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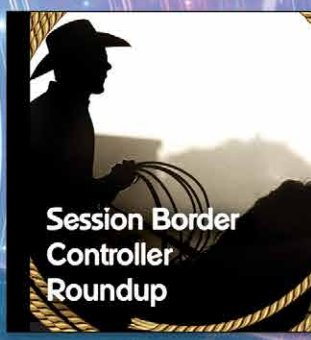
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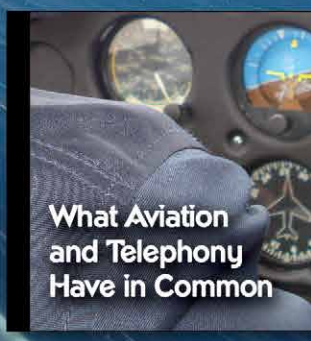
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Internet telephony is revolutionizing telecommunications through the convergence of voice, video, fax, and data, creating unprecedented opportunities for resellers, developers, and service providers alike. ***INTERNET* TELEPHONY®** focuses on providing readers with the information necessary to learn about and purchase the equipment, software, and services necessary to take advantage of this technology. ***INTERNET* TELEPHONY®** readers include resellers, developers, MIS/networking departments, telecom departments, datacom departments, telcos/LECs, wireless/PCS providers, ISPs, and cable companies.

What's Next for WebRTC

WebRTC has become such an important new area of communications that INTERNET TELEPHONY this issue added a new standing column on this topic.

The column comes courtesy of Phil Edholm, president and founder of PKE Consulting LLC. Edholm is a TMC partner who works with INTERNET TELEPHONY magazine's parent company to stage the WebRTC Conference & Expo, which will be held next time from June 17 to 19 in Atlanta.

WebRTC Conference & Expo is one of industry's most rockin' events. The most recent event drew more than 800 attendees from 294 companies, 590 social media mentions, 74 sponsors, and 50 exhibitors. And we expect it to continue growing.

The June 17 to 19 event in Atlanta will feature keynotes from such industry leaders as Avaya, Dialogic, Genband, Google, Requestec, Saypage, Temasys, TokBox, and Vidyo.

Speaking of ToxBox, the company recently surveyed more than 1,000 professionals about their current or planned use of WebRTC technology. Of those surveyed, 77 percent said they are working on a real-time communications application. Meanwhile, 88 percent responded that they consider WebRTC to be increasingly important or already critical to their current work. About 80 percent suggested they plan to increase their WebRTC usage, while 60 percent said they plan to decrease Flash usage. Among the top applications for WebRTC, according to the survey, are videoconferencing, telecommunications, customer service, education, health care and telemedicine.

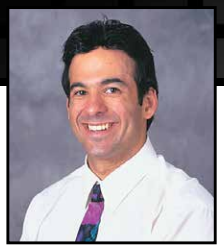
Dean Bubley of Disruptive Analysis, which recently came out with new data on WebRTC, reports that devices forecast to support WebRTC at the end of 2014 have been reduced from 1.7 billion to 1.6 billion; devices expected to support WebRTC by the end of 2016 have increased from 4.2 billion to 4.7 billion; the mix of devices supporting WebRTC has skewed toward mobile from PC, and from browser-based to non-browser-based; and that there will be an estimated 1.8 billion active WebRTC end users (individuals) by the end of 2016.

In a March blog Bubley wrote that there's a new trend toward non-browser WebRTC, especially on mobile devices. This trend relates to the recent Tuenti and WeCom launches in March, he said, as well as the recent American Express video chat iPad app and Amazon Mayday button.

"These developments reflect both positives and negatives about WebRTC's evolution. At one level, there are issues with the lack of IE/Safari support, and continued debate over video codecs. Security and firewall/network middle-box traversal (in some instances) remain issues being addressed by IETF," Bubley wrote. "But what offsets these problems is the large and growing emphasis on getting on with it anyway, in pre-standard form, and often using cloud platforms and third-party SDKs to embed WebRTC into mobile apps, standalone PC applications and yes, even plug-ins. This is inevitably slowing down some use-cases, while speeding up others."

Bubley adds that by the end of 2014, a large percent of new Android devices will be WebRTC-enabled out of the box, some in multiple different ways.

Beyond just looking at the number of devices or individuals using or expected to use WebRTC is the larger picture of what it means, of course. As Edholm writes in his inaugural WebRTC column this month: "The webification of communications is not a single technology, but rather a transformation of the basics of communications. Instead of having a single server that manages all of my communications, the webification process will free me to interact directly with millions of web servers to manage a succession of independent communications events, each tuned to the specific needs and requirements of the event, not an arbitrary vendor paradigm. Just as we all have hundreds of different web information experiences monthly, each web communications experience can be defined by the suite hosting the event." IT



Bitcoin & Beyond: The Dawn of Currency 2.0

Whether you watch financial networks or mainstream networks, you can't help but see stories about Bitcoin, the cryptocurrency founded by what was thought to be secretive a Japanese resident Satoshi Nakamoto. It turns out that reporters now believe he is living in Los Angeles but he vehemently denies this claim.

All of this is of great interest to me. A while back I penned a piece on why Bitcoins were a better investment than gold. Since then, the value of this new currency has shot up (and down) dramatically, but central exchanges holding the virtual currencies of customers have gone belly up, costing customers millions.

One reason why virtual currencies are attractive to many is that they are free from governmental intrusion. By that I mean that governments as a result can't inflate the money supply, and they can't decrease the value of your investment.

Bitcoin has also been a great way for people to get money out of a country when government regulators have made it illegal. It's especially useful for this kind of thing in places like China and Argentina, for example.

Getting back to the media – what you'll see on TV and online is talk of whether Bitcoin will make it. The answer at this point is not certain. There are lots of competitors, and new currencies are appearing all the time. What we do know, however, is there is a huge need for something new.

We sit at the intersection of technological advancement and economic irresponsibility at many central banks. That is causing a perfect storm, which will result in a class of solutions I call currency 2.0.

Wolfgang Münchau summed it up nicely in a recent piece in the Financial Times when he said: "The combination of financial deregulation and globalisation, national economic policies and a lack of global co-ordination is unsustainable. Something that is unsustainable either ends, or is made sustainable.

"The experience of our handling of the global financial crisis and its various regional cousins would suggest that big-system change is unlikely," continued Münchau. "The G20 and other international debating clubs have achieved little in terms of financial sector reforms and monetary policy co-ordination. The financial lobbies are stronger than ever. Just as 10 years ago, the policy establishment has no clue how to control financial bubbles. Whatever the priorities are of the advanced countries, making the financial system sustainable is not at the top of the list.

