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The Rules of Attraction

It's been several months since TMC's last big trade show, ITEXPO East 2012 in Miami, but there's one moment at the event that I continue to revisit mentally. It was the moment when TMC CEO Rich Tehrani mentioned the upcoming Facebook IPO and said that the public offer would create a lot of wealth for many in Silicon Valley, a fair portion of whom would be likely to sink that money into new enterprises.

Ah ha, I thought, maybe this is an opportunity for Arizona (my home base for more than 13 years) to attract more high-tech businesses. The state has been trying to do this for quite some time and, as a veteran tech reporter/editor, I would love for that dream to be realized.

So I sat down at my computer and I wrote a letter to the editor and e-mailed it off to The Arizona Republic. In it, I talked about how getting new tech businesses to move out of their comfort zone (Silicon Valley) and into Arizona would be a challenge given a lot of the money is in the San Francisco/San Jose area, and it's an exciting and fertile place for start-ups. But, I went on to suggest, it was worth a shot. Arizona, I noted, could be a plumb location for many of these new organizations considering its close proximity to Silicon Valley; its relatively affordable cost of living; and its lack of earthquakes, hurricanes and tornados – which would seem to make it an ideal place to locate data centers.

Whether Arizona politicians and the local business community move on that possibility remains to be seen. They certainly haven't had great luck on this front so far.

Google was in Arizona for a short while, but split town a few years ago, apparently because the talent it sought was not available in the area.

To make matters worse, I just read that the other giant in high-tech – none other than Apple – picked Austin over Phoenix as part of its expansion plans. Apple is investing $304 million to build a new Austin campus, which brings with it new jobs with annual salaries in the $40,000 to $200,000 range.

Bummer, I thought. But, then again, Austin is pretty sweet. Good food. Fun bar scene. And they have ITEXPO and a little event you may have heard of called SXSW.

In any case, this all got me questioning exactly what it takes to get businesses to start or expand operations in one location vs. another, and exactly how some states and cities successfully become high-tech hubs while others seem to flounder.

After The Arizona Republic piece that I wrote ran, Matt Pittinsky, CEO with Parchment Inc., an online education credential data company, gave me a buzz and hosted me for an interview at the company's Scottsdale-based location. Matt, who founded the successful business Blackboard, told me he located his business here for family reasons.

In any case, he added, Arizona is becoming a specialty high-tech hub of sorts for the education space. And he noted that Apollo Online, Grand Canyon Online and Pearson are all in the area.

I asked him what more Arizona, or any location, needs to do to attract high-tech business, and what might prevent them from doing so. He said places that lack second- or third-generation product development and engineering talent are most challenged in attracting high-tech businesses of any sort. And he emphasized the importance of events that bring visibility to the tech activities in a given community. **IT**

VSS Monitoring Switching Fabric to Reduce Carrier Opex, Capex

A major cost to carriers' opex and capex is associated with network monitoring and test equipment. Andy Huckridge of VSS Monitoring explains carriers spend up to $300,000 on this test equipment, and yet they only use the devices at about 20 percent of their capability.

According to Huckridge, the solution to skyrocketing costs on tools entrusted with keeping the network purring like a fine Italian sports car (my words, not his – but you get the idea) is a layer of intelligence to provide scalable visibility and control of traffic capture.

His company's Network Intelligence Optimization layer proactively copies, forwards and redirects captured traffic in real time, allowing operators to achieve higher service availability at lower cost. The goal here is to allow traditional testing equipment to have unrestricted visibility. In other words, you can use an aggregator to connect to multiple network segments but then you could lose link layer visibility as well as loss, jitter and packet drop information. Solutions from VSS handle time stamping and port stamping, allowing carriers to see delayed and dropped packets as well as other crucial metadata.

If you aren't able to do this the challenge becomes that you end up throwing packets away as you don't have the content to analyze the data in the tool as data traffic comes from numerous data segments. This could yield erroneous results. The company uses session-based flow-aware load balancing on its Distributed, Protector and Finder Series models, allowing traffic from one access point to be balanced to up to eight output ports using one of 10 balancing criteria options such as destination MAC address, EtherType, IP address, etc. This technology is useful for allowing a 1G port to accept 10G traffic. The company also has Expert Edition models, which allow the criteria to extend to 22.

Moreover, VSS utilizes a high data burst buffer, allowing you to deal with microbursts potentially as a result of congestion or video traffic, which could also result in a loss of link layer visibility. The company also recently released a deduplication feature, which removes duplicate packets

through various network segments. As a result, the analytics tools don't get confused, and they see only what they need to see – with full metadata of course.

In addition, VSS has new Defragmentation and Packet Reassembly Capability allowing it to reassemble fragments on 4G networks back into the correct order. The need for this is in part due to the 4G/LTE network's use of GTP (GPRS tunneling protocol), which causes packets to reach maximum transmission unit size and subsequently need to be split into numerous fragments. By reassembling packets, analytics tools get less confused, enjoy reduced downtime, and are more efficient.

Perhaps the most ambitious objective of the company is to become the middleware between the network segment and analytic tools. It wants to allow other network monitoring tools to connect virtually to the underlying carrier switching fabric through the VSS Monitoring Fabric. Obviously, in order for the company to even suggest it could do such a thing, it would need to be highly reliable. And, to that end, the company is touting its full mesh architecture, in which the equipment is linked by two or more connections to other parts of the system. The company is working with the world's largest mobile carrier in China in this capacity. A self-healing routing protocol coupled with advanced buffering features ensure monitored data is not lost – even if a box goes down. And a converged management system makes it easier to manage.

In fact a new network management system on the company's Distributed Tap Series was requested by customers. It works as follows: Since the system is mesh-connected, you can now update one box and this in turn upgrades the entire system. If there is a problem, the standard failsafe reverts to the prior version of the software.

Andy says the solutions allow customers to save a tremendous amount of money and to utilize their monitoring tools at 80 to 100 percent. By utilizing the VSS Monitoring fabric, customers aren't at the mercy of network test vendor software upgrades, which could cause downtime and inconvenience. **IT**

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BRINGING IT ALL TOGETHER

By Hunter Newby

Obstruction, Barriers and the Banning of Municipal Dark Fiber

There could be no greater indication that municipal dark fiber networks can and do succeed with the proper plan, team, funding and execution than the efforts of the incumbent telecom and cable operators to block their very existence.

The battle lines have been drawn on the map of the United States – and future of success, or failure, can be predicted by those states that have enacted legal barriers to, or the outright banning of, the creation of municipal networks and those that have not.

It is clear that the world has moved into the network age, and success will be determined by those that can execute

It seems clear by the Community Broadband Preemption Map at www.muninetworks.org that Arkansas, Missouri, Nebraska and Texas have chosen to side with the corporations and their shareholders rather than the citizens of the states. It must have been a difficult choice though considering that given sparse population density the incumbent telecom and cable companies are probably large employers as it is and the states don't want to do anything to impact those existing jobs – a message of clear probability delivered by the incumbents to the state legislatures no doubt.

The rationale behind a for-profit entity doing anything to help those in the state without proper, true, high-speed broadband if it doesn't meet their profit profile is non-existent though. Since the incumbents are not going to build a proper fiber-

> **There could be no greater indication that municipal dark fiber networks can and do succeed... than the efforts of the incumbent telecom and cable operators to block their very existence.**

on a plan to keep up with the networking demands of their citizens and the businesses that they transact with, but many local governments in the U.S. have had the ability to control their own destinies taken out of their hands. Nineteen states in the U.S. have enacted barriers either to make it difficult or impossible for communities to build publicly-owned networks, according to muninetworks.org.

How can this be? As America struggles to regain gross domestic product and productivity growth, it desperately needs new and sustainable job creation and the ability to tap into its largely untapped and vast intellectual capital resource – the innovative citizens of this free country. The key ingredient to unlocking all of it, the dark fiber network upon which broadband operates, is being limited in many states. The answer is simple, yet complex. It is vested interests and politics verses what the people want and need. Whose interests will be served, the individual's, or the shareholder's? Will it be the greater good, the good of the many, the few, or the one?

based network and provide real broadband service where they do not have to either because it does not meet their investment return profile, competition does not exist and will not because it has been sufficiently blocked, then maybe it makes sense for the citizens to become shareholders. Maybe the local governments should float a bond to take a huge stake in the incumbent. Maybe that way they would at least get a chance to be heard at a shareholders' meeting. It might help them get their community on a network plan in the foreseeable future.

At the very least they can as individual shareholders each benefit from the stock price appreciation and possible dividends paid out by the incumbents and based on the milking of every other community still stuck on legacy low-speed and expensive networks. If they are really smart, they can move to another state where municipal networks exist and have their dividend checks forwarded to their new addresses where they sit and monitor their stock portfolio on their blazing fast Internet connection. **IT**

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

By Jon Arnold

Is Dial Tone Done?

For those of you who know me, I'm back with a new monthly column here at INTERNET TELEPHONY magazine. I've been an occasional contributor to TMC over the years, and from 2008-2010, I wrote a monthly column titled Service Provider Views for the TMCnet portal. You can still peruse those posts, but going forward, I'm taking a broader view, hence the Rethinking Communications name.

So, what can you expect to see here? Your guess is as good as mine, since the communications landscape is constantly shifting. Nothing is fixed in this space, and just as video, SIP trunking, tablets, the cloud, etc., have been recent hotspots, other developments will inevitably come up as the year unfolds. I'll certainly be examining these trends, but don't be surprised when you see me shift gears and start talking about social media, 3D, big data, etc., as those topics come into sharper focus.

Before touching on my thinking here, I want to emphasize that my aim is to stimulate dialogue. There are lots of topics to explore, but the best validation comes from INTERNET TELEPHONY readers. This magazine has a deep reach into our space, and beyond the daily news, my role is to give you food for thought. I want to challenge your thinking and look beyond the press releases.

Where is the market headed, and what's driving that? How will that impact your business and your customers? How do you move on from the legacy world and find new ways to deliver value? Every question has a thousand answers, and I'll provide a few, but I really want the rest to come from you. That's when we'll have some real dialogue.

I'll launch this column with a basic question to get you going – does dial tone still matter? If you're from the legacy world, this may sound like heresy, but times sure are changing. Skype really got the ball rolling back in 2004, and the momentum has been growing ever since. While desktop VoIP has largely been a consumer phenomenon, Skype and its ilk are routinely used in the workplace – sometimes to save the company money, but sometimes simply because it's easier.

Of course, desktop VoIP is a complement to dial tone and not a replacement – very few businesses are brave enough to jump ship completely. The desk phone isn't going away any time soon, but desktop VoIP has had a different impact by simply making the pie bigger. With no/low cost options, we become more inclined to make calls, but this activity isn't typically using dial tone. Skype-to-Skype calls, for example, may traverse the PSTN at some point, but are not using TDM. Not only that, but so long as the calling experience is good, nobody really cares whether or not there's dial tone.

To be fair, the likes of Skype and Google Voice do offer PSTN connectivity, so you can certainly use these services with dial tone – both to make and receive calls. However, free beats paid 100 percent of the time, and these types of calls account for a very small portion of how these services are generally used.

If this was the extent of the conversation, you would be correct to conclude that dial tone still very much matters for business users. The installed base of legacy PBXs is massive, and there's a lot of Centrex around, believe it or not. Even where IP PBX is in use, most calls are still going over physical trunks, and dial plans remain firmly entrenched. However, while VoIP may be a big and disruptive technology, wireless is casting an even bigger shadow over the telecom landscape. Most of this impact has been with consumers, but with the explosion of tablets and smartphones, wireless usage in businesses has gone into uncharted waters.

> # Within 5 years – 10 tops – all voice calls, whether fixed or mobile, will be packetized and routed entirely over IP networks.

Businesses have been struggling with managing cell phone usage for years now, and a whole new industry – TEM, or telecom expense management – has emerged to address this messy problem. In terms of dial tone, cell phones are just another channel in the voice mix, and at face value, this simply validates conventional thinking.

Fair enough, but that's changing quickly, and mobile telephony will experience the same fate as landline once 4G and LTE become the standard. That may be a few years away, but when you add Wi-Fi to the discussion, the use case for dial tone will diminish. My view is that within 5 years – 10 tops – all voice calls, whether fixed or mobile, will be packetized and routed entirely over IP networks. Most of this will be in the cloud, at which point there will be little need for dial tone except for backwards compatibility.

How do you like that scenario? This may not be welcome news, but that's what I see coming. In my next column I'll explore the implications further, along with some opportunities for both businesses and service providers. **IT**

Jon Arnold is principal of J Arnold & Associates, an independent telecom analyst and marketing consultancy with a focus on IP communications, and writes the Analyst 2.0 blog. Previously, he was the VoIP program leader at Frost & Sullivan.

By Dave G. Norman

Applying Corporate Policy to Enterprise Videoconferencing

Videoconferencing has grown in popularity over the last several years as companies strive to lower their travel expenses while maintaining a high level of face-to-face availability with customers, partners and remote employees. As such, the delivery of video over IP has become a critical business asset that reduces costs, improves efficiency and creates more meaningful interactions with external personnel. Additionally, as video becomes more tightly integrated with unified communications systems, and as workers become increasingly mobile, it is more important than ever to apply standard corporate security and network policies to video communications to support users properly.

interoperability for enterprise video. Various security policies can be implemented using an E-SBC such as utilizing encryption between trusted boundaries, authenticating users, and restricting access to critical video infrastructure. Security policy can also be extended to the configuration of endpoints and video bridge equipment – for example, ensuring auto answer is turned off for endpoints installed in sensitive areas or restricting direct videoconferencing between endpoints and instead using a video bridge that can only initiate an outbound video call after properly authenticating a user. A multi-tiered security design can be implemented that compliments existing perimeter security for data and other applications while at the same time providing for the flexibility and efficiency of secure, ad hoc videoconferencing.

> ## Videoconferencing equipment does not store valuable corporate data, [but] this equipment can nonetheless expose the organization to unnecessary risk.

While it is true that most videoconferencing equipment does not store valuable corporate data, this equipment can nonetheless expose the organization to unnecessary risk. Denial of service attacks, remote control of endpoint and bridge resources for fraudulent or malicious activity, and discovery of an organization's network topology are vulnerabilities that must be considered when deploying video over IP. A recent New York Times report detailed an example where an intruder gained access to the videoconferencing room systems at a dozen different companies, with the ability to control the camera and zoom in on information-laden white boards or documents on the conference room table.

However, some organizations do not perceive videoconferencing equipment as a viable gap in their network security and fail to extend their policies to encompass the devices. Others have implemented restrictive guidelines that require a videoconference be set up multiple days in advance to authenticate participants, eliminating the opportunity for the type of ad hoc communications required in today's business world. To complicate matters, many firewalls do not support video traffic and video communications and are incompatible with popular network address translation techniques used at many corporate boundaries.

These challenges have contributed to the rapid growth of the enterprise session border controller market. E-SBC devices now being offered by several vendors can mitigate risk and ensure

Ensuring a high quality user experience is another critical component for delivering videoconferencing services in a business environment. Network impairments such as packet loss, excessive jitter and latency can negatively impact the quality of video communications. To ensure high quality video communications, a comprehensive quality of service and bandwidth management design should be developed that includes prioritizing real-time IP-based video traffic over data, QoS policing, and traffic shaping of data. In the absence of any QoS policies, all voice, video and data traffic are considered to be equally important. In this scenario, videoconferencing sessions inevitably suffer during periods of congestion or in cases in which there is insufficient network bandwidth deployed to support all traffic.

Some E-SBC systems provide voice- and video-aware traffic management that includes prioritization, traffic shaping and QoS policing. In addition to ensuring high quality videoconferencing calls, an E-SBC can be used as a monitoring and troubleshooting point in the network to reduce problem resolution times.

To fully maximize the technological and business opportunities available with videoconferencing, organizations must design their infrastructure around it, applying the same policy standards as every other node on the network. Systems such as enterprise session border controllers simplify this process for organizations deploying converged voice, video and data applications. **IT**

Dave G. Norman is CEO of Edgewater Networks (www.edgewaternetworks.com).

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By Mike Sheridan

Internal Social Networking is Highly Underrated

Five years ago, all a business needed to do to create social networking opportunities within the company was buy a few water coolers or throw a coffee maker and a cheap vending machine in a corner and designate it a break room. But that doesn't work in today's hyper-networked world. You need more than coffee. You need architecture.

