

Oreka TR claims to be the very first call recording software to support SIPREC Recording, based on the Internet Engineering Task Force's Internet draft of the standardized Session Recording Protocol. Oreka TR features an open API, meaning it can very easily and quickly integrate and interoperate with any PBX, CRM or legacy system. It's a software-only product that can literally be downloaded and installed in just 30 minutes, while competing solutions can take days or weeks to deploy. Also, they claim it's roughly half the cost of competing solutions.

QualiSystems

TestShell 4.8

<http://qualisystems.com>

TMC Labs has used many different testing tools over the years, so we were pleasantly surprised by the features sported by TestShell 4.8, an end-to-end enterprise software framework for lab management, device provisioning and test automation. The framework enables engineers in the networking environment to optimize lab performance, increase testing coverage, reduce set-up time and accelerate testing. TestShell 4.8 is used to manage large scale network and testing labs and offers an easy to use platform for driver and test workflow creation as well as comprehensive test automation capabilities including test creation, execution and management.

It features advanced test intelligence via online dashboards and flexible reporting mechanisms. The enhanced Interactive Topology Diagram shortens topology creation time, improves team collaboration, and offers disparate users the flexibility to continue working where another left off. Test designers drag required resources directly from search results into the topology screen. SNMP Manager Library expands SNMP network protocols usage with more reachable network-related information and automatic retries. Traffic libraries include out-of-the-box support for IxLoad, IxNetwork, Test Composer, TestCenter and other traffic resources. TestShell offers secure device reservations to guarantee uninterrupted testing processes by blocking access to topology-reserved devices.

Leveraging a simple and intuitive building block-centric development methodology, engineers can create automated scenarios and can contribute to the automation efforts directly without writing code or depending on R&D/outourced programmers. The TestShell 4.8 is innovative in that it is vendor-agnostic, meaning it can easily integrate with all equipment in the lab, regardless of brand and type. In the last six months the company has improved the product so that the number of available API calls has doubled, making it easier for users to automatically access the new capabilities related to administration, topology control operations, management, and reporting.

RingCentral RingCentral Office <http://ringcentral.com>

RingCentral Office is a cloud business phone solution designed with a mobile workforce in mind. It helps companies optimize communications for voice, fax and text by keeping employees connected to customers and colleagues wherever they are working, on whatever device they are using – including smartphones, tablets, desk phones and computers. RingCentral is riding the wave of BYOD in the enterprise and leveraging the mobile devices employees bring to work. So not only does RingCentral eliminate the cost for a customer premises PBX, but also the cost of desktop phones for employees. Any new hire is as simple as adding the mobile device into RingCentral's webportal, no waiting to order a desktop phone and for it to arrive. In addition to working with mobile devices, RingCentral supports SIP, so you can deploy SIP desktop phones or SIP softphones. There is also a RingCentral app on iOS and Android smartphones and tablets.

RingCentral told TMC Labs, "RingCentral Office makes consumerization of IT a reality for a phone system. It's easy to set up, manage and access from the RingCentral web portal or mobile app without requiring an IT background. Along with offering core phone system functionality such as auto-receptionist, departments and dial-by-name directory, RingCentral Office offers industry-first capabilities for mobile devices including the first business SMS and the ability to install and manage a phone system via a smartphone or tablet."

RingCentral Office's Cloud Touch offers the first fully touch-powered platform that enables administrators and employees to install, manage and access the phone system via mobile devices such as iPads. You can quickly update a company's phone system by

adding employees, activating new phone numbers and setting call handling rules using mobile devices from any location. Recently company added conference calling and faxing even on mobile devices, as well as Salesforce.com integration. It also recently added auto call record, presence, call parking and intercom.

Sangoma Technologies Sangoma NetBorder Lync Express V2.0 www.sangoma.com

TMC Labs is a huge fan of Sangoma hardware when used for Asterisk-based IP PBXs, so we were pleasantly surprised to see the company offer a new product that is an all-in-one Microsoft Lync server appliance. The company claims to offer the only appliance with both a built-in VoIP gateway and a built-in SBC (added in v2.0), which simplifies deployment and management.

Lync Express integrates Microsoft Windows Server with Hyper-V virtualization, Microsoft Lync Server and Mediation server combined with Active Directory and Edge server roles together with Sangoma's Session Border Controller and Sangoma's VoIP gateway. In the last six months the company has increased the capacity of the appliance from 240 users to 1,000 users and V2.0 supports Lync 2013.

Sangoma told TMC Labs, "Lync Express eliminates the need to size, source and install all the correct software for a successful Lync deployment. The combination of these functions in a single appliance means Sangoma has created a one-of-a-kind solution that makes Lync Express unique in a category of its own in the Lync market."