"If global instability persists it will produce more crises," Münchau added. "Whether the next Bitcoin or its successors can succeed is impossible to forecast. But the environment is one in which an alternative decentralised system could flourish."

This is the logic behind TMC's newest conference, Currency 2.0. This event will take place July 22, 2014, at The Kimmel Center in New York City.

Anyone who follows what the Federal Reserve is doing – even casually, (called quantitative easing) understands that when you virtually print $75 billion-plus dollars per month to pump into your economy, there is something majorly wrong. Any student of history knows this sort of policy ends poorly every time.

Could it be different this time? Perhaps. But would you bet your life savings on it? How about your children's economic future? Probably not.

This is just part of the reason why I think the world needs to gather at a centralized conference to discuss the future of currency, so TMC has gotten busy to make that happen.

Currency 2.0 will discuss Bitcoins, of course, but address much more. It will be a place where tomorrow's currencies are discussed, evaluated and designed while today's opportunities are explored. Investors, regulators, libertarians and technologists are all invited to attend. **IT**

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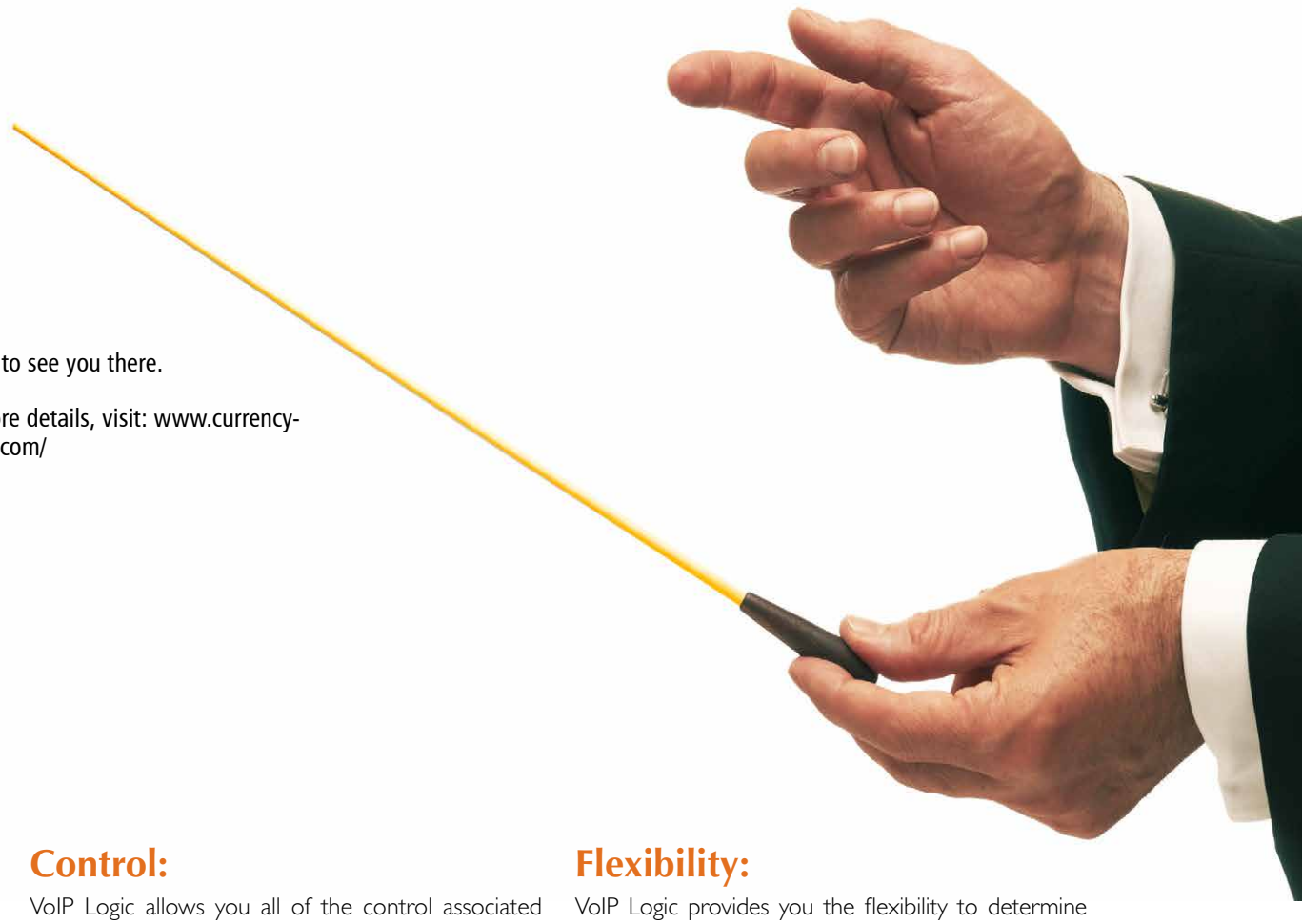

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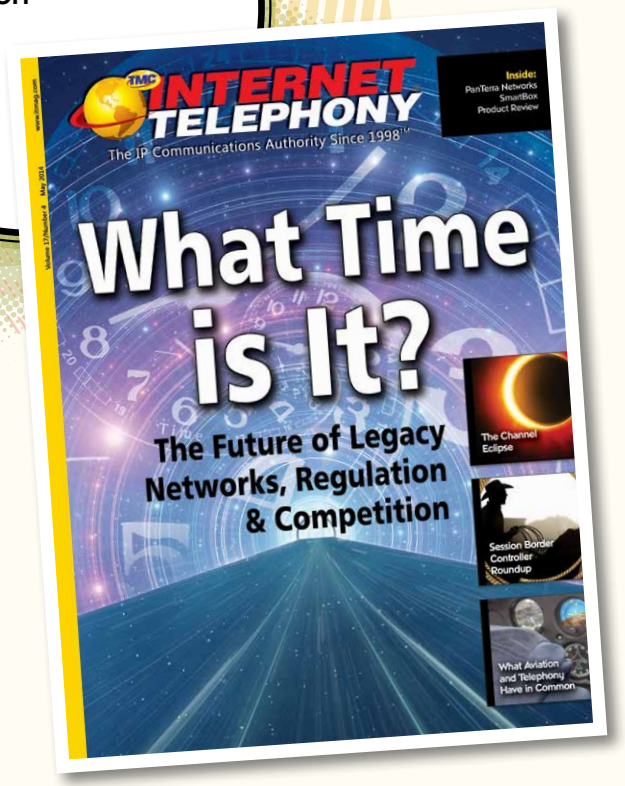