With the proper social architecture in place, there are endless possibilities to what an organization can accomplish to support and grow internal social networking or social business as some call it today. Because let's face it, the most important assets of a company are its employees and the information that they possess when interacting with customers. Whether troubleshooting issues, discussing new sales, or even through billing and collections, all of these functions play an important part of the overall customer experience and their perception of a company.

With the idea of social networking – which when defined could mean a number of different things such as general user forums, message boards, etc. – there are a number of areas within an organization that could truly benefit from this. Internally looking for people who can help solve a customer issue would be similar to the knowledge workers within today's areas of customer contact finding others within the organization that exhibit the skills and traits needed to help solve an issue. Social networking could allow for the posting of information to find people who can help solve a new issue not found in a document or database, though those documents can also be stored in the network.

With a complete view of a customer's history, all of the important pieces like internal collected information could be recovered quickly. Information like knowing who from the company interacted with the customer last, or information on open cases or tickets, previously handled items, previous experience interacting with the client, previous projects and outcomes and current sales activity – all play a very important role. Think about some sales reps who are about to go into a customer meeting, wouldn't it be great to know exactly what happened during the most recent complete customer interaction with their company? Or if they are about to take a call from a customer, wouldn't it be great to know the reason for the call and if there is current sales or collections activity and what is their current perception of the company?

Teams could communicate and collaborate on various projects and post project-specific information. This really expands the collaboration network to include vendors and even customers through federation or self-help websites, all which aim to that same goal of improved and enhanced customer service. Now most customer contact centers do this all of the time as part of their processes, try to record important information and have it on file, but they are often limited to that specific person or specific group. Wouldn't it be great to apply these same principles to the enterprise so that everyone can speed up answers and be more knowledgeable about their issue, whether it is in sales, finance or product management? Do you have any examples of how your organization has taken steps like these? **IT**

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

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By David Byrd

Higher Education Benefits from SIP Trunking

Colleges and universities realize substantial savings and increased efficiency with SIP trunking and unified communications solutions. Concerns regarding legacy telephone equipment, the geographic distance between campuses, the need for quick scalability and the easy addition of new end users are all addressed with a customized unified communications solution from Broadvox.

In 2011, Broadvox worked in partnership with AudioCodes and Microsoft to provide a junior college with a comprehensive communications and collaboration solution. The college has a number of campuses statewide, and had been challenged with monthly reoccurring operating costs and the need to improve staff efficiency. The college's costs for legacy carrier services continued to be substantial, slow to adapt to staffing changes, and extremely difficult to budget.

The unpredictability in costs was the result of fees associated with moves, adds and changes – often due to instructor and staff mobility and office changes.

In addition to cost management, the ability for instructional staff, students and administration to collaborate was quite limited – requiring physical meetings that were often difficult to schedule and requiring staff to travel between the seven widely-distributed campuses. The inability to collaborate effectively between staff and campuses slowed the decision-making process and was highly inefficient.

With the completion of the migration plan, this junior college completely moved to unified communications, eliminating the legacy carrier services. Retaining local numbers in each of the campus locations, the college now utilizes Broadvox GO!Local and GO!Anywhere SIP Trunking for all local and long-distance calling. Interoperability and security for the college is accomplished with an array of AudioCodes Mediant 1000 and Mediant 800 E-SBC devices, with at least one device installed at each campus.

After a financial analysis, the college reported an 80 percent reduction of monthly reoccurring telecommunications charges, and has seen continued per-user reduction in communications costs.

By migrating to unified communications and SIP trunking, the college is more efficient, more responsive to student and staff needs, and is better prepared for growth. **IT**

David Byrd is executive vice president of sales and marketing at Broadvox (www.broadvox.com).

By Nick Maier

Enterprise Migration to the Cloud Shapes E911, Next-Gen 911

We are witnessing a major transition of enterprise and consumer applications moving to the cloud.

Gartner recently issued a report that, among other things, suggested that the personal cloud will replace personal computers within two years, and that a lot of workers may not need a PC.

IDC predicts that cloud computing spending will grow four times faster than the overall IT industry, hitting $36 billion in 2012. The firm anticipates an increase in cloud applications, cloud service enablement, cloud systems management software, and mergers and acquisitions.

This transformation is rapid and breathtaking. Consistent with this trend, the cloud has fundamentally changed the way 911 calls are processed. Before the cloud, 911 calls were processed at the local level using local trunks and local databases. These emergency calls could only be sent locally.

Now, the cloud can deliver a 911 call to any of the more than 6,000 public safety answering points in the U.S. in milliseconds. And, at the same time, the cloud can deliver a detailed location record to the emergency responder at the PSAP making that 911 call an enhanced 911 or E911 call. With this capability, the cloud can increasingly support highly mobile workers who are connected to the enterprise. Workers can be virtually anywhere and, if they need 911, their call is routed to the responders nearest to them.

Next-generation 911 also is aligned closely with the cloud. If we think of the cloud as a vast IP network, next-gen 911 will be able to support 911 calls with voice, text, and video streams. At its core, next-gen 911 is an intelligent cloud network that uses location data (GPS, embedded location objects, existing location databases) to route emergency calls to emergency responders. Voice, text and video media streams can be merged and multiple PSAPs plus local, state and federal authorities can receive the streams.

The cloud will deliver more information and more data to emergency responders than ever before. Emergency responders will be better prepared, knowing in advance important details about the situation they are about to confront. This is the promise of the cloud. **IT**

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

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By Jonathan Rosenberg

Top Five Obsolete Design Decisions in SIP

Work on the session initiation protocol began in the Internet Engineering Task Force in 1996. It reached its first milestone in 1999 with the publication of RFC2543, followed by the publication of the more mature RFC3261 in 2002. SIP is therefore approaching its seventeenth birthday. When measured in Internet time, this is nearly an eternity.

To put things in perspective, IDC reported that there were 36 million Internet users worldwide in December of 1996 (representing .9 percent of the worldwide population). In December of 2011, this number was 2.26 billion (representing 32.7 percent of the worldwide population). In 1996, Netscape Navigator was at the height of its dominance, with almost 80 percent share. The dot-com bubble had yet to even start.

It's a credit to SIP technology that it remains in widespread usage after so many years of existence. However, SIP is showing its age. Several of its design choices, which made complete sense in the late nineties, no longer make sense. And so, as lead author of SIP, I bring to you my top five design choices made by SIP which are now obsolete.

makes more sense to have more state in the servers to facilitate such synchronization. The market has realized this as well, and we've seen the rise of softswitches, B2BUAs and numerous other products that use SIP as an interface yet retain state in servers.

Registration and Connection Linked

In SIP, a user is registered to the service to receive calls. Practically speaking, that registration operates over a persistent connection, through which calls and chats are received. If the connection breaks, the user can no longer receive communications. They need to re-connect, and re-register. In essence, the user's connection is isomorphic with his or her registration. This made a lot of sense in an era of always-on PCs. Now, in the modern mobile era, users are connecting with smartphones that don't hold persistent connections. Their connectivity comes and goes. Furthermore, clients can be reached through push notification services offered by the mobile operating systems. SIP makes no provision for this kind of connectivity.

Notification-Centric Presence

The SIP presence protocol is built on the idea of a long-lived subscription. The client has a persistent connection to the service and

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It's a credit to SIP technology that it remains in widespread usage after so many years of existence. However, SIP is showing its age.

NAT Traversal Not Built-In

SIP made a design choice early on to ignore the growth of network address translation in the Internet. This was a design choice that was already questionable in 1999. In the modern Internet, it has proven itself to be a terrible choice. With home routers everywhere and mobile Internet on the rise, NATed endpoints are the norm. Without a built-in solution, the market moved to fill the gap (e.g., session border controllers), and specifications were built after the fact (e.g., interactive connectivity establishment, or ICE), whose design is complicated by being an extension and not part of the SIP spec.

Stateless Proxies

SIP's servers – called proxies – hold state just for the duration of a single transaction. This choice was made to achieve scale and high reliability. At the time, building out stateful servers in a data center was a challenge. Stateful servers were less important since most users had just a single VoIP endpoint. Fast forward to today, and everything has changed. The arrival of the cloud, along with services like Azure, have reduced dramatically the costs and complexities involved in server-side state management. Furthermore, the arrival of smartphones, tablets, and Internet-connected game consoles means that most users have multiple devices. They now expect these to be fully in sync with each other. In this kind of environment, it

subscribes to a buddy list. As the state of those buddies changes, notifications are sent to the client, indicating the new presence state. This model makes sense in a world of always-on endpoints with no constraints on battery life, where the user has a desktop application that runs all the time. This was a perfectly valid choice in 1996. In the modern Internet, where smartphones and tablets are becoming the focus, network connectivity comes at a cost – battery consumption. SIP's subscription model is too chatty and consumes too much power when realized on a mobile device.

Flexibility over Performance

SIP is actually a large compendium of specifications, allowing implementers to pick and choose which ones they wish to use. This, among other reasons, has led to a protocol that is not optimized – in terms of message counts or message sizes – for any particular use case. Optimizing for flexibility over messaging volume (and, in general, performance) was the right choice in the late nineties, when mobile Internet was just a dream. But, in the modern Internet, it has a negative impact on the most important resource – battery life. User expectations around application performance also have grown by leaps and bounds, tipping the scales on this tradeoff. **IT**

Jonathan Rosenberg is chief technology strategist at Skype (www.skype.com).

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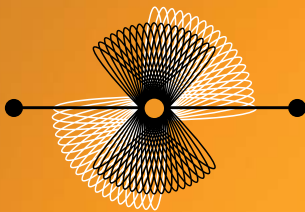
By Lori MacVittie

Virtualization is a Double-Edged Sword for UCS Implementations

While carrier service providers struggle with the transition from 3G to 4G, enterprise organizations are slogging through similar challenges as communications converge toward a unified voice and data model. The de facto standardization of unified communication systems on SIP to provide voice services is a foregone conclusion. Managing the resulting load on data center infrastructure is all that's really left for organizations to get a handle on.

Organizations are transitioning simultaneously from static data center to dynamic data center models. Surveys show a consistent trend toward virtualization of the data center, with anywhere between 38 and 45 percent of organizations having adopted server virtualization already. The trend toward utility, cloud-computing style infrastructure is undeniable. The lure of a vast pool of compute resources, available for allocation on-demand, is strong. Idle, underutilized compute – once the mainstay of the data center to assure availability and performance – is a thing of the past. Efficiency is king, and its chancellor is virtualization.

Capacity planning, however, is not a thing of the past. In many organizations capacity planning strategies have been outflanked by the convergence of UCS and virtualization simultaneously. The dynamic consumption of compute required to support a high-quality, SIP-based communication system moves the burden of managing capacity from a pre-deployment exercise to a real-time fire drill.

SIP server capacity is impacted by a variety of factors, all of which are highly variable. The role-focused nature of SIP-supporting infrastructure complicates the process, as different roles also have different compute and network resource consumption profiles, and these are also dependent on real-time factors such as current load, network conditions, and length of calls occurring.

Integration across the data center with authentication systems, address lookups (DNS), processing, and state management must all be taken into consideration, especially when virtualization is involved. Each role has a unique resource profile, with some components such as B2BUA servers imposing a higher processing load on the virtual server. Stateful components also have higher real memory requirements (30K per concurrent call is currently suggested as a starting point) to avoid the impact of virtual memory on performance as call state and other SIP-related data is moved back and forth between disk and real memory.

Complicating the provisioning of UCS components is virtual networking. Provisioning resources for a given SIP function may be as easy as firing up a golden image, but where it's placed within the network may have a profound impact on its performance.

Virtual networking changes traffic patterns, shifting from a primarily north-south pattern to an east-west pattern. Traffic flows between virtual servers, traversing a complex network of virtual adapters, switches, networks and infrastructure as well as through traditional network infrastructure. Provisioning latency-sensitive services such as VoIP in such an environment can be challenging.

The notion that a-few-sizes-fit-all inherent in utility computing models such as cloud makes this challenge more difficult. Such models are based on the assumption of more static capacity profiles than is true for SIP-based communications. Capacity of web services is more easily managed based on easy to capture metrics such as concurrent connections, and thresholds based on such measurements can be easily implemented.

Real-time unified communications, however, with multiple roles and varying demands per user based on activity and length of call and unknowable conditions such as network

> **The capacity of a virtual server within the SIP architecture may suffice to provide acceptable call quality for 10 users today, but it may not manage that success tomorrow for even four.**

congestion and latency, must be managed based on real-time metrics with resources dynamically provisioned. The capacity of a virtual server within the SIP architecture may suffice to provide acceptable call quality for 10 users today, but it may not manage that success tomorrow for even four.

A more dynamic, intelligent system of not just provisioning but monitoring quality and conditions must be in place to ensure quality of unified communications. While virtualization affords the opportunity to mitigate quality issues arising from resource constraints through on-demand provisioning, such systems cannot do so without real-time, actionable data upon which to base such decisions. A holistic view of the entire system – of all components (roles) comprising unified communications infrastructure – is required to ensure no single service within the system becomes a bottleneck and impedes performance, and thus call quality.

Virtualization is, for UCS, a double-edged sword. It offers both a solution to quality issues while introducing additional challenges that must be addressed to ensure the success of a virtualized UCS implementation. **I**T

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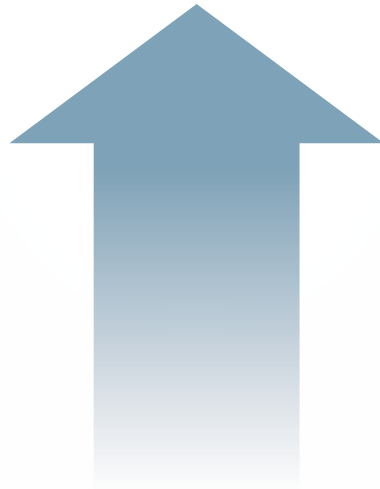
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By Rich Tehrani & Max Schroeder

Continuity Planning 101 – A Continuing Educational Series
Skydiving Without a Parachute

Ever notice that when you are looking out of an airplane window the clouds appear as firm as packed snow on a ski slope? In reality these virtual solids only provide the illusion of solidity. Certainly a skydiver would not actually expect to land on the top of a cloud when making a jump.

A reverse analogy is the illusion of the Internet cloud as being insubstantial like its white fluffy cumulus cousin and the image of solidity associated with legacy non-cloud technologies. People in organizations with premises-based deployments can reach out and touch the equipment to get a warm-fuzzy feeling of security. The problems arise when some powerful cumulonimbus clouds that make up supercells or tornadoes decide to huff and puff and blow the building down – so much for solid and secure.

Simply said, the cloud is much stronger than brick and mortar. IaaS or SaaS solutions, for example, provide employees with the tools to operate at full efficiency from anywhere at any time. This means that if your organization is forced to handle the impact of natural adversities like floods, winter storms and other negative events, the resources are already in place. Ironically, organizations anchored in legacy technologies are also paying more for less. By migrating to an IP or cloud environment they would actually reduce overhead. For example, a recent study from Siemens Enterprise Communications and conducted by ReRez Research showed that enterprises can save 43 percent over traditional PBX systems by migrating to a pure IP infrastructure. However, cost isn't the only reason. Cloud solutions also provide more frequent updates and other services automatically while simultaneously reducing pressure on overworked IT departments.

However, the jump to the cloud is not without risk, and skydiving without a parachute is not recommended. This is a major decision for any organization, and placing the burden on your IT department may not be practicable. The move must be fully researched first to avoid any self-inflicted disasters. Seeking out the services of experienced resellers with IaaS or SaaS plus BC and DR expertise is the best approach to ensure success. **IT**

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

By William B. Wilhelm and Jeffrey R. Strenkowski

FCC Adopts Outage Reporting Requirements for VoIP Providers

On Feb. 21 the FCC released an order applying outage reporting requirements to interconnected VoIP providers (IVPs). The rules will become effective upon their approval under the Paperwork Reduction Act by the Office of Management and Budget, which is expected in the next several months. (The FCC is predicting an effective date sometime in August, 2012, but it could be sooner.)

The order requires IVPs to report any "outage," which is "a significant degradation in the ability of an end user to establish and maintain a channel of communications as a result of failure or degradation in the performance of a communications provider's network."