Yealink Network Technology Co. Ltd. Yealink Ultra-elegant Gigabit IP Phone SIP-T46G www.yealink.com

The SIP-T46G is Yealink's latest IP phone, designed for discerning executives who want high-end color IP phones with the latest features. The SIP-T46 does not disappoint, featuring a high-resolution 4.3-inch 480 x 272 TFT color display, HD voice, dual port gigabit Ethernet with PoE, full duplex speakerphone, support for up to six SIP accounts, as well as EHS headset and USB. It also supports Bluetooth headsets through the use of a USB dongle. Enhanced sound quality is delivered by the Optima HD Voice system, which meets ITA 920 certification standards

The SIP-T46G finally rids the use of paper labels for programmed buttons. Its easy-to-read screen can be customized with functions that the user requires. It has 41 hard keys and 10 multifunctional DSS keys. It also features a 1000-entry phonebook, 100-entry call logs, and a five-way local conferencing feature. Lastly, its stand has two adjustable angles and the phone is wall mountable. TMC Labs was one of the first to recognize Yealink as an innovative VoIP solutions provider with feature-rich products that are often much more affordable than competitors, so we admire and commend the company's continued innovation in providing superb products at an attractive price. **IT**

Tom Keating is vice president, CTO and executive technology editor/SEO director of TMC.



Inspecting the PRISM

It took less than a day for the imbroglio in the U.S. over the National Security Agency compelling Verizon (via until June 5 a secret court order) to turn over phone records to explode. As predicted, this became the top news item for days to come, which meant it was only a matter of time before there would be more information, either purposely leaked or uncovered by a now totally engaged investigative news community, about NSA best/worst practices.

The Washington Post reported that a top-secret program called PRISM, authorized by federal judges working under the Foreign Intelligence Surveillance Act, has allowed the U.S. intelligence community to gain access to the servers of nine Internet companies for a look at what I like to call, "e"verything. The story cited slides it obtained of the PRISM program showing that NSA can directly mine data from Microsoft, Yahoo, Google, Facebook, PalTalk, AOL, Skype, YouTube and Apple. This led Twitter to brag about not being on the list.

The companies listed above predictably denied, in almost identical language, that they have provided any government organization "direct access" to their servers. In Washington-speak, during the Watergate years this became known as the "non-denial denial." In other words, they are not saying they are not sharing data with the NSA and it seems likely that this all stands on the definition of what really constitutes "direct access." Hint, hint — it is probably semantics.

Other predictable developments included pronouncements from various quarters, politicians as well as noted talking heads and intelligence "experts", about the value of both the phone record info and PRISM. It has been noted almost ad nauseam at this point that much of President Obama's daily intelligence briefing is based on information gleaned via PRISM.

Finally, and again predictably, the intelligence community and its allies are outraged that their supposedly secret activities have been exposed and there are promises that those who have leaked this information will be pursued and held accountable for what the government sees as creating a real threat to national security. (As we all now know, the Guardian reported whistleblower Edward Snowden's revelations about NSA's data mining activities and, at last look before press time, the young man was hanging out in Hong Kong, apparently to avoid extradition.)

In a move to assuage some of the anger over both surveillance programs yet make a point to those who like to expose

such things, Director of National Intelligence James Clapper had said he would be declassifying details about the phone call program, which he characterizes as legal, limited and necessary to detect terrorist threats. (And, indeed, the Obama administration in mid June presented a document listing terrorist threats that were uncovered and prevented due in part to the PRISM program.) Clapper said every three months, a court reviews the phone records issue and that records are only culled when facts show a terrorism connection. This tracks with the defense that has been put up that since the program is using the data to spot trends based on excessive calls to non-U.S. citizens who are targets of interest the public need not be concerned that their calls are being listened to unless they are doing something that rises to the level of being suspicious.

Some members of Congress are vowing to change the phone records program, which interestingly enough, they voted to authorize out of fears concerning the lack of boundaries as to what constitutes virtual voyeurism versus legitimate intelligence work.

Clapper also admonished those who think they are doing us a public service by bringing such programs into the sunlight to, in essence, stop aiding the enemy. This is a classic stance that seems at odds with the world today. In fact, it can be argued that the current revelations could be useful in sending a message to our foes about the lengths our intelligence community is willing to go.

The intelligence community will do what it does best, i.e., remain suspicious of everything and push for maximum information. The executive branch looks to that community for its advice based on its expertise and the facts are that we need them to stay in character.

However, if the FISA court is going to rubber stamp requests, its value and judgment should be cause for concern. The U.S. has a system of checks and balances for a reason. It is the role of Congress to provide oversight. Assuming the respective intelligence committees in the House and Senate knew about the phone initiative and PRISM, based on what they are and are not saying, indicates a failure to question all of this. That is very troubling. It seems time for the intelligence committees to obtain more intelligence and act more intelligently and responsibly. **IT**

Peter Bernstein is senior editor at TMCnet, the online entity of INTERNET TELEPHONY parent company TMC.

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