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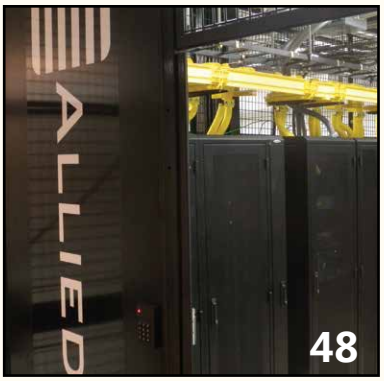

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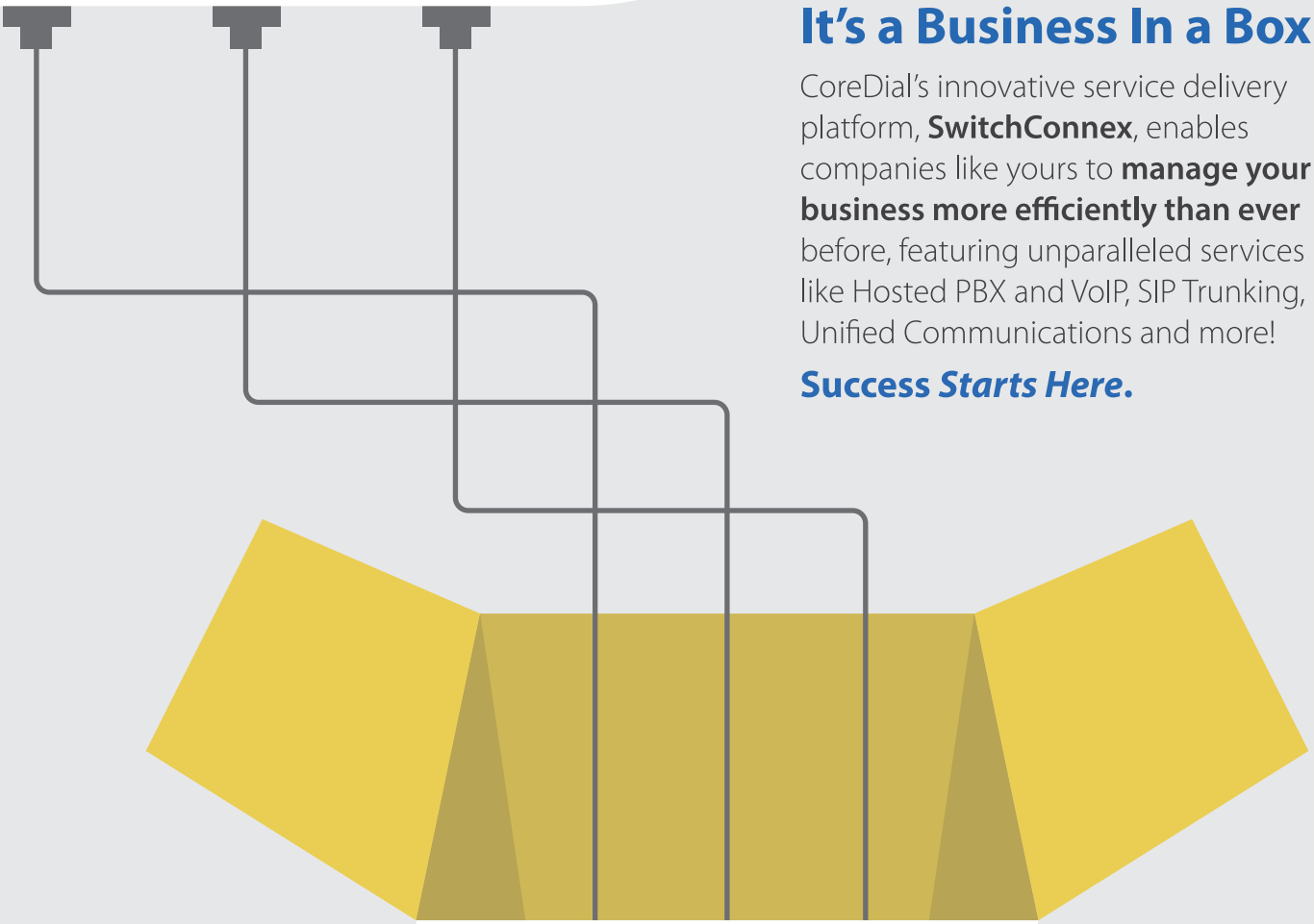

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By David Williamson

Hybrid DNS Technology

Finally, a Way to Protect Against Crippling Cyber Attacks

Traditional security approaches aren't sufficient to mitigate attacks on DNS servers, which are at an all-time high. With distributed denial of service, DoS and cache poisoning attacks becoming more frequent and disruptive, many companies, along with early adopters such as telcos, ISPs and managed services providers, are turning to a new approach – hybrid DNS technology – to help them outmaneuver cyber attackers. Hybrid DNS eliminates the code vulnerabilities of standard DNS engines, making it virtually impossible to compromise DNS servers.

Hybrid DNS eliminates the code vulnerabilities of standard DNS engines, making it virtually impossible to compromise DNS servers.

In the last quarter of 2013 alone, the total number of DDoS attacks increased 26 percent from the same period the year before. The average attack lasted 23 hours with many consuming over 100gbps of bandwidth. For Internet-dependent businesses, DNS attacks can be crippling, resulting in significant revenue loss and damage to customer relationships and brand equity.

Why are DNS servers so vulnerable? They play a central role in managing user access to websites, e-mail and other web apps, translating between IP address numbers and domain names. And because they are public by design, hackers are very familiar with the security holes and vulnerabilities of DNS servers and their software.

Traditional endpoint security solutions can't protect against DNS attacks. That's because tools such as antivirus, antispyware, firewalls and host intrusion prevention systems, are geared to protecting devices that access the network by ensuring they comply with corporate security polices, but they don't protect the DNS servers themselves. This enables cyber criminals to manipulate DNS server software so that it contains bogus or fraudulent IP addresses. If the hack is successful, the targeted name server responds to client requests with these phony IP addresses. The misdirected client then communicates with the wrong servers, which are potentially owned and controlled by the hackers themselves.