Under the new rules, IVPs must submit electronically a confidential notification to the commission within: 1) 240 minutes of discovering that they have experienced an outage of at least 30 minutes duration that potentially affects certain public safety 911 facilities, in which case they must also notify the facility's designated liaison; or 2) 24 hours of discovering that the provider has experienced an outage of at least 30 minutes duration that either potentially affects at least 900,000 user minutes resulting in complete loss of service, or potentially affecting any special offices and facilities (i.e., major military installations, key government facilities, nuclear power plants, certain airports, etc.).

The order also requires that providers submit electronically a "Final Communications Outage Report" to the commission not later than 30 days after discovering the outage.

The FCC's intention is that "non-facilities-based VoIP providers report service outages that meet the threshold to the extent that they have access to information on service outages affecting their customers." The outage reporting requirements are another step in the FCC's application of carrier-type regulations on VoIP providers. **IT**

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<div align="right">By Paula Bernier</div>

Growth Engine
Sangoma Fueling Future with Turnkey Solutions and Global Expansion

Sangoma Technologies Corp. is undergoing an extreme makeover in an effort to supply more customers with more innovative products more quickly. Building on its reputation for product quality, excellent service from highly competent engineering teams, and strong relationships with partners and customers, the company aims to drive renewed growth. The makeover was initiated by industry veteran Bill Wignall when he joined Sangoma as president and CEO in late 2010.

"When taking over the reins at Sangoma, among my top priorities were the definition of a crystal-clear corporate strategy, the establishment of a strong foundation to scale upon, and the need shake things up in order to fuel expansion," said Wignall. He implemented a three-step process designed to energize the company and propel growth.

Wignall began the process with a comprehensive operational re-build touching every corner of the company, intended to provide that foundation to underpin its growth. This included re-structuring the team (six of the seven executives and half the staff are new to Sangoma or in new roles), adding industry veterans to the senior staff, re-tooling the engineering teams to focus more on new products and less on sustaining work, and re-launching the entire marketing and sales efforts. The next step was setting a crystal clear strategy for the company. Sangoma is now strategically focused on growth by delivering more products to its customers, targeting global markets (Sangoma now has offices in six countries across North America, Europe, Asia and Latin America), and addressing needs across three customer segments: enterprise users, OEM customers, and carriers. And finally, the third step in Sangoma's re-build was corporate development, in order to use acquisitions to augment organic growth.

"Our new strategy, stronger team, focus on innovation, broadened product portfolio, and geographic expansion are making Sangoma into the go-to company for network connectivity solutions – well beyond the board company we were just one year ago," explained Wignall. "We can now deliver any-to-any connectivity between the growing universe of clouds, devices, networks, people, services and applications that permeate the communications landscape. We work hard every day at Sangoma to ensure we are focusing on those things that matter to our customers and distribution partners. This has involved a tremendous amount of change for the people here at Sangoma in a very short period of time, and I'm so proud of the team for how well they've adapted."

As Wignall mentioned, Sangoma built its reputation as a supplier of voice and data boards, a business in which it's been the leading player for nearly three decades. And while the company is committed to continue selling and investing heavily in its board business, Sangoma recently set a course to expand dramatically its product portfolio.

The company moved that strategy forward last year with its purchase of U.K.-based VoIP gateway appliance outfit VegaStream. In announcing the deal in August, Wignall said: "For years, Sangoma has provided the industry's leading portfolio of TDM to IP boards for use inside servers, and we will continue to dominate that space. However, external gateways, which provide much of the same functionality and can be virtualized and used in cloud-based solutions, but reside outside the server as their own appliance, are becoming increasingly popular. We simply want to offer our customers both options."

Wignall told INTERNET TELEPHONY that media gateways had been on Sangoma's product roadmap prior to the VegaStream deal. In fact, Sangoma had started work on a media gateway itself, he said, but it would've taken more than a year to get a homegrown product to market, so in the end the company looked to acquire a product in this category. That product is Sangoma's Vega VoIP Gateway series, which provides interconnection of networks and technologies.

The Vega products represent just one element in a broad product portfolio that is rapidly expanding through the company's new strategy to launch six to 10 new products annually. That's up from the single annual product launch schedule it followed in the past.

"I got a lot of crazy, skeptical looks when we first established this new product roadmap and release schedule," Wignall said. But this kind of a schedule makes perfect sense, he indicated, given the fact that Sangoma is now "ruthlessly focused on innovation." Sangoma already has proven it can deliver on this aggressive new product rollout schedule, he said, explaining the company has introduced five new products in the last two quarters.

For example, Sangoma now offers the NetBorder SS7 VoIP Gateway appliance (supporting a wide range of VoIP and wireless codecs and call routing via XML scripts), the W400 GSM Board (to enable selective call routing in markets with disparate mobile-to-mobile tariffs), a T3 Multiplexer appliance, a Microsoft Lync-certified software-only gateway, transcoding boards (the first such devices on the market, further evidence of the innovation focus), and Call Progress Analysis software for contact centers. And that's just a sampling of what Sangoma has recently delivered.

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Sangoma President and
CEO Bill Wignall

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The new growth strategy includes more focus on key international markets. Its strategy of putting more of its own people, and forging new distribution deals, abroad is aimed at helping Sangoma deliver solutions and grow its own business in the markets with the greatest growth potential. Sangoma recently announced distribution deals with new partners across Europe, Asia, Latin America and North America as well. At this point, about 50 percent of Sangoma's revenue comes from customers in North America, 25 percent comes from Europe, and the other slice is split pretty evenly between Asia and Latin America. "I am very comfortable with that balance," said Wignall. "And it's definitely going in the right direction."

Sangoma, a public company, posted revenue growth of almost 30 percent from the first quarter to the fourth quarter in its 2011 fiscal year. And revenue continued to hit all-time records for Sangoma in fiscal 2012 with sales up 20 percent in the first quarter and another 15 percent in the second quarter. EBITDA dropped from $0.55 million to $0.33 million during the same period.

Wignall said these kinds of results reflect the company's focus on revenue growth. Sangoma, he said, is highly profitable, generating cash, it's now growing quickly, and it has no debt. It's about top-line growth now, he said. "If we focus on our customers and deliver them more products that meet more of their needs, revenues will continue increasing and our profitability will grow higher still. I can't think of a better combination."

When Wignall joined Sangoma, he said, the board of directors challenged him "to ignite the growth engine" at a company whose revenues had plateaued. By focusing on new products, new customer segments and geographies, addressing the needs of customers as well as distribution partners, and making substantial new investments in products, marketing, sales and service, Wignall and the Sangoma team have delivered on this charge.

"Sangoma is really a revolutionized company over the last year. We're growing quickly, and our refined strategy to deliver any-to-any connectivity between the growing universe of devices, networks, services and applications has resonated throughout the market," said Wignall. "We're not just a board company anymore." **IT**

In a March 26 interview with INTERNET TELEPHONY, Wignall said Sangoma will continue to deliver at this pace during 2012 with new products including an STM-1 mux (the company's first fiber product), an expanded Vega offering (with gateways for smaller network deployments), and a 16-span board that builds off of Sangoma's eight-span, 240-session-capable PRI T1/E1/J1 interface board technology. Wignall added that in itself was a huge innovation in the marketplace that has just now been matched by the competition three years later.

Sangoma also has IP-to-IP products, video-based products, and even a social networking solution in the pipeline for 2012. This speaks to the point that the company aims to address customer requirements on a wide variety of fronts – with both hardware and software; video and voice/data applications; wireline and

wireless infrastructure; electrical and optical; open source and proprietary efforts; and TDM and IP solutions, or a mix of the two. The common thread, according to Wignall, is that Sangoma products connect networks together, enabling customers to integrate new solutions and technologies with their existing infrastructure in a way that minimizes interruption and keeps costs manageable.

This focus on new products in no way diminishes Sangoma's commitment to its existing base of open source developers and open source telephony projects. Sangoma always has and will continue to support, sponsor, contribute code to, and advocate for the OST community. It was one of the first supporters of Asterisk (in fact Asterisk ran first on Sangoma hardware), is a big advocate of FreeSWITCH, and engaged with virtually every OST project out there.

By Peter Radizeski

How Did You Pick a CLEC?

In the days of Integrated T1's, how did you pick a CLEC to sell? Was it due to the company that delivered service in your region? Was it due to a relationship with a channel manager? Did one CLEC have better network or branding? Did a CLEC have a special sauce, some benefit that others did not? Did a CLEC just cost less and pay better? Did a CLEC have better support or was just easier to do business with?

These are things to reflect on, because you get to do it again. The world of cloud is just like the heady early days of the CLEC.

Choosing a cloud service provider to be your partner is a tough decision. That choice will be similar to when you chose a CLEC. However, now you have to consider a few more factors. These include redundancy, security, support and financial stability. Of course, for agents, recurring commissions are also a consideration.

One thing to keep in mind is that customers are moving to the cloud because the cloud represents high availability for their data from any attached device. So it is a business continuity sale, in a way. That means that the cloud provider you choose has to believe in business continuity to the point of mentioning uptime, redundancy and disaster recovery plans. Not asking about it could leave you with egg on your face.

It was easier to pick a CLEC since there wasn't that much difference. CLECs were mainly reselling ILEC services. Now that everyone is moving to cloud and managed services, it comes down to technical acumen. How do you determine that?

It is a challenge to determine if the provider is funded enough for dual data centers, redundant gear, current security measures, qualified tech talent, a support staff and that the data is backed up regularly and off-site. As the trusted advisor, it is your duty to check out your vendor for your customers. **IT**

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

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By Paula Bernier

SimpleSignal Program Helps Agents Ascend to the Cloud

A lot of companies talk about the challenges agents and other outside sales people face in ascending beyond basic voice and T1 sales. That's because it's not always easy to understand and sell around new concepts and services. But SimpleSignal is a great example of a company that has addressed that issue with a very nice training program for the channel. It's called Sherpa to the Cloud.

As depicted in a terrific little SimpleSignal marketing foldout, Sherpa to the Cloud is set up like a mountain-climbing expedition. If you're a climber, or have ever read the Jon Krakauer bestseller Into Thin Air, you know that even well-known adventurers like Edmund Hillary didn't ascend to greatness without the guidance of trusty sherpas, who had been there before. You also know that climbs up big mountains like Mt. Everest involve stops at various camps along the way. That's how the Sherpa to the Cloud program is designed as well. It guides agents on a multi-step journey of understanding about where we are now, where we're going, how we're going to get there, and what the payoffs are at the end.

Base camp for Sherpa to the Cloud helps channel partners learn about the transition from traditional telecom to cloud-based voice services. Those that continue on can get educated on managed network services. Agents who want to move on from there are able to get intelligence on voice-enabled apps, mobile integration, and, finally, UC in the cloud.

Dave Gilbert, CEO of SimpleSignal, explained that the program involves a series of six webinars and related teaching materials, and an agent portal that partners can revisit as needed.

SimpleSignal, which was established in 2004, offers cloud-based unified solutions that businesses can use to work any place, any time. The company's website explains succinctly the value proposition: "At SimpleSignal we cram all the features and functionality of an expensive traditional PBX into our secure data center so we can remotely manage your communications in the cloud. With our rock-solid hosted PBX, you can be assured of the ultimate in flexibility, unlimited scalability, minimum hassle and maximum satisfaction from your phone system." **IT**

Jenne Helps Resellers with Videoconferencing
As the videoconferencing market continues to experience unprecedented growth, value-added distributor Jenne Inc. is helping its enterprise and SMB-oriented reseller customers position themselves to capture new opportunities in videoconferencing with LifeSize. Jenne helps resellers quickly establish themselves in this growth market by offering sales presentation assistance, access to state of the art demonstration equipment, and dedicated on-boarding support. "Video collaboration presents a huge opportunity for our entire reseller community, the vast majority of whom already possess the core networking knowledge that is required," says Vince Piccolomini, vice president of logistics and business development at Jenne. "End users are looking for secure video collaboration solutions not only in the boardroom and the desktop, but also on an enormous range of mobile devices. By partnering with Jenne, resellers are able to deliver robust video solutions while significantly reducing time to revenue."

Panda Launches Channel Recruitment Effort
Panda Security has launched a new channel partner recruitment campaign called Security to the Power of the Cloud. The effort included a March and April webinar series demonstrating the benefits that the company's cloud-based solutions offer to resellers. "Our concept of Security to the Power of the Cloud is based on three major pillars for channel partners: simplicity, margin and control," says Paula Quiros, director of international marketing and communication at Panda

Security. "Partners demand easy-to-use tools that make their jobs simpler, return the expected margins and help keep sales processes under control." With Panda Cloud Partner Center, partners can manage all channel activity online in real-time, while remotely enabling protection for customers' e-mail and endpoints, such as servers, PCs and laptops.

Avaya Introduces New Program
When Avaya announced its DevConnect Select Product Program – a program that simplifies the way customers order Avaya-compatible, third-party collaboration applications – company officials wanted to make sure one message resonated loud and clear: This latest initiative is all about enabling its customer base. "Customers, as well as channel partners, face a number of challenges simply due to the purchasing processes each has in place, from negotiating supplier agreements to incorporating new products and ordering codes in their management systems," Eric Rossman , vice president of developer relations at Avaya recently told TMCnet, the online entity of INTERNET TELEPHONY parent, TMC. "For channel partners, there is often an additional investment in training and authorizations from a number of vendors that also comes into consideration when they look at new solutions." The new program streamlines the ordering process by enabling customers to order from their existing Avaya resellers, and the Avaya resellers can add these solutions to their portfolios through their current business processes.

By Paula Bernier

Cloud Security
Users May Not Be Clear on Who is Responsible for What

Cloud service providers typically are very clear about what they secure for customers, and what cloud customers themselves must look to secure. But that point is sometimes lost in translation. However, with better education, new tools and related services, things are likely to improve on this front over time. At least that's what INTERNET TELEPHONY is hearing from the handful of sources it interviewed for this article.

People spinning up cloud services typically are data analysts, marketing folks and developers – and sometimes IT doesn't even know they're using cloud services, says Rand Wacker, vice president of CloudPassage, a three-year-old company that secures virtual servers running on public or private clouds. In traditional networking scenarios, IT usually makes sure things are secured, but these other folks might not realize they're responsible for that when they turn up cloud services. A recent survey by CloudPassage indicates that while Amazon and others in the cloud services space make clear who is responsible for what in terms of security, more than 30 percent of hundreds of customers surveyed believe their cloud provider offers all needed security.

Forrester Research's James Staten, vice president and a principal analyst at the firm, explains that infrastructure-as-a-service providers typically offer security up to the virtual machine, or point of abstraction. That means the IaaS outfit will secure the hypervisor, hardware, and other gear in the data center, and will offer data center perimeter security. Customers, meanwhile, are responsible for securing what's inside their virtual machine and any connections they open on it to the outside world. The problem, as noted above, is that some customers don't understand that important point.

"Forrsights surveys and discussions with clients continue to show that the early adopters of cloud services are not I&O professionals, and this gap rose in 2011," according to Forrester Researcher's 2012 Top 10 IaaS Cloud Predictions for I&O Leaders, which was released Feb. 3, 2012. "And the trend of empowered employees and developers not telling I&O about their use of cloud continued in 2011. Thankfully we saw more I&O leaders begin to proactively engage these leaders by demonstrating how I&O can make services more predictable and productive. However, more of this engagement is still needed, since the pressure on the business to move more quickly and autonomously increases with the risk of a double-dip recession in 2012."

Forrester suggests that companies would do well to publish cloud use policy documents that state how their organizations can best use new technologies like cloud computing successfully and securely. And, as Staten notes, there are specific tools to enable organizations to monitor and even block delicate data like customer information or payroll information from being moved.

Unisys Takes Stealth Approach to Cloud Security

Tier 1 analysts say security is still by far the main barrier to cloud adoption, according to Rod Sapp, vice president of data center transformation and outsourcing products and technology at Unisys. And while some organizations have tried to address cloud security by fencing off cloud infrastructure with firewalls and other gear, that approach doesn't allow those same businesses to benefit from all the economies of scale that the cloud can deliver. The cloud, he notes, calls for a new approach to security.

The Unisys approach to cloud security includes rule-based access to service catalogs. If you think about a big telecom company, it probably has all different user communities. But with rule-based access to service catalogs, customers who sign on to the cloud will only see service catalogs and information that is relevant to their user community. That, explains Sapp, is a type of security. During the catalog creation process, Unisys can include all network attributes in the catalog, which in effect pre-provisions those network resources.

Unisys also offers endpoint-to-endpoint security. The offering on this front, called Stealth, originally was developed for the military. One might say it's like VPN on steroids – offering an added split-tunneling capability. Stealth uses 256-bit encryption, and it parses data as it's sent over the public Internet so even if the encryption is hacked, rogue agents only get a piece of the message. There also is an encrypted key with Stealth that's unique to each user community. Sapp adds that the Unisys solution also is low on the OSI stack (around Layer 2), so if someone is looking on the network the traffic isn't visible.

The Stealth solution is in use today with Unisys at its IT outsourcing data center, which supports thousands of Unisys clients, as well as with federal agencies, and other businesses and organizations.

– P.B.

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When it comes to securing cloud services, traditional security technologies don't work, says Wacker of CloudPassage, because either you don't have access to the network so you can't use a firewall or a VPN, or the tools are not designed for the dynamic nature of the cloud. That's why CloudPassage designed cloud-ready security solutions, which have the added value of being as lightweight as possible on the server.

CloudPassage supplies for free tools to secure up to 25 servers. It makes money on customers that want to secure more than 25 servers or add functionality. And customers can increase and decrease the number of servers secured on an as-needed basis. For example, Foursquare, one of CloudPassage's largest customers, runs a couple hundred servers during the week, but doubles that on the weekend.

More important than scalability, however, is the fact that with the cloud operational model you have no idea what the IP address is, what kind of server might be involved, and when or how often things will change, Wacker explains. So CloudPassage has created a policy model that doesn't apply policy based on IP address, but rather allows the customer to define a group of servers. That allows CloudPassage to apply policy to servers automatically as they are turned up and down, and changed around.

Cloud security solutions outfits, research and analyst firms like Forrester, and cloud services providers are working to educate customers about what it takes to secure the cloud, and about who is responsible for what security in cloud environments, says Staten. He adds that market leader Amazon holds sessions and tutorials that cover cloud security and makes explicit in its customer agreements what it secures and what it does not.

Yet despite the available tools and efforts to educate the market about cloud security, even some large high-tech organizations – such as Sega and Sony – have had their environments breached. Staten suggests these two examples, especially when compared with one another, expose a valuable lesson in how security policies can make a big difference.

The Sony and Sega break ins last year both involved multitenant hosted environments (although not necessarily cloud environments), he says. But while the Sony breach exposed customer names, accounts, passwords and other detailed data, the Sega breach exposed only user names and passwords (other information was on the Sega premises where there was heavier security). Taking the extra steps to evaluate your risk profile and secure especially sensitive data can have big payoffs later, he indicates.

"It's all about risk profile management," he adds.

In any case, Staten says it should be noted that despite the education gap around cloud security and the potential risks of shared networking, multitenant environments tend to offer far better security than that found in your typical enterprise. "There's a reason we put our money in a bank vault and not under our mattress," he says. ▮T

The Cloud Security Alliance

The industry group known as the CSA has two significant new initiatives for 2012.

The CSA Innovation Initiative
This effort aims to accelerate delivery of a trusted cloud ecosystem through the following:
• identification of key structural issues related to trust and security that will inhibit the adoption of next-generation information technology;
• articulation of the guiding principles and objectives that IT innovators must address;
• incubation of technology solutions that align with CSA principles and address the systemic gaps it has identified.

"The rapid growth in cloud computing has far outpaced the measures many enterprises have put in place to protect their sensitive data in the cloud, and opened up a new set of unique challenges concerning data privacy and residency due to inadequate control and visibility," says Pravin Kothari, founder and CEO of CipherCloud. "The CSA Innovation Initiative is a catalyst that will encourage such innovation to protect enterprise data in the cloud, address security concerns, and accelerate cloud adoption."

The CSA Mobile working group
This working group with provide fundamental research to help secure mobile endpoint computing from a cloud-centric point of view, and is chartered to research the following areas:
• securing application stores and other public entities deploying software to mobile devices;
• cloud-based management, provisioning, policy, and data management of mobile devices to achieve security objectives;
• creating guidelines for the mobile device security framework and secure mobile cloud architectures;
• identifying best practices for secure mobile application development; and
• resolving multiple usage roles, e.g. personal and business use of a common device.

Deliverables, including a research white paper, are expected throughout the year.

"Mobile technology isn't just complementary to cloud; it is a forcing function for cloud adoption that brings a number of unique security challenges," says K. Scott Morrison, CTO and chief Architect at Layer 7 Technologies. "The CSA has been very successful defining the best practices for cloud security, making it the logical choice to help secure the new triangle of mobile, cloud and enterprise."

Source: The CSA

By Paula Bernier

Strengthening the Core
Cisco, Juniper Compete to Improve Network Performance, Efficiency

Networks operators, namely the telcos, in recent years have moved more intelligence to and begun to support more services on the edge. As a result, core networking has fallen out of the spotlight. But core network infrastructure recently has seen renewed interest in light of the success of these edge networking strategies, which are creating greater capacity requirements within the core.

But rather than simply investing in ever-larger pipes, these companies are looking at how to improve their core architectures for more cost-efficient performance, says Ray Moto of ACG Research. And Cisco Systems Inc. and Juniper Networks, he says, are trying to appeal to these companies – as well as to content providers like Google whose networks are starting to look very similar to tier 1 networks – with architectures that approach the core network performance challenge from somewhat different angles. Cisco offers an integrated solution that revolves around its CRS-3 core router and involves LSR (label-switched router) and OTN (optical transport network) functionality. Juniper, meanwhile, is pushing a pure MPLS LSR switching product, the PTX, which it has positioned as a low-cost solution for the job.

Which option the big network operators will ultimately choose remains to be seen, Moto says, but he finds interesting Juniper's approach with the PTX, which he says could effectively establish a "middle core" for telcos – with T series products handling legacy traffic on one side, and a pure MPLS switch supporting IP traffic on the other. What's really interesting about the PTX, however, is it creates a new addressable market for Juniper, Moto adds. That's because the PTX both addresses the telco opportunity and can be used to meet the needs of content providers like Google, which are already all IP and don't care about OTN and other legacy technologies. Moto says that's a $1.2 billion market Juniper can go after with the PTX.

Juniper's PTX began shipping on March 15. The product already has been used in six beta tests with service providers and CDNs.

Luc Ceuppens, Juniper's vice president of product marketing, tells INTERNET TELEPHONY that the PTX provides a simpler architecture to enable the network to scale and optimize the cost of core network infrastructure. Part of its simplicity comes from the fact that it doesn't contain a lot of the functionality of existing routers that is not used anyway, says Ceuppens, noting an Analysys Mason data point that in-dicates MPLS forwarding at Layer 2 delivers 85 percent better efficiency vs. a circuit-switched approach.

"The core of the network is all about controlling the cost. There's very little revenue associated with the core network," says Ceuppens, adding that given the huge amounts of traffic – including over-the-top services – that core networks need to support, network operators want to take cost out of this infrastructure to whatever extent possible.

The PTX also is unique, he adds, in its ability to scale (it supports 8 terabits per second today, and a 16-terabit version is coming later this year), its relatively low power requirements (2.5 Watts per gigabit), the low latency it delivers (lower than OTN, according to Ceuppens), and its competitive cost point.

"So you have this combo of four metrics that really are at the top of everybody's minds," Ceuppens says.

But Suraj Shetty, vice president of product and solutions marketing at Cisco, says that while the competition has gone down the path of multiple platforms (including the PTX and the T4000, which just recently began shipping), Cisco's CRS-3 offers LSR and optical functionality in a single platform. The fact that Cisco has gained market share in this space for six consecutive quarters is proof that this message is resonating in the marketplace, Shetty says. Meanwhile, he says, competitors are pushing a "recycle, rip, replace" strategy.

There are three key things people should know about the CRS-3, according to Shetty. It can scale as needed, enable the move from IPv4 to IPv6 while preserving network operators' existing investments, and allow network operators to lower their costs by using optical technology.

Cisco came out with the CRS-1 back in 2004. The CRS-3 more than triples that capacity, from the initial 92tbps to 322 tbps. Network operators may not need that kind of capacity today, Shetty says, but it will be there when it's required. At the same time, Cisco with CRS-3 delivers optical innovation, he says. This 100gig WDM solution has been demonstrated to work without any significant signal amplification at reaches of up to 3,000km.

According to a July 2011 report from ACG Research, Cisco continues to hold the No. 1 position in the worldwide carrier routing and switching market, with 50.3 percent of total market share as of last year when, in a dramatic market shift, Juniper reclaimed its No. 2 spot, bumping Alcatel-Lucent to number three. **IT**

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By Chris Campbell

Feature Flipping

Developers at 99designs use agile and lean startup methodologies, but as our development team gets bigger, deployments happen more frequently. This volume of change brings increased risk for the stability of our site. It can also be quite a challenge to measure the success of a single new feature on a rapidly changing website with multiple new features operating at any given time. In our earlier days, we'd demo new features on a staging server, but as 99designs has grown, using several staging servers to demo all our new features at once has become clunky. So how do we solve these issues? Feature flipping.

What is feature flipping?

Feature flipping enables the ability to turn site features on or off on a per-user basis. You've probably encountered it before with companies like Google or Facebook when they're rolling out major changes. A few examples include the recent UI changes to Google Docs and Google Mail, and Facebook's new Timeline. Our approach was inspired by a presentation from our friends at Learnable, and slots in well with the Lean Startup methodology of releasing minimum viable products, measuring, and adapting through fast feedback.

Rolling out features incrementally gives companies the ability to ensure the appropriateness and stability of a feature. Some companies make this visible to users via an opt in/out approach, but in our case we use this internally as an improved form of A/B testing. Traditionally we would only A/B test on landing pages and static content, but feature flipping additionally allows us to experiment with pervasive site functionality.

How it works at 99

As a developer, a feature is simply registered in our codebase for use in a conditional statement which is used to guard feature-specific code. Incremental rollouts can easily be set up by defining a percentage chance of obtaining a feature or additionally creating a set of criteria a user must meet before a given feature is enabled.

99designs staff members get a nice interface where they can turn on and off features for themselves or a specific user. Here they can also view the progress of any experiments hanging off this feature. Many of our stakeholders are located remotely; by giving them the power to enable features themselves, they can try these out in production and provide feedback. This removes the need for a dedicated staging environment for demoing.

Challenges

Developing with a multi-version mindset is probably one of the most challenging parts of feature flipping. What was once a simple deployment requiring a migration now entails more thought to allow the old and new versions to function independently of one other.

Deprecated code can start to accumulate when you start leaving code wrapped in feature checks. We try to curtail this as much as possible by coming back to clean up unused code paths once a feature has
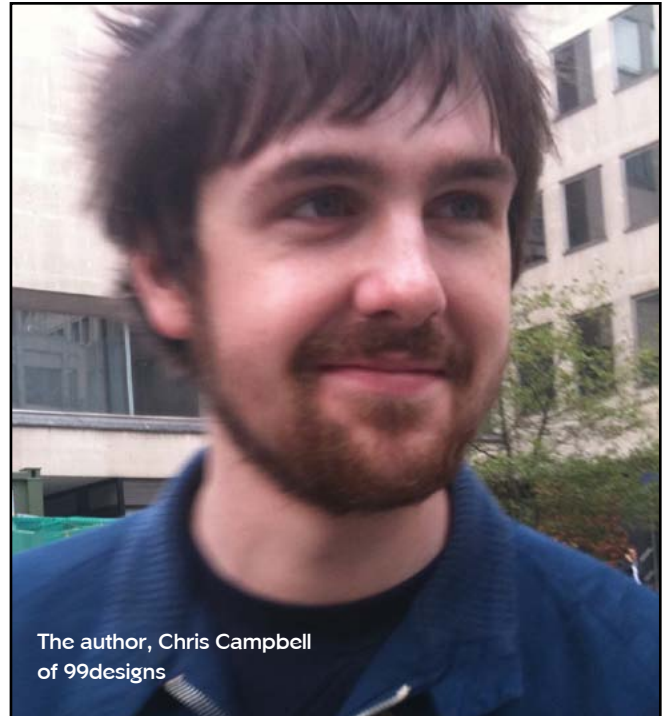
The author, Chris Campbell of 99designs

been fully rolled out. Also, we generally have a grace period even for features we're decided on, so that we can roll back if the need arises.

Unit and integration tests become more difficult when you're working with an exponential number of feature combinations at any given time. This can lead to an out-sized volume of test cases, a problem we're still solving.

What now?

Feature flipping is our approach to solving several problems we face as 99designs expands. Managing features gives us fine-grained control over exactly what our users see, and is paving the way for us to experiment and adapt to our users much faster than was previously possible.

Big companies often execute this approach to development seamlessly, while there's more of a learning curve for small to mid-sized companies. In our case, we're still learning but we're far enough along to be reaping the benefits.

Where to go from here? We suggest you explore a few open source solutions that deal with features:
flip (https://github.com/pda/flip) - Declare and manage features.
rollout (https://github.com/jamesgolick/rollout) - Conditionally roll out features with Redis.
degrade (https://github.com/jamesgolick/degrade) - Keeps track of features, degrades functionality if errors are too high. **IT**

Chris Campbell is a web developer at 99designs (www.99designs.com), which calls itself the No. 1 marketplace for crowd-sourced graphic design.

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By Andy Kemshall

Analyzing the RSA Security Breach

It's been 14 months since the security world woke to the horror that RSA Security's systems had been compromised and – as the company has reluctantly confirmed – its many tens of millions of SecurID hardware tokens would have to be re-issued to clients.

For readers who may have overlooked the saga, the attack compromised RSA Security's network of about 40 million tokens and involved the use of stolen SecurID information to launch an attack on a key RSA Security customer, Lockheed Martin, the U.S. defense contractor. The sophisticated multi-pronged attack that struck RSA Security a year ago March has resulted in the high profile IT security vendor overhauling the manufacturing and distribution of its SecurID tokens.

While RSA officials have sought to minimize the fallout from the security faux pas – pointing to the fact that it has staged a free re-issue of SecurID tokens to all its many customers – critics point out that it took the security vendor a week before it started talking to the press, and by implication, its customers, about the problem.

It then took RSA until June to reveal the technology that had been compromised by the attack, after which it started the lengthy process of re-issuing tokens to its clients. That process, though ostensibly free, has actually cost clients using the hardware tokens many millions of dollars, pounds and euros in the staff costs of handling the re-issue, as well as significant other costs. As any CFO will confirm, while there are direct and indirect costs in any business activity, both categories involve the expenditure of money.

So there we have it – 40 million affected, a late apology and the hidden costs of a fiasco that almost certainly will have cost RSA Security a sizeable number of its customers, some of whom have defected to rival suppliers, and some of whom have made the leap to tokenless and other advanced forms of authentication. And this revenue loss is before we even begin to talk about the fact that RSA Security has had to spend time and resources explaining what actually happened to its corporate clients – as well as developing new software to harden the company against further attacks and a reported seven-fold increase in the production of its tokens to cater to the replacement program.

Art Coviello, the firm's executive chairman, has gone on record as saying that his firm obviously went through a heck of a year last year. "We learned from it, and we came out stronger," he said at the start of this year.

Coviello may be relieved that a sizeable majority of RSA's customers have stayed with the company. But the damage to the firm's reputation may come back to haunt him and his successors, as many clients are locked into the Secured technology because of already-committed technology costs.

But as new security technologies are required, many clients will quietly look elsewhere, reviewing the many technology alternatives that are available.

Last October saw RSA president Tom Heiser revealing that the March 2011 attack on his firm's systems was a two-pronged attack, rather than a single incursion, and involved a mid-hack switch of attack vectors that his IT teams were aware of while they were happening.

"These people were persistent," he told his audience at RSA Europe in October 2011. "The remote attack was adapted to meet RSA's internal naming convention."

Despite Heiser's platitudes to his audience, it should be remembered that he was, in the main, speaking before clients who have been supportive of the firm's products and services, as well as to a minority of clients whose companies are locked into RSA's technology and must therefore learn to live with the highly expensive data breach fiasco.

It is interesting to note that security researcher Brian Krebs reported last October that the RSA hackers might have hit more than 760 firms.