Hybrid DNS technology takes a different approach. Whereas most DNS servers run a single DNS engine, such as Berkley Internet Name Domain, whose key authoritative and recursive functions are contained within the same code, hybrid DNS uses multiple DNS engines in the same server appliance, making its security footprint baffling to hackers. It achieves this by running a different type of algorithm for each DNS engine. By incorporating a second DNS engine in the same appliance with separate authoritative and recursive functions, the security and reliability of critical DNS services are significantly improved. Using an alternative DNS engine that is based on two different name server products, such as Unbound and NSD, enables performance to be significantly better than with BIND alone. Such high performance is particularly important for telcos, ISPs and other managed service providers, whose businesses depend on delivering fast and reliable Internet connectivity. Unbound, for example, is a validating, recursive and caching DNS resolver that is designed for high performance while NSD is an authoritative only, high-performance name server. At any moment, one DNS engine is active and the other is on standby, waiting to be activated to restore the service when needed.

Hybrid DNS technology provides the highest level of security for name servers and delivers several crucial benefits: When a new security alert is issued, a network owner can quickly and temporarily switch to another engine. The alternative engine can remain in place while DNS programmers patch, test and validate a security upgrade for the first engine. Moreover, with multiple DNS engines in place, hackers will never be sure which name server software is running. This makes the task of analyzing DNS network packet footprints to discover vulnerabilities complex and nearly impossible.

By using hybrid DNS technology, businesses can move from reactive mode – where their main focus is on analyzing the severity of attacks after they have occurred and the damage has been done – to proactive mode. Now, they can protect against DDoS, DoS and other DNS attacks happening in the first place. IT

David Williamson is CEO of EfficientIP (www.efficientip.com).

By Barlow Keener

Flexible Spectrum Solutions
New Radio Technology is Akin to SDN Routing

Broadband microwave radio technology is evolving to spectrum selection using big data and SDN-like architectures. What is lacking is a name that describes the power and scope of the new spectrum sharing technology. Just as the term software-defined network moved to the top of the Gartner Hype Cycle for networks, so too are new radio technology names, created for spectrum sharing of licensed and unlicensed spectrum, making their way up and down Hype Cycle curves. These names include Dynamic Management Access, Shared Access System, White Spaces, Cognitive Radios, Spectrum Sensing, and LSA/ASA.

The names used by the wireless industry for this new technology are confusing and changing. The first name used by the FCC to describe the new spectrum sharing technology was TV White Spaces. This name was confusing because it focused on the TV spectrum and the licensed vs. unlicensed struggle for 54mHz to 698mHz where the TV channels resided. The FCC commissioners also called it Super Wi-Fi because the TV spectrum propagates through walls and buildings well. White Spaces is another name referring to all unassigned and unused spectrum.

The FCC created in the sharing orders a method for spectrum sharing that is technically similar to SDN for routers; however, instead of software decoupled from but controlling the routes used by the physical layer network router, in spectrum sharing a software database (iConectiv, Google, Spectrum Bridge, or Microsoft) is decoupled from and controls the spectrum to be used by the physical layer radios, which are flexible and agile, changing spectrum as ordered by the database. The spectrum sharing method is now called SAS, or Spectrum Access System, by the FCC. The big data databases residing in the cloud control which slices of spectrum new agile radios could use in multiple dimensions at time, location, height, and power.

In 2013, the FCC proposed creating a new spectrum sharing band called the Citizens Broadband Service, from 3.5gHz spectrum now exclusively assigned for military radar and satellites. The FCC proposed that the database could assign tiered priorities of spectrum sharing for the database.

After the initial FCC order, a new spectrum sharing industry ecosystem took off. These groups included Dynamic Spectrum Alliance (Microsoft and Google are members) and White Spaces Alliance (Google, Microsoft, iConectiv, Spectrum Bridge). Technology standards organizations jumped in with the IETF standards group Protocol to Access White Space database, or PAWS. IEEE published 802.22 (2011) a wireless regional area network aimed at using cognitive radios with a database in the TV spectrum (54-790mHz), and 802.11af for wireless area local networks operation using the TV spectrum which is expected to be approved in 2014. 802.11af allows for up to four bonded channels creating 100mbps throughput and the ability to penetrate through concrete and brick walls.

There is a big struggle in wireless between unlicensed and licensed. The big data-controlled radio system has been primarily supported by the companies wanting more unlicensed spectrum. There is the familiar warning of a looming spectrum crunch. Mobile carriers assert that more licensed spectrum is needed for high-QoS mobile connections. However, Google, Microsoft, Free Press, New America, Public Knowledge, and the startup community (WhatsApp is a startup!) argue that the mobile providers may be just hoarding licensed spectrum for competitive purposes and not building out the necessary infrastructure to serve the new data demand.

The unlicensed camp argues that unlicensed spectrum like 2.4gHz Wi-Fi and Bluetooth has actually saved mobile carriers and is one of the principal reasons that many startups have been so successful and generated so much funding. For example, Nest uses unlicensed home 2.4gHz Wi-Fi to connect its thermostat to the smartphone. Mobile carriers have indeed begun embracing the benefits of Wi-Fi for offloading smartphone data. Consider the recent the Boingo-Verizon Wi-Fi offload deal and the Sprint-Kineto Wi-Fi voice handoff announcement.

It is clear that the new big data-controlled flexible spectrum radios will be using an advanced new technology that is in parallel to what SDN is to network routing.

It is clear that the new big data-controlled flexible spectrum radios will be using an advanced new technology that is in parallel to what SDN is to network routing. The power of the technology is that it will be used for all spectrum – licensed and unlicensed or a mix of both as LSA/ASA proposes. However, it is not clear what name describing the innovative big data, dynamic spectrum management of agile, flexible radios will head up as the winner on the technology Hype Cycle. IT

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

By Hunter Newby

Internet Consumers are Hostages to the Carriers

On March 5, I participated on a panel at the Telecom Exchange West in Denver to debate the topic of net neutrality. Joining me on the panel were Steve Davis, executive vice president or public policy and government relations at CenturyLink, and Dr. David Reed, interdisciplinary telecommunications faculty director at the University of Colorado. The panel was moderated by Jaymie Scotto Cutaia of JS&A. And it was, if I may say so, a lively and interesting discussion.

Given the recently announced Comcast-Netflix private peering agreement, the festivities began with talk around what is in fact net neutrality. To properly frame the discussion there are two threshold issues that need to be addressed. The first is the difference between consumers and businesses that could operate their own networks. The second is the difference between what network means and what Internet means. Network neutrality and Internet neutrality are two completely separate things just as Layer 2 is not Layer 3 in the OSI model.

Netflix is very much a consumer service that is delivered using IP (Layer 3) over the public Internet and, or in the case of the Comcast relationship, over a private, dedicated physical connection that has nothing to do with the Internet at all. On the subject of the consumer Internet service dimension I had this to say: "Internet consumers are hostages to the carriers and the service providers because they have no control over the quality of the service they receive and little, or no, choice in how they receive it. Service providers are saying this is the best Internet for you. Consumers can't build their own Internet. Consumers are hostages who are being told this is the quality you get and pay for."

My quote caused quite a stir during and after the event. Whether or not anyone wants to openly admit it, beyond deep packet inspection, beyond the blocking and shaping of certain packets, and well past the sheer lack of fiber and associated lit capacity in certain areas that causes an unavoidable and inevitable congestion situation there exists the truth – there are multiple, present realities. The only constant is change and from one location to another everything changes in terms of physical access to the Internet. The bottom line is that it all comes down to control of access to the Internet – and not the Internet itself. Layers 1 and 2 and the IP that flows over those layers vs. public Layer 3.

After I made my "hostage" remark, Dr. Reed said: "Comcast-Netflix is not a net neutrality issue – it is not about the Internet." I could not agree more.

Davis commented that, "describing consumers as hostages is nonsense" and the notion that people can only buy what is being sold "can be applied to any industry or walk of life, but that doesn't make them hostages."

I suppose consumers do have a choice, a Henry Ford kind of choice. You can have any color you like as so long as it is black. Consumers could also choose not to try and connect to the Internet. It is not really that important anyway, right?

No doubt this is a tricky issue for consumers. For certain network operators that know their way around, though, this net neutrality thing does not even apply. Those that understand and have access to a physical path that can be leased or built to get to a neutral peering point or meet-me room can bypass any service provider standing in their way.

Network neutrality and Internet neutrality are two completely separate things just as Layer 2 is not Layer 3 in the OSI model.

End user consumers, particularly those on mobile devices, simply cannot do that. They are trapped and subjected to whatever their access provider decides for them. The ability to charge a certain rate for a service and a premium for a service that actually works all comes down to the lack of viable alternatives. Infrastructure costs real money, and it is difficult to earn an attractive return on investment within a near-term time frame. Cogent was reminded of this when Comcast made it clear to Netflix who controls the access to the consumer. That is why Netflix now pays and connects to Comcast directly – with no Internet service provider in between. IT

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

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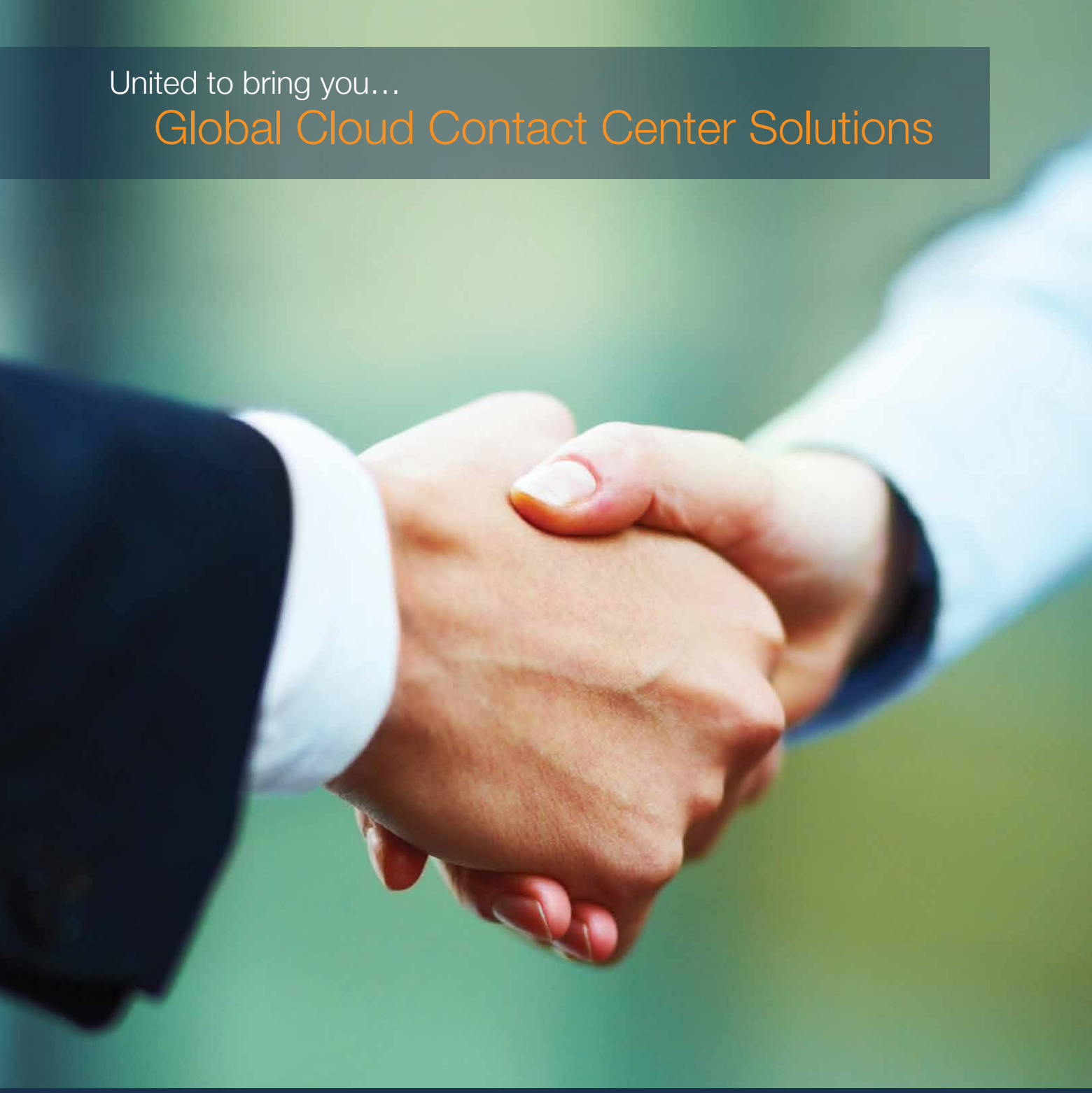

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By Jon Arnold

Personal Video and UC, Part 1 – What are You Afraid Of?

I recently had a state-of-the-nation chat with Simon Dudley, video evangelist at LifeSize. We covered a lot of ground, with a key theme being the difficulty of businesses in seeing the value of video. With room-based systems, there is often a business case built around travel savings. Fair enough, but the appetite for six-figure immersive systems that create the as-if-you-were-there feeling is fading. The investment is just too high, and the quality of lower cost alternatives is proving to be good enough for most needs.