"Security experts have said that RSA wasn't the only corporation victimized in the attack, and that dozens of other multinational companies were infiltrated using many of the same tools and Internet infrastructure," said the former Washington Post IT security journalist. "But so far, no one has been willing to talk publicly about which other companies may have been hit."

Krebs went on to say that almost 20 percent of the top Fortune 100 companies

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The author, Andy Kemshall of SecurEnvoy

A year on, and a number of smaller security solution vendors are seeing RSA customers shopping around for alternative solutions rather than depending on the physical token. Here at SecurEnvoy we have seen a huge spike in demand from RSA customers looking for a change, with many now turning to tokenless two-factor authentication, which uses a mobile phone as the authentication medium.

For many organizations they are already moving over to cloud-based IT platforms, moving away from traditional 2FA makes sense for them as users remotely access their corporate server environment. Encryption of the data flowing into and out of the cloud is relatively painless and can typically be carried out at low cost, with tokenless 2FA via a mobile phone offering a complimentary and highly portable authentication system. This makes it a far more convenient

option than dedicated physical tokens. With tokenless 2FA security, when users wish to access their corporate data or cloud-based solutions remotely, they simply enter their secret PIN/passphrase into the token application running on the smartphone, which then generates a one-time passcode that the user enters into the password field on the computer. By demonstrating that they have these two factors – a secret PIN/passphrase and their smartphone – the user is securely identified.

Unlike their physical counterparts, software tokens can also assist in decreasing the total cost of ownership of the security, as they do not require any physical shipping – a crucial cost factor if the hardware token is compromised and the vendor has to re-issue the token. **IT**

Andrew Kemshall is CTO of SecurEnvoy

in the U.S. have seen their IT systems compromised, with clients like AT&T and BT standing out from his report.

Sensitive Data Often Unsecured

A recent survey of more than 1,000 IT decision makers in seven countries conducted online by Harris Interactive and commissioned by IntraLinks Holdings Inc. found that most sensitive information exchanged beyond the firewall with business partners and customers is still primarily conducted through e-mail and consumer-grade file sharing tools such as FTP sites. IntraLink's 2012 Enterprise Collaboration Survey indicates 68 percent of companies surveyed are still using e-mail as a non-secure method to send and exchange large files of sensitive corporate data. Across the countries surveyed, 59 percent of companies have experienced issues when sending or exchanging large files either inside or outside of the company, according to the report. And while 46 percent of companies surveyed globally said that there is a need to share critical business information with partners including suppliers and consultants, 71 percent of those companies indicated they have no policies in place that govern the use of cloud services by individuals. The largest concerns to companies globally, when sharing files outside of the firewall, are infection with malware (69 percent) and information theft (63 percent).

NDS Could Help Cisco Secure Videoscape

Cisco in March announced its intent to acquire for $5 billion NDS Group Ltd., a provider of video software and content security solutions that enable service providers and media companies to deliver securely and monetize new video entertainment experiences. The acquisition is aimed at helping Cisco accelerate the delivery of Videoscape, a platform for delivering "next-generation entertainment experiences". NDS solutions allow pay-TV operators to securely deliver digital content to TV set-top boxes, digital video recorders, PCs, mobiles and

other multimedia devices. More than 90 of the world's leading pay-TV platforms rely on NDS solutions.

Carousel Blog Offers Breach Roundup

A recent blog post penned by Carousel Industries provides a roundup of all the recent security breaches. Highlights include a breach at Cryptome.org that infected visitors with virulent malware, and one at a popular adult site that exposed the e-mails and passwords of thousands of the site's chat service users. Other noteworthy targets have included Ticketmaster, the Dutch ISP KPN, government websites for Alabama and Mexico and the Microsoft store in India. Other recent breaches involved the CIA's website; a case in which Central Connecticut State University exposed the social security numbers of students and current and former employees, thanks to the Z-Bot virus; and one related to Apple.

EMC Expands Storage Solution

Virtualization solutions provider EMC has expanded its EMC ProSphere storage resource management software to allow IT organizations to understand capacity usage and trends, identify issues, assess impact and analyze performance across physical and VMware virtualized environments in just two clicks. EMC ProSphere now also supports EMC FAST VP, which enables customers to improve storage utilization through intuitive capacity dashboards and reporting. Bob Laliberte, senior analyst at Enterprise Strategy Group, says: "As enterprise customers' virtual environments flourish, they need an SRM solution – like EMC ProSphere –that assures storage service levels across the virtual infrastructure, controls the cost of capacity growth, and optimizes storage services to align with business objectives."

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By Conrad Constantine

Threat Intelligence: What to Share?

Year after year, I hear the same refrain in information security: "We need to share more data about security threats." I know I've been singing the same song myself for at least a decade, too.

Those in favor of sharing information show that although they've had some limited success, the process has been difficult to build out and integrate, and the results are mixed due to insufficient data. More data sharing seems like an excellent idea, but they can only conjecture what the curve on the return on investment is for it at higher levels.

Those against sharing demonstrate a few early experiments where they have collaborated publicly on data sharing, been burned by the public data being used as counter-intelligence, and promptly returned to either not sharing at all, or sharing within a very limited group.

There is some sharing of security data happening out there right now, in varying degrees of scope and success. Public and semi-public clearinghouses such as MalwareDomainList.com, provide an excellent free source of single-scope threat intelligence. But the data is limited, and organizations must construct their own processes and technology to consume it effectively.

Private data sharing arrangements exist between some large organizations, and some government bodies mandate the need to share information, but we live in an age where the tide is turning against publicly-available information. Information is valuable beyond measure, and things of value are instinctively hoarded away in private.

So, after a decade of discussion and attempts to reach critical mass in the move to a sufficiently effective level of data sharing, we still find ourselves at this impasse.

So by all means, let's all share your data with one another, and we'll all be better off. But let's not share my data; that would be bad.

So how do we move forward? So far, the only answer I've arrived at for this is that stressing the importance of enlightened self interest may be the only winnable argument in this debate – the idea that if I help others, it furthers my own goals seems to be a perfectly reasonable compromise.

Data sharing doesn't mean giving things away

Any good data sharing solution is going to result in you receiving more than you give.

A data sharing solution that allows one participant to gain a fundamental business advantage over other parties is likely broken.

Data sharing is not an all-or-nothing arrangement

Within the security realm, there are a great number of layers of data within the field. Being selective about what is shared and to what level of detail is perfectly reasonable.

Paranoia leads us to start from a default-deny position, and try and justify what can be opened up after the fact. For anyone who has ever filed a FOIA request, it is easy to see how this is a method that gains few results for a great deal of work. Instead we should consider the alternative of starting out from the viewpoint of everything is good to share and then selectively removing the things identified as not OK to share.

The real problems with sharing

It would be amiss of me to stand here and claim that universal public security data sharing will fix all our woes overnight (though I'm certainly saying it would give us more of a fighting chance).

There are significant hurdles to encounter and overcome when dealing with data and intelligence sharing that need to be addressed by any organization entering a data sharing arrangement.

All intelligence is counter-intelligence /the most valuable intelligence becomes less valuable the more widely it is distributed

Open information sharing networks will be infiltrated by attackers, without a doubt – so long as the system does not enable the attacker to infer detailed information about what a particular target knows, to stay a step ahead of them.

Intelligence data that cannot be acted upon is worthless

The more open an intelligence source, the more generic the format it must be communicated in. Public sources of threat intelligence are published in the lowest common denominator format – text files of IP address, CSV files, etc. For many security organizations using these feeds, they process the information manually via analysts performing searches across logs.

The path forward

It is essential to the success of data sharing that the content is detailed and consumable – or it won't work.

Getting organizations to overcome the reluctance to share detailed information outside their borders will require more detailed, incremental programs of information sharing, ones that start out with simple statistical sharing (like the Verizon VERIS framework) and then ramp up through programs of threat agent information.

Adoption of tokenization and anonymization techniques and standards that can be implemented without significant effort will be an important factor in allowing organization to collaborate without undue legal or operational liability. Some level of assurance that the information shared will not (nay, cannot) be used against the contributing organization directly, is a requirement only the most reckless would ignore.

We've spent well over a decade now debating the need for more shared security data as the most sane way to raise the cost of entry and lower the return on investment for criminals and spies alike. Fail early, fast fast, fail often is a popular idea nowadays, let's see that applied to more attempts at making the promises of a shared pool of security data arrive while we're all still in business to see it. **IT**

Conrad Constantine is research team engineer of AlienVault (www.alienvault.com).

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By Thomas Beck

Dispelling Myths about Unified Communications

Over the last decade, there has been an incredible amount of excitement and hype around unified communications. UC was the darling of the technology industry for a long period of time, promising to streamline communications effectively in our fast-paced work environment by allowing people to select easily the mode of communications that best suits their needs at any given time. As the excitement for UC reached a fevered pitch, more and more vendors jumped on the proverbial UC bandwagon, and customers were faced with differentiating across a huge selection of UC offerings available.

As this technology entered the market, various definitions for UC entered the dialogue, creating a great deal of confusion for customers. Not surprisingly, every vendor said it could deliver the most functionality at the lowest cost. While some of these claims were a stretch, others were inherently false. Businesses of all sizes embarked on the journey of implementing a UC solution – a process that could take two years after defining the need, evaluating the different offerings, choosing a vendor, and actually deploying the solution. UC adopters soon learned implementing the software was only half of the equation once they realized their solution was either too expensive or too difficult to use in their organization. So, they found themselves back at square one – evaluating the various vendors and technology options once again.

The reality we face today is that UC has become a daunting proposition. Businesses are more confused than ever and – in many cases, having tried and failed – they are essentially disillusioned with the promise of UC. With all the marketing spin today, it's time to address some of these falsehoods and set the record straight. A lot of the problems with UC arise when customers are seduced by the notion of saving money through the promise of low or even no acquisition costs. There's an old saying: If it's seems too good to be true, it probably is. This is especially relevant in the UC market.

> Businesses are more confused than ever and – in many cases, having tried and failed – they are essentially disillusioned with the promise of UC. With all the marketing spin today, it's time to address some of these falsehoods and set the record straight.

In particular, there are three myths about UC that are prevalent in the market today:

Myth No. 1: UC is a simple plug-and-play solution
A lot of UC vendors are guilty of the classic bait-and-switch approach. They will initially show a compelling UC scenario, such as a multi-stage demo where a user determines a colleague's availability using presence, then initiates an instant messaging conversation, which easily escalates the conversation to video. Businesses will see the inherent value for improved communication and collaboration, inquiring about the realities of implementation. Generally, the vendor will say deployment is a breeze and sell them on a UC server with a license to support it.

However, the problem is just brewing when customers deploy the server and realize they only have baseline functionality, not the full vision of UC they felt was promised. When customers want to expand their UC functionality, they learn all the other UC elements need to be purchased piecemeal. They are then required to purchase separate servers and licenses for each component; IM; video; voice; presence; etc. The journey to obtaining and utilizing a comprehensive UC platform becomes expensive, very quickly, after purchasing all the individual servers, licenses, and – in many cases – hundreds of client access licenses for their users. These complex and convoluted solutions are also incredibly complicated for IT to deploy and maintain on the backend.

How did UC get so complicated? In many instances, today's UC providers began selling other products such as switches or other networking components several decades ago. As they saw the market opportunity for UC growing, they essentially bolted on new capabilities such as voice, presence, IM, video, and now social as individual modules attached to their existing software. While this was a profitable endeavor for the vendors, it becomes easy to see how complicated life becomes for IT administrators who are required to manage all these disparate technologies that were never truly engineered to work together.

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The author, Teo's Thomas Beck

Customers should select a vendor that approaches UC holistically with a purpose-built solution for UC. If all the components are tightly integrated, it not only provides a better experience for users, but also simplifies deployment and management for IT. In the end, getting a solution that is built from the ground up can save a bundle on acquisition costs, licensing and CAL support in the long run.

Myth No. 2: Softphones will save you money

There is a tremendous amount of excitement around softphones today – and with good reason. Offerings like Skype and iChat have proven to be popular with consumers, and now professionals want to know how they can benefit from these inexpensive applications. However, prospective business customers should be cognizant that there is more to consider than the purchase price of this software for their organizations.

While softphones are great in many respects, they are very taxing on a computer's resources. Before deploying softphones company wide, an organization needs to ensure every desktop computer is equipped with a quad core processor and the latest operating system. Without the proper hardware and software in place to support the softphone, the application will run slowly and the audio experience will be compromised. In addition, each employee should possess Bluetooth noise cancelling headphones to reproduce the quality and experience of using a desk phone. Once the hard cost of these investments is taken into account, along with the IT resources needed to upgrade every desktop computer, the notion of an inexpensive softphone soon becomes much more costly than the low cost of admission.

Before going much further, it's important to acknowledge that softphones have many great features and opportunities to transform the way professionals communicate. However, the reality of an organization prioritizing the upgrade of all its desktops to provide a business quality phone experience can be unrealistic. Rather, businesses should select a vendor that can provide a combination of both softphones and desk phones across an organization, so they can pick and choose where to deploy which phone based on their IT investments on the desktop.

Myth No. 3: Hosted UC is ready for primetime

As is the case with softphones, a lot of businesses today are attracted to the promise of dramatically reducing costs with a hosted UC solution. While cloud-based solutions represent real savings for many business applications, the calculations are more complex with UC.

In most businesses today, internal phone calls going from one desk to another represent 40 to 60 percent of all the calls within an organization. With a traditional PBX system, a company can utilize its internal network to connect colleagues and does not require the public telephone network for all these calls. However, with a hosted UC solution, calls made within the organization to employees are no longer considered internal from an infrastructure standpoint. A call from one desk to another now utilizes the external network and effectively goes out to the hosted platform, then comes back into the organization. As a result, the system requires much more bandwidth to accommodate all the additional network demands from the internal calls.

The hidden cost for hosted UC is in the upgrades required for the corporate network. This is not only unnecessary, but also an inefficient use of limited bandwidth with so many other competing demands on the network today. A private cloud model is good alternative because it provides the cost savings benefits associated with a hosted solution without placing increased demands on the network.

Choosing a UC solution that will work for you

While there have been a lot of promises and claims made about UC, the bottom line is businesses are only going to realize the value once they find a solution that truly works within their organization.

The best choice is a converged system designed from the ground up to provide all the functionality of UC including voice, presence, IM, conferencing and video. An integrated solution will ensure customers are getting the rich functionality of an integrated UC solution while simultaneously avoiding huge licensing costs and dramatically reducing complexity for IT.

In addition, businesses must consider the real costs of deploying softphones across their company. Most organizations today will need a combination of desk phones and softphones to avoid the significant costs of upgrading every desktop to support the software. They should choose a vendor that can provide phone options that work within your existing organization to prevent hidden expenses down the road. Finally, they should look for a cloud offering that can provide the cost savings of a hosted solution alongside the network bandwidth benefits of a premises-based offering.

UC is an area where the buyer needs to beware. IT decision makers should ask the right questions to distinguish between a vendor's promise and the reality of a UC deployment in their organization. Unified communications can provide a tangible advantage in today's competitive business environment. However, they must understand the true costs to ensure they select a viable UC solution that delivers streamlined communications, increased productivity, and the ability to communicate with colleagues, partner and customers on with any device, anywhere they are.   **IT**

Thomas Beck is director of marketing and business development at Teo (www.teotech.com).

By Kevin Kieller

Measuring the Success of UC

Unified communications solutions can provide significant business benefits for many organizations. However, most organizations neither have the planning skills nor the discipline to prove that a previous investment in UC is yielding organizational dividends. I think it is time we commit to measuring the impact and results of UC solutions.

Establishing Objectives

It is often said be careful what you measure because conventional wisdom dictates you may spur behavior changes that cause improvement in your measured metrics, perhaps to the detriment of the overall business. However, given the complex trade-offs required to select a particular UC solution, I would suggest that you must define, document and prioritize project objectives if you want to prove your UC project has been successful.

Perhaps most IT and telecom professionals are simply trying to be careful, but I suspect that many UC projects fail to define and document objectives instead because they are being careless.

Sometimes you are given the easier assignment to deploy objects instead of providing outcomes. For example, you may be asked to replace TDM phones with newer VoIP phones. This is a much easier task than if you are asked to reduce costs by deploying UC or even more challenging is to improve business efficiency by deploying new collaboration tools.