Overall adoption, however, isn't where video players would like it to be. Whether you're looking at standalone services or video applications integrated with a UC platform, the basic experience just isn't user-friendly enough to be the mode of choice. The underlying technology really isn't the problem – there are lots of workarounds to make video work on all manners of endpoints.

During our chat, Simon rightly noted that the real problem is that people – and businesses – don't fully grasp the power of video. The same can be said for earlier technologies such as cell phones and broadband. These both may be considered oxygen today, but when they first emerged, nobody was really sure if there was lasting demand. Eventually, use cases were discovered that caused adoption to explode, but a few iterations were necessary along the way.

The killer app mobile device hasn't been invented yet to make video truly king, but I have no doubt it's in the works somewhere.

Remember when car-mounted cellular phones were seen as a major step forward? Both Simon and I are of the view that personal video is at a similar point in time. The technology is pretty good, but hasn't quite yet become user-friendly or practical enough for mass adoption. To get there, you really need to know two things: why you would use a new technology as well as how.

The problem with personal video in a business environment is that both are lacking. For everyday, one-to-one communication, the why is generally pretty weak. When talking to co-workers, video adds little to what is normally done by phone. If you really need to make an impression with someone – such as your boss or a customer – you want a better quality experience, and for that, you'll likely resort to the conference room for an HD video session.

The same can be said for the how of doing personal video. Most people think of video as being complex, expensive, and uneven in terms of the user experience. This is largely a legacy mindset, and one that gets stood on its head when you look at the current state of personal video. Whatever your perception is of the level of video user friendliness, it's never been more accessible or affordable. At the same time, the workforce is generally getting younger, and with that comes a more tech-savvy employee, one for whom video is intuitive and practically native.

Mobility will be a big part of personal video, but not likely on smartphones. They can't really get much bigger, and their form factor ensures the screen size will never be big enough to be the go-to device for video. Tablets, however, are far better suited for video – and were always built with this in mind – as are phablets, hybrid products that are geared more for video than voice. The killer app mobile device hasn't been invented yet to make video truly king, but I have no doubt it's in the works somewhere.

PC shipments may be in terminal decline, but they'll be with us for years to come. Desktop video is already well established, but clearly, the momentum is swinging in favor of mobile devices in terms of the screen of choice. Whether using a PC or a mobile device, the how for personal video is really no longer a barrier to adoption, so we have to look elsewhere for answers.

The second part of this equation – the why – is just as important, and that will be explored in Part 2 for my next column. As a teaser, I will talk about the recent acquisition of Viber in this space, which I believe provides a big clue as to why video is going get a whole lot more popular. This also speaks to the title of this post; if the technology is ready here and now, what are you afraid of? What's holding you back with video? I think I know – and Simon does too, and to find out, we'll see you here next time. IT

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

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By Steven Johnson

What is Necessary for SIP Trunking: The Service Provider

A traditional voice telephony service provider typically offers one or more T1/E1 trunks to the enterprise for fulfilling its needs for voice communication outside its own premises. The service provider is then connected to what is sometimes referred to as the world's biggest machine: the worldwide PSTN, or public switched telephone network. Connectivity between the networks of the different service providers that constitute this machine is achieved by bilateral interconnect agreements between the various service providers. There are also wholesale service providers that aggregate the traffic from several local service providers and make the interconnect agreements for all of them collectively.

The SIP trunk offering is just another way of connecting the enterprise subscriber to the network. The interconnect and wholesale aspects remain the same. In a SIP trunk the traditional T1/E1 interface (trunk) is replaced by an Internet connection with the SIP protocol used for signaling. Nowadays, most enterprises already have such a connection to be used for their data traffic. As a SIP trunk is IP-based and virtual, it is much easier to manage remotely and therefore cheaper for the service provider to maintain than the traditional connections. It also typically does not require the service provider to deliver and take responsibility for any additional customer premises-based equipment. That, too, adds to the simplicity and cost-effectiveness of SIP trunks as a means of delivering voice communications.

Different types of SIP trunking service providers

Long gone are the days when there was only one carrier available to offer telephony services. Among the newer entrants to the voice market offering SIP trunking and other VoIP services are both facilities-based and facilities-less providers. Generally there are only a few major companies that have their own network infrastructure while others are reselling traffic that will travel on another party's (be it a new IP wholesaler or an incumbent) network.

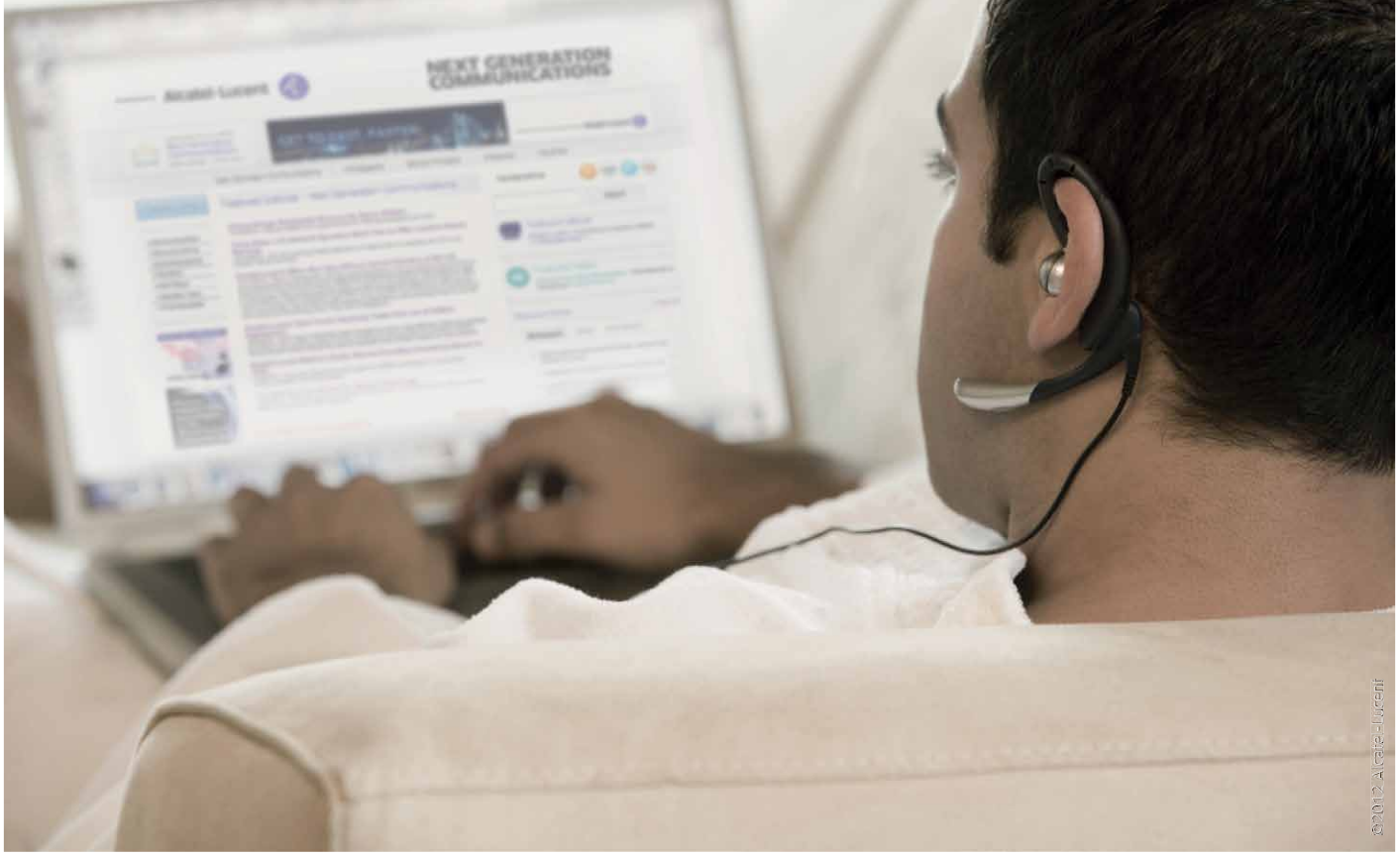
PSTN connectivity

A SIP trunking service provider aggregates the traffic from many enterprise customers. The traffic passed to the PSTN is of much larger volume than the traffic from any individual enterprise. This means that the SIP trunking service provider can acquire the call minutes from the PSTN service providers at a lower rate than the individual enterprise. The network charge for the IP part of the call is typically not traffic-dependent so there are significant gains to be made here.

Local breakout

The use of the IP networks for part of the route of the call means that a service provider with several points of presence around the world, or that has agreements with other service providers to exchange traffic, can allow the call to stay on the IP network for as long as possible. The call is transferred to the PSTN at the point of presence closest to the destination of the call. This process, sometimes referred to as local breakout, allows the service provider to make maximum use of local PSTN call rates rather than paying international or long-distance charges. This contributes to making SIP trunking a very cost-effective solution for the enterprise as well as for the SIP trunking service provider. IT

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



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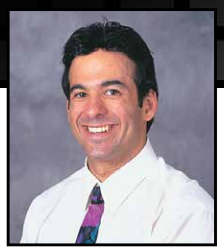


Continuity Planning 101 – A Continuing Educational Series

All the World's a Stage

By Rich Tehrani & Max Schroeder

The above headline is one of the Bard of Avon's most famous quotes and follows on a prior phase in the play Merchant of Venice, "a stage where every man must play his part". Certainly today's cloud technologies with people and organizations interacting constantly make these analogies even more relevant today than 400 years ago.

The theatrical theme also presents a good analogy for business continuity implementations. Prior to the first performance of a play the cast stages a dress rehearsal in full costume. This is critical as it can reveal unanticipated problems. For example, a period piece like an old-fashioned hoop skirt could restrict the actress' movement on stage and create havoc. The same holds for a BC plan. Although it may appear fully operational, a full dress rehearsal should be staged to make sure all of the anomalies are eliminated.

This is particularly true in today's socialized environment where social media and a variety of mobile devices are incorporated into many facets of most operations. In fact, this environment in itself is a primary security risk as cybercriminals are leveraging the trusting behavior of people on these sites to gain access to valuable data or plant malicious bots or botnets.

A vital function of the dress rehearsal is to assess each employee's device and determine its security profile. In other words, how secure is the device and how secure are the backup devices and failover connectivity options? During the many weather-related interruptions in the Northeast over the past 3 years, several Internet and mobile phone services suffered severe problems. Many people were forced to use their personal devices or services to regain connectivity at alternate locations. Also, some companies require that home office employees provide their own equipment (BYOD). This can introduce another source of cyber contagion even without a business interruption unless the devices are monitored closely on a regular basis.

Schedule your dress rehearsal today and repeat the process regularly to avoid your organization's reality being cataloged under the label disaster tragedies. IT

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


NIST Releases Cybersecurity Framework

By William B. Wilhelm and Jeffrey R. Strenkowski

On Feb. 10, 2014, the National Institute of Standards and Technology issued the "Framework for Improving Critical Infrastructure Cybersecurity." The framework follows President Obama's Executive Order 13636, issued in February 2013, directing NIST to create a set of voluntary industry standards and best practices to help organizations manage cybersecurity risks.

The NIST framework focuses on using business drivers to guide cybersecurity activities and considering cybersecurity risks as part of the organization's risk management processes. It instructs organizations on how to assess their current level of cybersecurity, set goals for improving cybersecurity, and creates a plan for implementing those goals. NIST intends to update the framework to keep pace with changes in technology.

The framework is focused on critical infrastructure, which includes utilities, financial services, telecommunications, chemicals, food and agriculture, and health care. Although businesses are not required to adopt the NIST framework, the framework will be used as a roadmap for future cybersecurity-related undertakings in the United States, even in non-critical infrastructure areas. Federal and private incentives (cybersecurity insurance, grants, liability limitations, etc.) will likely encourage industry participation in the NIST framework. Implementation of NIST standards may also affect business-to-business relationships, court liability in the event of future breaches, and may be used as the basis for future legislation. Businesses that participate in the framework may therefore have an opportunity to shape the guidelines and determine an appropriate standard before it becomes mandated by law.

As providers of advanced communications services, VoIP providers should take particular note of the cybersecurity framework and ensure that they have considered potential cyber threats to their networks, customers and business operations; have taken steps to mitigate those threats; and have a plan for dealing with successful attacks. IT

William B. Wilhelm is a partner and Jeffrey R. Strenkowski is counsel at the global law firm of Bingham McCutchen LLP (www.bingham.com).

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Multi-Layered Security in the Mobile Network

By Frank Yue

The issue of security in the network is one of the most important aspects to address in the new mobile environment. Service providers are delivering VoLTE services to replace the legacy circuit-switched voice calls. They need to ensure that all of the IP network-based services required for VoLTE calls are protected.

LTE networks are based on IP, and it is leaving circuit-switched voice calls behind. Upgrading the technology ensures a more flexible and extensible network infrastructure, but it also means that service providers need to address the new and little understood security concerns that come with this new architecture.