Unless you can claim success through the simple deployment of specific technology objects, it is in your best interest to spend the time at the beginning of a project working with the business sponsors to define and document measurable objectives. To do this, you can ask questions such as: "When we are done with this project, how will we know we are successful?" or even more broadly "How will we know when we are done?" Ask the questions; keep a record of the answers.

In my experience, senior leaders are more willing to discuss and expected to provide outcomes. Middle management is often preoccupied with, and allowed to focus on, the specific technology selection. Stated another way, senior leaders more often focus on the what and middle managers more often focus on the how.

My advice is to make sure you first understand the what for your UC project, regardless of your level in an organization. It is important to remember that results are not specific to a particular vendor or a specific technical architecture; if you find yourself debating vendor selection or deployment models you are caught up in the how.

The author, Kevin Kieller

Measuring UC

Traditional voice systems, and many add-on tools for VoIP systems focus on capturing data primarily to support long-distance billing reconciliation or departmental chargebacks, most often using the call detail record records, or, to measure call quality, based on mean opinion scores, a test that has been used for decades in telephony networks to obtain the human user's view of the quality of the network.

Newer UC platforms have the capacity to measure and monitor all of the different modalities of communication: IM, voice, video, desktop sharing, conferencing.

I am going to use Microsoft Lync as an example of a new platform that provides fantastic tools to measure UC. I choose Lync as an example primarily because many organizations have implemented Lync or Office Communication Server, the previous version of Lync, for IM and presence.

Since the original version of OCS, released late in 2007, Microsoft has provided a monitoring server role that captured detailed usage and quality metrics for all OCS conversations. Granted, many customers choose not to install the monitoring server role, as it required an additional server and space in a SQL database in which to store the collected metrics.

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The current Lync monitoring server role acts as a super CDR, in this case really a communication detail record, which records the details of all communication sessions, whether they involve, IM, voice, video, desktop sharing, file transfers or web conferencing.

The original reports provided by OCS, which made use of SQL Server Reporting Services, were very techie focused, and it was difficult to decode what all the details meant – and yet, the commitment of the platform to log all of the communication metrics was significant. This commitment meant at least the data was being recorded and was accessible, via SQL, to anyone who had the skill and inclination to extract and summarize it.

With the release of Lync in late 2011, Microsoft greatly improved the standard reports and as a result it is much easier to extract important UC metrics with Lync. Still, properly interpreting the Lync reports, along with their strengths and limitations, does require a significant amount of time to be invested. The key is that, with the Lync monitoring server role, using the detailed data, answers can be found to common executive questions, such as:
What is the average audio conference size?
How many people are using desktop sharing?
How much did we save moving audio conferencing in house?
How much are the boardroom roundtable videoconferencing devices used?
How many users made or received calls when not in the office?
Are some offices not using the new UC features?

This is in stark contrast to other UC solutions where answering these types of questions would require executing an end user survey and then tallying respondents imperfect recollection of their own usage. For example, two years ago I deployed a UC voice and IM solution and had a senior vice president ask "How many people are using IM?". Unfortunately, the UC platform did not provide any detailed metrics and as such, this very reasonable question required conducting an end user survey, which provided imperfect results representing only a single moment in time.

Of course, even having access to all of the detailed unified communication data still requires you to convert the data into information. And during this transformation of data into useful and actionable information, it is important to understand and make the distinction between usage and adoption. Usage simply shows how much a service is being used. Usage tells you how many minutes of audio conferencing were used this week or this month, how many IM messages were sent, how many files were transferred, how many web conferences were held. In contrast, adoption indicates who is making use of a service: how many people in the organization used IM, audio conferencing, desktop video or web conferencing.

Adoption rates allow you to understand who is making use of a specific UC feature. Are there specific roles, locations or departments in your organization that are not using a new UC feature? This type of information can point to the need for specialized training or can indicate a deficiency at a particular location. Understanding the top adopters can help you identify champions that can assist in modifying long-entrenched behaviors. For instance, if desktop videoconferencing is being deployed in

an attempt to reduce travel costs, then knowing and leveraging the people who have figured this out can accelerate your overall project's success. Similarly, understanding users who have abandoned a new UC service can help you to pro-actively manage a potential technology, communication or training issue.

Committing to measuring the results of your UC project can provide unexpected wins. Just today, as I was finalizing this article, I was asked to help a customer identify the best 12-hour window to perform some significant infrastructure upgrades. The upgrade process would likely cause intermittent voice and audio conferencing outages so the intent was to select a period of time that would minimize the end user impact. This customer's UC deployment services approximately 9,000 individuals who make use of more than 1 million minutes of audio conferencing per week, so there was a the risk that this upgrade would impact a significant number of users.

The good news was that the customer had taken the time to install UC monitoring services. This meant that, based on a historical analysis, we were able to predict that a maintenance window spanning Saturday night and Sunday morning would likely impact on average only seven users. Because this customer measured UC, we were able to use the collected UC data to minimize and quantify the risk and impact associated with this planned outage.

Sharing Your Success

In many cases, if a business plan was created to justify a UC project, once the project is started the business plan is tossed in the trash, never to be seen again. However, in a few cases an executive actually asks you to compare reality with the previously approved business case.

I am working with a CIO now who, after two years, is interested in understanding how an original business case to implement an on-premises UC solution is faring compared to the projected numbers. A key part of the cost savings expected to this project related to shifting audio conferencing from a per minute hosted bridge to an on-premises (predominantly) fixed-price solution.

A commitment to establishing objectives for your UC project and then to implementing the tools and processes to measure outcomes allows you to prove your project was a success. Further, as noted above, the same tools used to measure usage and adoption can be used to make better ad hoc business decisions related to operational matters.

Over the years, analysts have compiled a number of standard industry financial ratios that can be used to compare the strengths and weaknesses of one business to others within its industry. I look forward to the day when we can compare communication metrics in the same way. I hope you will consider measuring and sharing the metrics of your next UC project for the benefit of us all. **IT**

Kevin Kieller, who provided this piece courtesy of UCStrategies, is a member of the UCStrategies Experts group providing key insights and analysis to help you better understand UC technologies, products, and trends. He is also a partner at enableUC, a company that helps measure, monitor and improve UC and collaboration tool usage and adoption.

Avaya Buys RADVISION

Avaya Inc. in March announced plans to acquire RADVI-SION Ltd. for $230 million. The latter is a leading provider of videoconferencing and telepresence technologies over IP and wireless networks. Upon closing, RADVISION's enterprise video infrastructure and endpoints will be integrated with Avaya's Aura UC platform. "With this acquisition we will seek to extend videoconferencing to any device, anytime, anywhere, making it as easy as a phone call, seizing the opportunity to deliver a fully-integrated solution and architecture that we believe sets us apart from the competition," says Kevin Kennedy, president and CEO of Avaya.

Infonetics Sizes the Market

Market research firm Infonetics Research reports that the global enterprise videoconferencing and telepresence market jumped 15 percent, to $882 million, between the third and fourth quarters of 2011, setting a record high for quarterly revenue. For the full year 2011, sales of videoconferencing and telepresence equipment are up 34 percent to $2.99 billion. Infonetics expects $22 billion to be spent by enterprises on videoconferencing and telepresence hardware and software from 2012 to 2016. "Sales of telepresence and videoconferencing equipment surged in the past two years, with growth accelerating in 2011 as video took off on enterprise IP PBX systems. The videoconferencing market is being fueled by a confluence of factors, including the proliferation of video-capable equipment, demographic and communication trends that favor video, industry use cases like tele-learning and tele-medicine, and most importantly, customer demand," says Matthias Machowinski, directing analyst for enterprise networks and video at Infonetics Research.

GIA Offers Videoconferencing Forecast

Global Industry Analysts Inc. recently reported "the world videoconferencing market is expected to reach $14 billion by 2017 and will be driven by factors such as an increase in enterprise mobility and subsequent rise in the number of mobile workforce, growing prominence of telepresence and increasing adoption among small and medium sized businesses."

Huawei Places Second

Huawei is No. 2 in telepresence, according to a recent posting on TMCnet, the online entity of INTERNET TELEPHONY parent TMC. The piece reports that Huawei's technology is in use by 45 government institutions and more than 100 corporations, and that, in China, Huawei is the No. 1 telepresence outfit. Huawei's new telepresence set, called the TP3106, has 1080p resolution (1920x1080) and delivers 60 frames per second.

Setting the Tone

Tone Software Corp.'s new ReliaTel Management Solution 4.0 Release features advanced performance dashboards, extended AccessPlus remote access, prioritized traceroute, alarms blacklist, and agentless Windows Server monitoring. Developed to address the needs of managed service providers, integrators and enterprises, the new release was designed to boost operational efficiency, lower costs, and improve the ROI on VoIP and unified communications investments.

The APEX of Videoconferencing

At the intersection of social media and videoconferencing is a new category that Fabio Tylim, vice president of sales at APEX Voice Communications, refers to as social videoconferencing, according to a recent article on TMCnet. The APEX Multimedia Composition Engine makes social videoconferencing possible by injecting media from different formats into videoconferences. That includes social media elements like live video feeds and Twitter or Facebook feeds. "It lets users share a rich multimedia experience with friends and family," Tylim explained during a conversation at ITEXPO East 2012.

VNPT Taps Polycom

Vietnam Post & Telecommunication has introduced a cloud-delivered videoconferencing service that leverages the Polycom RealPresence Platform. Pham Duc Long, vice director of VNPT HCMC, says that, "Increasingly, Vietnam businesses are turning to video collaboration as a mission-critical productivity tool, and cloud-based video-as-a-service options make it fast and easy to deliver videoconferencing while dramatically reducing the cost to support multi-party video meetings." The company's offering on this front is called MegaConference.

Making Its Mark

A company called BigMarker.com offers a videoconference solution that integrates social communities and collaboration, and delivers unlimited web conferencing with recording and collaboration tools that allows user to assign tasks, share files, track progress, send newsletters, and post announcements on the community bulletin. "BigMarker demonstrates how organizations and individuals can organize online to engage consumers, train staff, and reach new audiences," says Zhusong Mei, CEO at BigMarker.com. BigMarker's Public Communities are free, while Private Communities are priced at a monthly fee of $19.95.

Meeting Service Adds VoIP

join.me, the popular online screen sharing and meeting service from LogMeIn , has added VoIP capability to make collaboration easy no matter what the caller's location. By using the free VoIP service from a PC, Mac, iPad or iPhone, customers can collaborate with up to 250 other people at a time. "VoIP has been one of the most requested features from join.me users looking for a better way to share. With this release we've added an audio component that we believe is as powerful and easy to use as join.me itself – adding value without the complexity," says Lou Orfanos, director of collaboration products for LogMeIn. "Whether it's a sales pitch or a brainstorm, we believe sharing and collaborating should be frictionless and easy so people can focus on the task at hand, not the logistics of a meeting."

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Third Time's a Charm
Successful Mobile Strategies in the Retail Vertical

Retail strategies related to mobile communications have been a mixed bag. Using wireless technology as a means with which to alleviate specific customer pain points, however, has been very successful for select brands like Starbucks, Tesco and Walgreen's. Meanwhile, Macy's is rocking the wireless opportunity via its Backstage Pass promotion.

Altimeter Group analyst Chris Silva says that the Starbucks effort to lower customer wait times by providing a mobile application that allows store visitors to click to pay using a bar code at store cash registers is a winner. Starbucks first introduced this capability at a handful of stores, but it's at all Starbucks stores in the U.S. and Canada now, and the company is looking to take it global. Starbucks last year processed 26 million payments accounting for $110 million in revenue using the mobile app, according to a website called The Verge.

Meanwhile overseas, U.K.-based grocer Tesco is leveraging wireless in an entirely different way. Silva explains that Tesco research showed that consumers in South Korea strongly dislike grocery shopping. So in this market the company introduced Tesco Home-plus, which uses signage in the subway to recreate the feel of a grocery store. That way, people can quickly scan with their cell phones the desired items depicted on the subway platform signs and have those products delivered to their homes. Tesco Home-

plus has made Tesco the No. 1 delivery grocery in South Korea, says Silva.

And Walgreen's recently came out with the first mobile application in the U.S. that enables consumers to scan the code on a pill bottle using a smartphone to order a prescription refill. What's especially interesting about this example, says Silva, is that the person who suggested it initially was told that no one could figure out how to scan a code on a curved bottle. But they did it.

As for Macy's, the clothing, personal goods and home products retailer provides customers that scan the QR codes on its holiday circulars with hours and promotions at those customers' area Macy's locations. This may not seem all that innovative, but it is a leap in functionality when you consider that the initial mobile barcode applications typically just sent consumers to general retail websites, most of which weren't even optimized for mobile use.

Today, most retailers are on the second or third iterations of their mobile strategies, Silva says. While the first iteration typically involved directing customers to a standard website, he says, retailers tended to go overboard during second-stage mobile strategies and provide too much functionality. But by the third iterations, he adds, retailers are typically dialed into what pain points they're trying to address for their customers. **IT**

Mobile Strategies for Retailers

The 2011 holiday shopping season witnessed the most aggressive use of mobile technologies to date by consumers and retailers, unfortunately most retailers didn't have strategies on this front.

77 percent of smartphone users use their smartphones in a store; 44 percent of users are shipping while multitasking on mobiles; 58 percent of adults are somewhat or very likely to make a purchase using their smartphone

2011 saw a surge in mobile users, but 2012 is the year when smartphone owners became the majority of users

Source: Altimeter Group

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Study Reveals Retailers' Top Priorities for 2012

A new report from the NRF Foundation and KPMG LLP called Retail Horizons: Benchmarks for 2011, Forecasts for 2012 looks at retailers' top strategic initiatives for 2012.

The survey of 247 retail executives from various sectors indicates that nearly 67 percent of companies rank customer satisfaction as the top strategic initiative for 2012, while 82 percent say customer service strategies will be their top priority in the coming year, up from 75 percent last year.

Leveraging communications is likely to be a key method through which these retailers move to address that priority given the fact that, for the first time in the survey's 10-year history, retailers' websites or online channels eclipsed physical stores as the top channel for marketers (81 percent for brick-and-mortar vs. 86 percent online).

Indeed, retailers surveyed said enhancing handheld efforts like mobile point-of-sale efforts will be a core focus over the next 18 months. And 45 percent of the companies surveyed said they are developing widgets, gadgets or advanced links that can be incorporated with their social media pages, and another 41 percent working to develop these items in the next 18 months.

INTERNET TELEPHONY recently spoke with Mark Larson, KPMG's global head of retail, about other key takeaways of the study, as well as how retailers are being impacted by – and moving to gain benefits from – communications technologies such as wireless.

If there's just one thing retailers need to know about the findings of the recent NRF/KPMG report, what is that one thing?
Larson: Customer visibility and customer engagement are more important than ever. Retailers see customer satisfaction as the key conduit to accelerating sales growth, particularly amid declining retention rates and increased fragmentation. Retailers have stepped up efforts to build customer engagement and loyalty in response, with investments targeted at personalized, one-to-one marketing and customer-specific promotions – and technology plays a huge part in that.

How are retailers being affected by the rise of the smartphone and other wireless technologies like tablets?
Larson: Smartphones and tablets are empowering the consumer like never before. In a recent KPMG study of consumers and technology adoption/convergence, 38 percent of consumers said they use their mobile device to access coupons while in the store, and one in five scanned a product barcode while in the store to compare prices or obtain more information. Retailers must come to grips with this and use it as an opportunity for positive customer engagement. The ones who develop the right strategies and approaches to the mobile platform will be in much stronger position to capture more consumer wallet share. According to

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Other KPMG/NRF Survey Findings

• Thirty-three percent reported increases of greater than 5 percent in same store sales in 2011, up from 21 percent in 2010. Additionally, 63 percent reported gross margins greater than 40 percent in 2011, up from 40 percent in 2010.

• After years of practicing cost containment, this year more than half (52percent) of respondents plan to increase their IT budgets.

• Nine in 10 (91 percent) respondents said they will focus on leadership assessment, development and succession, up from 83 percent in 2011. Additionally, 52 percent will increase associate training, up from 39 percent last year.

• As the number of multichannel shoppers continues to grow, so will retailers' focus on price optimization – more than one-third (35 percent) of respondents will focus on solidifying their price optimization technologies over the next 18 months.

• Nearly six in 10 (59 percent) say new customer acquisition is their top strategic priority for 2012, up from 55 percent in 2011.

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this year's KPMG/NRF Retail Horizons study, respondents indicate that mobile payment platforms for consumers to make purchases either in store or online will continue to gain momentum in 2012. Four in 10 say building out their mobile shopping and payments capabilities will be a key strategic priority over the next 12 months, a 15 percent increase over this year.

What retailers have been most successful in using the popularity of wireless devices to their advantage?
Larson: The customer experience in the Apple Store is a very good one. The store associate can help the customer through the entire shopping experience – from providing product information to executing the entire sales transaction with the use of a smartphone.

What else can and should retailers be doing on this front?
Larson: Retailers need to embrace the concept of omni-channel. Omni-channel refers to the integration of each of the touch points with the customer – the physical store, online, mobile and social media. The idea is to offer a consistent look and feel across channels. With the explosion of e-commerce and m-commerce, it is more important than ever for retailers to enhance the experience in their physical stores. One of the advantages a physical retailer has over a virtual one is the store associate. When trained appropriately, the store associate can help improve the customer experience and drive sales. And technology – tablets, smartphones, kiosks – can be employed by the retailer to arm the store associates with tools to enhance the customer experience. **IT**

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By Paula Bernier

Thinking Outside the (Set-top) Box

The set-top box space used to be a very predictable one. You had Motorola, and you had Scientific Atlanta. And, for the most part, that was it. These companies, and a few smaller names, sold boxes that gave consumers access to a variety of standard and premium broadcast and on-demand programming. And, for the most part, that was about as exciting as these things got.

Then along came IP and over-the-top services, and they turned the world of TV upside down. In the process, the set-top box space has seen its fair share of changes as well.

In terms of the boxes themselves, we're seeing a lot more in the way of functionality.

"STBs are becoming gateways, combining the traditional STB function with a modem, Wi-Fi or fixed (MoCA, HPNA, HomePlug) access, more open conditional access software, as well as higher-performance processors to handle traditional broadcast/multicast, OTT, and transcoding capabilities for delivery to tablets and mobile devices in the home," says Jeff Heynen of Infonetics Research.

A June 2011 story in The New York Times reports that there are 160 million set-top boxes in the United States, one for every two people, and it says that number is rising. Heynen of Infonetics says the two primary

reasons for that are the transition from analog to digital, which requires some sort of set-top box, and digital video recorders.

"The STB market is not going to just disappear, even with all of the other threats," Heynen says. "They provide a valuable connection to your video content. They might not be required at every TV set in the home in the future, but they will be a necessary tool at your living room set."

Still, over the next few years, sales of set-top boxes are expected to be flat to slightly down, Heynen adds.

"It isn't the horrible market people are making it out to be," he says. "For example, we're expecting CY11 revenue to be around $13.6 billion worldwide, decreasing to $13 billion in CY15. North America will be about $6 billion in CY11 and $5 billion in CY15."

Cisco, which bought Scientific Atlanta in 2006 for $6.9 billion, holds what Infonetics says is "a commanding lead in both revenue and units for IP STBs." Motorola, meanwhile, leads in cable STB revenue, the research and consulting firm reports, which adds that Pace overtook Motorola just slightly in overall set-top box revenue – for cable, telco and satellite operators – in the second quarter of 2011. Skyworth Digital leads in cable STB unit shipments, according to Infonetics. ADB, Echostar, Humax and Technicolor are some of the other larger players across satellite and cable, Heynen tells INTERNET TELEPHONY. And, he adds, ARRIS and

Samsung are also pushing their home devices strategies, which address the set-top box space.

Of course, the fate of Motorola's set-top box assets remains to be seen given Google recently bought them and is reportedly already looking to sell them off. Meanwhile, rumors persist that Cisco wants to get out of the set-top box business, although the company says such reports are unfounded.

Google apparently has hired investment bank Qatalyst Partners LP to find a buyer for the Motorola set-top box assets that it got as part of the $12.5 billion purchase of Motorola Mobility. That deal was primarily driven by Google's interest in Motorola patents related to wireless technology, so it doesn't really come as no surprise that Google wants to get rid of the Motorola set-top box business. Heynen adds that the set-top market is not a core one for Google and that it may not be a particularly attractive area to enter at this point given it's a shrinking opportunity.

"It is still a high-revenue business, but the margins keep getting lower as new entrants like Samsung and others continue to eat into share, particularly in emerging markets," he says. "In North America, where Motorola has dominated for years, the plan for cable operators is to move away from proprietary conditional access systems at the headend and STB levels, which means Moto won't have a lock on that business. Instead, more competitors will enter the market, driving down already low margins.

"For Moto, the STB revenue used to be helpful in propping up the struggling wireless handset division," Heynen adds. "But with Google, that doesn't matter."

Shrinking margins in the set-top box business, Cisco's elimination of 6,900 jobs at a Mexico-based set-top facility, and that fact that Cisco has dialed back its consumer-focused aspirations has also led some to question John Chambers' commitment to this part of its business. The theory that Cisco is considering selling off its set-top box business recently resurfaced in a spate of articles. But a Feb. 20 blog by Cisco's John Earnhart aims to dispel this thinking.

"Every few months there seems to be a rumor or speculative comment about our commitment to our set-top-box business," he writes. "Let me be as clear as I can: we love set top boxes."

Earnhart goes on to reiterate Chambers' comment in Cisco's second quarter fiscal year 2012 earning transcript, which says: "In terms of set-top boxes, we are very much committed to this marketplace. Our SP customers asked us to partner with them as they move from traditional set-top-boxes to IP set-top-boxes to the cloud, our Videoscape solution. Receptivity so far has been very, very good in terms of our strategy."

Cisco did not respond to INTERNET TELEPHONY's mid-March request for an interview on its set-top strategy. A few days later, however, Cisco announced plans to buy video software and content security outfit NDS Group Ltd. for $5 billion. Cisco said the acquisition will help it "accelerate the delivery of Videoscape."

The rise of IP and over-the-top services have turned the world of TV and set-top boxes upside down.

Of course, Cisco is not the only one looking to overhaul completely the idea of the set-top box. Apple TV, and smaller outfits like Boxee and Roku, did that long ago (long ago in Internet time time, that is). Google more recently joined the fray with its Google TV offer. And now even Intel is reportedly working to get in on the act.

Intel "has for several months been pitching media companies on a plan to create a 'virtual cable operator' that would offer U.S. TV channels nationwide over the Internet in a bundle similar to subscriptions sold by cable- and satellite-TV operators," according to a report in March 13's issue of The Wall Street Journal. The piece goes on to say that the launch of the service, which reportedly will rely on Intel-created set-top boxes, is expected by the end of this year.

That could further morph the definition and market share of the set-top box. But, for now, Apple TV leads the over-the-top set-top box market, according to a report put out in December by Strategy Analytics. Apple, which in early March upped the ante with its set-top box play by introducing a high-definition (1080p) version of Apple TV, now owns 32 percent of the external connected TV device market, according to the research firm. **IT**

Rebtel Makes Mobile VoIP Pay Off

When it comes to VoIP services, Skype seems to get lots of attention. But a company called Rebtel is attacking VoIP from a mobile perspective, and its mobile VoIP services are ringing up average revenues per user of $23 to $24 a month. That's much higher than Skype's ARPU, which is around $8, Rebtel CEO Andreas Bernstrom tells INTERNET TELEPHONY.

Rebel got its start in 2006 at the hands of the two founders of Sendit, an early mobile Internet company that went public and later was bought by Microsoft for $150 million. Those founders are Hjalmar Winblad, who is now a Rebtel board member, and Jonas Lindroth, who engineered the company's system architecture. These gentlemen saw Skype and its PC-based approach to VoIP, and they felt a mobile solution would be much stronger. So they set out to create a company that offers free or low-cost calls over cellular and Wi-Fi networks via mobile apps for Android, BlackBerry, Microsoft Windows and iOS operating systems.

Today Rebtel is the world's second largest mobile VoIP company (after Skype, of course).

It provides low-cost international calling from mobile devices to landlines, and vice versa, and has both PC and smartphone products. Importantly, Rebtel has termination agreements in place, so its users can call anyone on the Rebtel network or any other network.

Initially the company's sweet spot was first- and second-generation immigrants. But now Rebtel also targets business travelers and what the company refers to as digerati. Rebtel has 15 million users, about 70 percent of whom are in the U.S. The other 30 percent of the company's users are pretty evenly distributed between Canada, the U.K. and the rest of Europe. And Rebtel is growing its customer base at a rate of about 500,000 users a month. Bernstrom adds that the customer base at Rebtel includes mostly heavy users – in the 300 to 400 hours a month range; because users are mobile, he adds, they can use the service anywhere.

Infonetics Research says that while the adoption of mobile VoIP services is growing rapidly, with free applications and extremely low revenue from users, it is tricky for application providers without the deep pockets of larger companies like Google, Microsoft, and Telefónica to have a sustainable long-term business model.
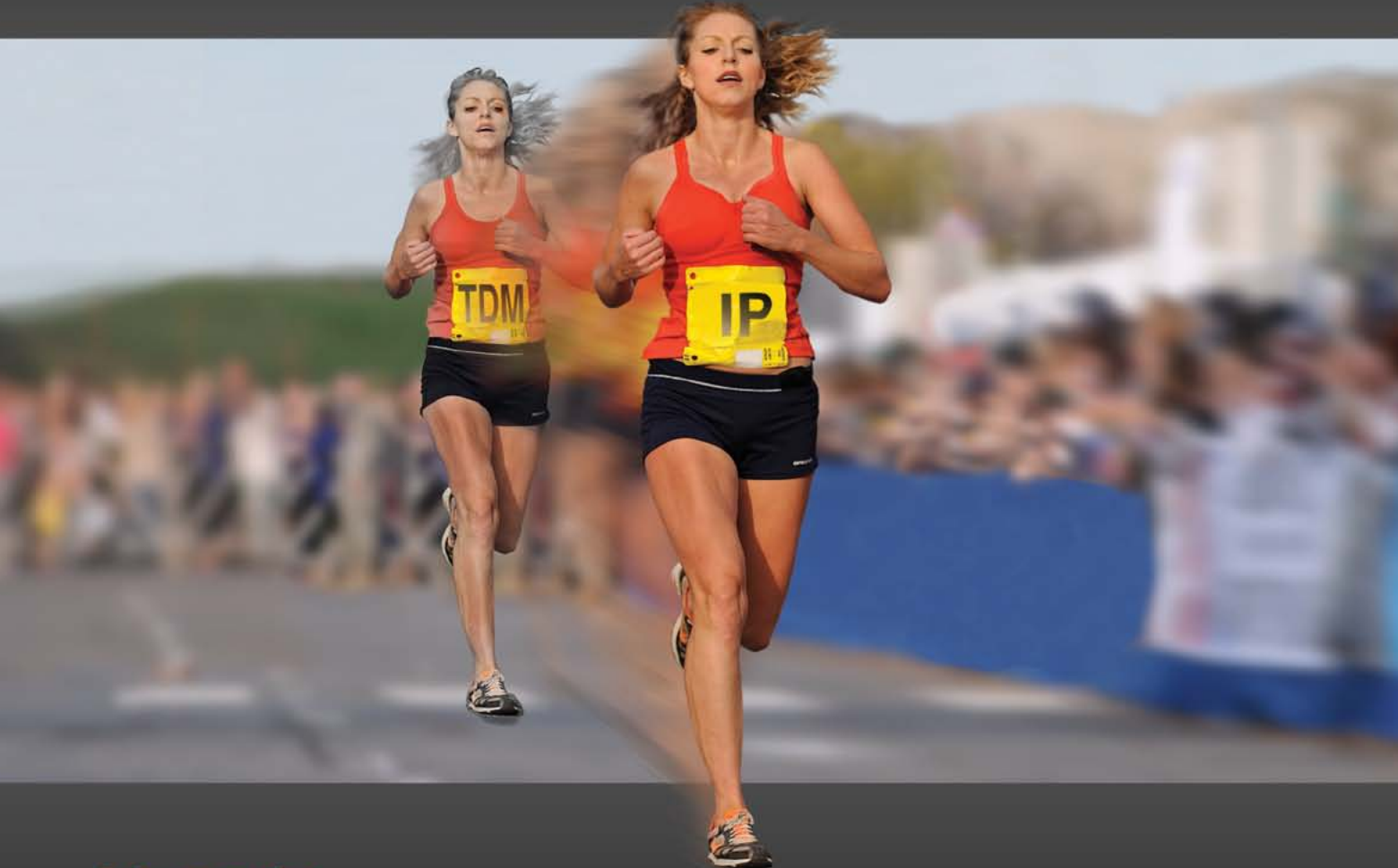
Rebtel CEO Andreas Bernstrom

"Despite the fact that we expect mobile VoIP subscribers to grow nearly 10-fold from 2010 to 2015, there is relatively little money to be made from it in the near term," says Diane Myers, directing analyst for VoIP and IMS at Infonetics Research.

Bernstrom agrees that the tricky part of mobile VoIP is finding a business model that works. Rebtel started with a pay-to-play model, he says, but then added free services to create a funnel for its for-pay options. He adds that international calling and international SMS remain a $150-200 business. And he says that Rebtel takes a 35 percent gross margin on what it buys its traffic for, and it's still able to come in with prices that are 40 to 50 percent cheaper than Skype.

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Rebtel has been profitable since 2010. Company revenues in 2011 grew more than 55 percent to reach $60 million. And it expects to see revenues of around $85 million this year.

"2011 was a great year for us," Bernstrom said following the release of the financial results. "Our new set of international calling apps with KeepTalking technology were well received; we generated 13 times more downloads in Q4 than Q3 as a result of the launch. We also expanded our workforce by almost 50 percent and increased our user base by 50 percent to 15 million users. 2012 will be more of the same. We are focused on growing our user base, we aim to add up to 10 million to our user base this year, as well as maintaining high revenue run rates and ensuring our apps are viral as they can be."

Rebtel's mobile VoIP services are ringing up average revenues per user of $23 to $24 a month. That's much higher than Skype's ARPU, which is around $8, says Rebtel CEO Andreas Bernstrom.

To help continue to drive that growth, Rebtel is poised to expand its product offerings on several fronts.

By May it aims to have DVD/HD quality voice on both its free and pay services. By the end of the second quarter, Rebtel expects to have extended its messaging suite to support rich media. And Bernstrom tells INTERNET TELEPHONY that Rebtel plans to bring video into the mix in the third quarter. The company will start its video with the introduction of a PC-based offer, but Rebtel plans to come out with video offerings for Android and iOS devices starting in the fourth quarter. **IT**
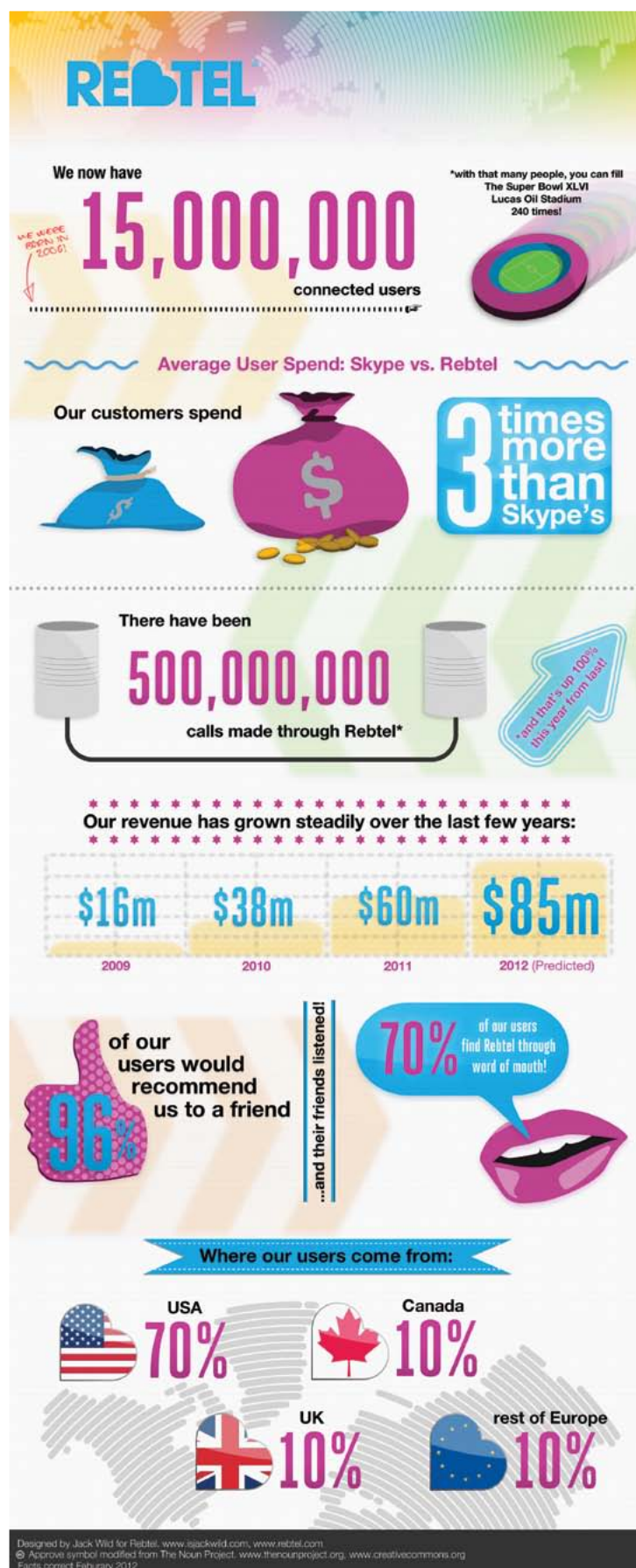
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By Paula Bernier

Making Its Mark
HSPA is Most Widely Used Mobile Broadband Technology

LTE gets the lion's share of the mobile broadband coverage these days, but it's HSPA that is the most widely deployed mobile broadband technology.

Indeed, HSPA is used in more than 400 commercial networks in some 150 countries today. And it's forecast to be in use by more than 3.5 billion subscribers by the end of 2016. In North America, HSPA passed the 100 million connections mark by the end of 2011, Informa Telecoms & Media recently reported.

AT&T is employing HSPA as part of its LTE mobile strategy here in the U.S. The company has deployed HSPA+ to virtually 100 percent of its network, an AT&T spokeswoman tells INTERNET TELEPHONY.

"It's important to us that our customers have a consistently fast mobile Internet experience," says AT&T's Jackie Janus. "Customers of competitors who went straight to 4G LTE without upgrading the speeds on their existing network will see a steep drop-off in speeds when they leave 4G LTE coverage areas. Our customers will have a more consistent speed experience as they move between 4G LTE and HSPA+ coverage areas.

Chris Pearson, president of 4G Americas, tells INTERNET TELEPHONY that LTE is deployed when a service provider gets additional spectrum, but that HSPA and HSPA+ are a great migration path that UMTS operators can jump on right now to lower their incremental costs and make more efficient use of their spectrum.

And that's just what they're doing. All UMTS and HSDPA networks are expected to be upgraded to HSPA, according to 4G Americas, an industry trade association focused on GSM- and LTE-related carriers, issues and technologies in North, Central and South America.

In case you're not already familiar with HSPA, it's a 3GPP technology that stands for high-speed packet access. It's backward compatible with UMTS, EDGE and GPRS, which means that HSPA-enabled devices can default to these networks where HSPA is not available.

HSPA can deliver up to three times the capacity of UMTS networks, meaning carriers can add new services and customers without investing in new spectrum or an entirely new network. From a user perspective, HSPA typically provides downstream rates of 1 to 4mbps and upstream rates in the 500kbps to 2mbps range.

HSPA is forecast to be in use by more than 3.5 billion subscribers by the end of 2016.
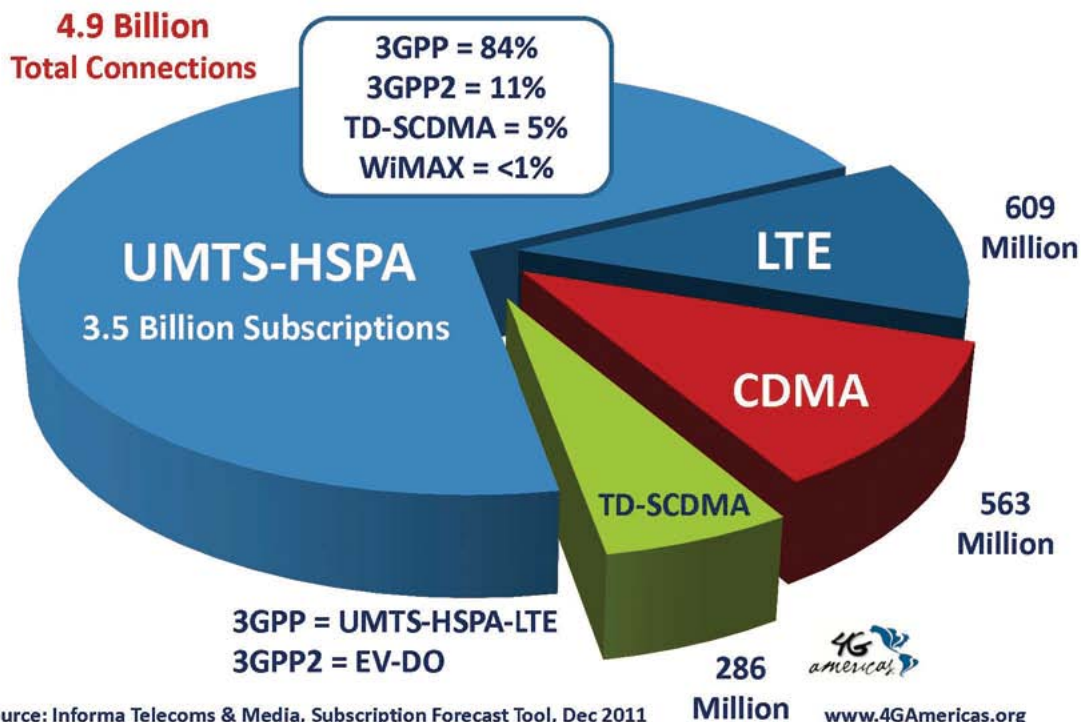
"For example, LTE delivers speeds up to 10 times faster than 3G, and HSPA+ is up to four times faster," she adds. "AT&T customers moving between the two will have a more consistent mobile Internet experience. Compare that to customers of competitors who haven't made the speed upgrades we've made in recent years, and they are falling from LTE to EVDO."

Many service providers abroad also are enjoying the benefits of HSPA. For example, 3 Italia recently upgraded its 3G mobile broadband access, core and transport network to 42mbps HSPA. (A 3 Italia commercial launch of 100mbps LTE is planned for later this year.)

(Although, in late February, Ericsson announced that it has developed a solution that triples uplink capacity in HSPA networks. The company has demonstrated that over-the-air uplink throughput for simultaneously active devices in a cell was increased from around 4mbps to more than 12mbps with the technology.

"The demonstrated capacity is an unprecedented figure for a 5mHz WCDMA carrier," according to an Ericsson press release, which explained these results were achievable through the combination of its commercially available receiver technology, Ericsson Interference Suppression, with 4-antenna radio base stations. "We have proven that Ericsson's unique Interference Suppression is a giant leap forward and it will be the

Mobile Broadband Market Share 2016

4.9 Billion Total Connections

3GPP = 84%
3GPP2 = 11%
TD-SCDMA = 5%
WiMAX = <1%

UMTS-HSPA
3.5 Billion Subscriptions

LTE 609 Million

CDMA 563 Million

TD-SCDMA 286 Million

3GPP = UMTS-HSPA-LTE
3GPP2 = EV-DO

Source: Informa Telecoms & Media, Subscription Forecast Tool, Dec 2011

www.4GAmericas.org

new reference for WCDMA uplink performance for years to come," says Nils Viklund, director of WCDMA RAN at Ericsson. "This can even be further enhanced by combining it with multi-receive antenna technologies. Because these technologies work with existing devices, operators that implement them will instantly benefit from the attractive gain.")

It gets even better with HSPA+, also known as high-speed packet access plus or HSPA Evolution. HSPA+ also brings a variety of new features to the table, including interactive services like push-to-talk, picture and video sharing, MIMO-enabled IP video and voice, and more.

The initial iteration of HSPA+, which employs 64 QAM, provides peak theoretical downlink throughput rates of 21.6mbps in 2X5mHz of spectrum. Typical user speeds for this are on the order of 1.9mbps to 8.8mbps on the downstream and 1 to 4mbps on the upstream. HSPA+ enhancements like dual-carrier operation can double that. And the next release (11) from the 3GPP on this promises peak theoretical speeds up to 336mbps. 4G Americas says that 43 percent of HSPA opera-

tors have upgraded to HSPA+, and nearly all are expected to go this route eventually.

Not only has HSPA technology enabled wireless broadband operators to address capacity needs in the age of the mobile boom and what some say is a spectrum crunch, some also credit this technology as moving the industry forward at a point in which things were stalled.

A January 2012 item on Ericsson's website reads as follows: "The development and early rollouts of HSPA marked the first lights of recovery in the darkness that enveloped mobile broadband in the early 2000s. Just how bright that mobile broadband light was to become surprised many as subscribers embraced the technology, especially through the arrival of the smartphone era."

As of January 2012, there were 423 commercial HSPA networks in 160 countries worldwide; 184 commercial HSPA+ networks in 94 countries worldwide; 31 commercial HSPA+ networks in 19 countries in Latin America; and expectations of 2 billion UMTS-HSPA subscriptions worldwide as of mid-year 2014. **IT**

By Paula Bernier

DigiMo Offers Non-NFC Mobile Payments Solution

The mobile wallet is hot, and it's become more than a concept in recent months with service launches by such big names as American Express and Google. But there's a problem.

Most mobile payment solutions rely on near field communications, and less than 1 percent of mobile phones and point-of-sale terminals contain NFC chips. Gartner forecasts indicate that it will cost on the order of $40 billion to make all terminals in the U.S. NFC-compliant, and that it could take five to 10 years to do so.

That's why DigiMo has come out with a mobile payments solution that doesn't involve NFC.

Yossi Yarkoni, DigiMo's founder and CEO, tells TMCnet that his company wants every handset and every point-of-sale terminal to be able to do mobile payments, and without any costly integration. To allow for that, DigiMo has created an end-to-end mobile payments solution that includes a mobile app, and back end security and financial institution connections.

But there's a potential problem. DigiMo, a privately owned company that is hoping to close $100 million in funding in the next few weeks, still needs to cement partnerships with the financial institutions on which retailers and other potential customers rely. The company is in negotiations with such financial institutions as well as with retailers, its target customers.

Rich Nespola, chairman and CEO of consulting firm TMNG Global, recently told INTERNET TELEPHONY that widespread availability of the mobile wallet in Japan demonstrates the huge revenue potential for mobile money in the U.S., which is the world's largest credit card market by far, he continued.

"Even a tiny slice of global or U.S. credit or debit card transactions presents a significant revenue opportunity," said Nespola. "With no established dominant player in the U.S., telecoms, IT companies, credit card makers and handset makers all see a market up for grabs."

Google a year ago this month unveiled the Google Wallet app. Its partners on the effort include Citi, MasterCard, First Data and Sprint. The first Google Wallet field tests were in New York and San Francisco and involved retailers, Coca-Cola vending machines and taxis. And

Google Wallet service launched in September 2011. Google Wallet initially allows mobile devices to store loyalty cards, offers and credit cards (including Citi, MasterCard, and a virtual Google Prepaid card), and later will enable virtual transit (although that's now available in select areas) and boarding passes and other tickets. Google Wallet is accepted anywhere PayPass MasterCard accounts are accepted, which includes more than 124,000 merchants nationally and more than 311,000 globally.

American Express also recently introduced a digital payment platform. It's called Serve. In addition to enabling digital payments, it allows consumer brands and merchants to deliver special offers to mobile devices, supports loyalty programs, enables money management, and more. American Express has stated it plans to invest $100 million on its digital commerce initiative, which is based out of Silicon Valley and headed up by former Motorola Mobility Ventures executive Harshul Sanghi.

Meanwhile, Visa has introduced V.me, a PayPal-like service "that lets you shop without sharing your card account information with the seller when you pay." A November blog on the Visa website notes the company is working with its financial institution clients and merchants on participation in V.me. In the meantime, the company has launched an invitation-only beta of V.me capabilities in the U.S. and Canada, as well as an open beta developer program designed initially for online payment applications.

ISIS, a venture of AT&T Mobility, T-Mobile USA and Verizon Wireless, is the other big mobile wallet push in the U.S. ISIS reportedly expects to launch in two cities toward the middle of this year. **IT**

What Does User Experience Really Mean?

By Erik Linask

If you ask communications vendors about their latest product innovations, or stroll through the aisles at a tradeshow, it won't take long for you to notice language incorporating the concept of user experience. It's not a new term, but it is one that has lately become something of a catch phrase.

It's not that mobility, unified communications, cloud, and other hot topics have gone by the wayside. Rather, it seems the industry at large has conspired to group all innovation under the user experience heading. The result, effectively, is an inability to define user experience, which actually plays favorably to the industry as a whole. Instead of conforming to standard definitions, vendors and their customers alike are at liberty to define the term as they see fit, allowing them an easy – and effective – path to enriching their offerings.

This theory was abundantly apparent as I met with a number of companies recently at the Enterprise Connect show in Orlando.

One of the hottest topics in the enterprise space over the past 18 months has been the E-SBC. The SBC traditionally has been a service provider network element, but more recently it has evolved into an enterprise-class product from the likes of AudioCodes and Ingate, allowing enterprises to leverage more effectively SIP trunking to make use of the UC features available to them. ADTRAN has now also added SBC functionality into its Total Access 900e and NetVanta 3430 products, with additional products to follow.

The company doesn't claim to be first to market with such a product – or even with a software-based SBC capability, which AudioCodes announced at the same time and Ingate had introduced in February at ITEXPO East in Miami. According to Chris Thompson, senior product manager, and Bob Locklear, director of business development, enterprise networks, at ADTRAN, the launch is about adding stability and increased functionality to its products by eliminating the need for a third-party product, and follows the ADTRAN model of entering a market and enhancing its product capabilities once market has begun to mature and demand has been proven.

Alcatel-Lucent brought out OpenTouch, the rebranded evolution of its enterprise communications platform. According to Craig Walker, director of worldwide product marketing, OpenTouch is about enabling the BYOD trend in enterprises, while breaking down the traditional UC silos that have hindered true adoption of many UC features. Among the features available with OpenTouch is the use of a single application across all device types, allowing users to choose or switch devices at will without changing their experience.

"Users want to communicate with a person, not a device," he says. "So, you need to be able to dial the individual, regardless of what device they choose to use. The system must have device awareness."

And Voice4Net's new CCHD (Contact Center HD) software has been designed to allow businesses to run their contact center environments leveraging all modalities of their choosing, rather than limiting them to traditional voice.

"We look at voice as another contact type – chat, social media, SMS, e-mail and other forms of communication are all contact types that need to be incorporated into the system," says Founder and President Richard McFarland. "It's about how the customer wants to come into the contact center."

The company is also developing a Facebook "handshake," which will create a relationship deeper than a simple "like," allowing businesses to leverage more effectively customer data, with an eye toward creating a richer vendor-customer relationship to drive customer satisfaction.

These are only three examples, representing three very different businesses and models, but all ultimately explain how the company is delivering a better user experience. They also are representative of the overall trend in the enterprise communications space finally to deliver on the promise of unified communications.

But, much like the definition of UC is subject to interpretation, user experience also lends itself well to the whims of both vendor and customer.

Some might argue that innovation seems to have slowed in the industry, looking merely at a small subset of the community, where several vendors are bringing like products to market. Or they may point to the apparent overuse of the concept of user experience. But that's how the competitive market thrives – when you see something that works and is in demand, your best bet is to follow, then continue to evolve.

As for user experience, there are as many definitions of user experience as there are vendors – or perhaps customers. We've heard this song before, when UC first came into being as the evolution of VoIP. While it may seem confusing, the fact remains that each customer has a unique expectation of experience, making it inevitable that the vendor community will find itself defining it in the eyes of its customers and its products. After all, customer experience is akin to customer satisfaction, which is the ultimate business driver. **IT**

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