Multiple threats for individual calls

The SIP and IMS infrastructure are critical to establishing a call session for the customer. SIP messages are generated from a consumer device and propagated directly into the control plane infrastructure. This creates the potential for malicious SIP attacks into the service provider network. It is also possible that a poorly written SIP application could create malformed data or unwittingly generate a DDoS attack. The SBC and IMS components such as the P-CSCF and S-CSCF must be protected against these threats.

All of these services within the communications path require DNS to connect the call session from one function to the next. But DNS is a vulnerable Internet service which can be disrupted in various ways.

Lately, there has been an increase in the number of DDoS amplification attacks. This type of attack occurs when an attacker sends a small request to a server that creates a fairly large response. When the request is sent, the attacker changes the source IP address to the IP address of the intended victim. Because DNS relies on stateless UDP and is an open and trusting protocol, it is possible to amplify the bandwidth of the attack from the original source over 40 times through the DNS server by the time it reaches the destination. This floods the victim with an overwhelming amount of data that overloads their network connections.

Service providers need to enhance their DNS infrastructures to handle the increased load of DNS requests and institute rules to protect the infrastructure from becoming disabled. If DNS is not working, none of the services within the LTE network will work.

Once a call session is established, the data path between the packet gateway and the Internet needs to be protected. Service providers need to protect their networks and their subscribers from threats that originate from the Internet. They need S/Gi firewalls to protect the data path from the typical types of Internet threats as well as those that target the service provider infrastructure and their customers' devices.

Security everywhere

Security policies need to be installed at appropriate control points in the communications path to identify and filter the threats. Security procedures should be applied at every part of the network where it makes sense.

In the control plane, firewalls must be placed between the subscribers and the key internal network functions such as the SBC, x-CSCF, and SIP AS. These services also need to have content- and session-aware security policies that can discern the good calls from the malicious attacks that take advantage of the open nature of the SIP and Diameter call signaling protocols.

This also means that firewalls must be established at the perimeter of the data network. S/Gi firewalls in the data path adjacent to the Internet protect the network and subscribers from high speed and high volume DDoS attacks. They also protect against TCP sweep attacks that force devices on the network to wake up and create a storm of signaling messages. Other security functions need to be implemented to ensure that RTP voice communications are valid, along with the RTSP protocol that delivers call session information to the service provider for accounting and billing purposes.

Security is not a cherry cordial

Years ago, a colleague told me that security is like a chocolate covered cherry. There is a hard outer shell, which is the security perimeter protecting the network. Once an attacker is able to penetrate this hard outer coating, they have access to the soft and exposed cherry and all the assets that it contains.

With the introduction of advanced security threats and attacks that target specific applications and protocols, this analogy no longer holds true. It is essential for the service provider – and really, all organizations responsible for data networks – to implement a multi-layered security infrastructure that can identify and mitigate the threats at every control point in the network. As service providers continue to build their LTE networks and implement VoLTE call capabilities, they will need to determine where it makes logical and financial sense to incorporate security policies within all of the infrastructure components. IT

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

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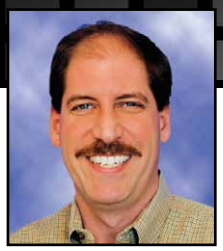

By Jeff Hudgins

Lifecycle Management Considerations for Enterprise IT (Part 2)

In part 1 of Lifecycle Management considerations, we discussed the challenges of managing aging IT applications and hardware in the enterprise. In part 2 we look at ways to avoid common lifecycle management nightmares from the very start. Three common mistakes that enterprise IT managers make when it comes to lifecycle planning are gaps in design, content, and end-of-life management.

When it comes to designing for lifecycle management, the belief is that selecting a hardware solution that will have a longer lifecycle is expensive to design in. The reality is that today's IT solutions that come as embedded appliances with longer lifecycles are no more expensive than general use compute platforms. And the savings, long term, far outweigh any minor cost savings at the early stages of the design. Leveraging a longer life embedded design allows for a smoother transition to a new IT solution when the business is ready and not when the vendor decides it's time to change.

A second big mistake is focusing just on the IT hardware and software itself while in production. Content management areas like data and processes are just as critical. When a new solution is put into service in the IT enterprise, poor lifecycle management of the data that is stored as well as the methods to manage that data once it's in full production will increase operational cost.

Last is the final resting place for the legacy IT infrastructure. Nobody enjoys planning for that time when the old solution needs to be decommissioned. But proper planning and execution of this phase of the lifecycle can limit business interruption and avoid costly mistakes in data loss and continuity.

So what's the final score? The lifecycle management work done during the design and launch phases will provide increased bandwidth to plan the end-of-life phase. This strategy will reduce risk and increase revenue. IT

Jeff Hudgins is vice president of marketing at Unicom Engineering (www.unicomengineering.com).

By Michael Stanford

Security and Usability

Why can't I see my password when I type it in on my phone? My phone is a few inches from my face and nobody is looking over my shoulder. It is extremely easy to hit a wrong letter (or miss a letter, or tap twice by mistake) on a tiny touch screen. The gain in security from hiding the typed password is far outweighed by the loss in usability.

Mobile user interfaces are still loaded with user interface howlers like this. Another is when I am forced to type in without spaces a sixteen-digit number. The human mind is incapable of registering sixteen digits at a glance, so your eyes have to go back and forth from the card to the screen several times as you type the number. So why don't apps and web forms let you type in a credit card number with spaces, the way it is printed on the card? Presumably it started decades ago with one lazy COBOL programmer who couldn't be bothered to add one line of code to strip spaces, and was never questioned since, resulting in man-centuries of cumulative wasted time for users.

Usability and security must often trade off against each other. For example, having to type a password is a massive blow to usability, but some kind of authentication is a foundation of security. People understand this trade-off, and are willing – even eager – to put up with inconveniences in the interest of security. But we are daily faced with pointless inconveniences imposed either to give a false impression of improved security, or because a programmer was too lazy to do the job right, or both.

If you happen to find yourself involved in the design of a user interface, please do the world a favor and refuse to take security as a justification for user interface burdens without a clear and compelling explanation of how real security (as opposed to a feel-good false impression of security) is improved, and weigh this improvement against the increased burden in usability. IT

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

By Phil Edholm

The Webification of Communications

This is a new column that will track developments in WebRTC, but more importantly the webification of communications. WebRTC is a new communications standard and implementation, started by Google, that is picking up huge momentum in the industry.

WebRTC takes the components of a typical VoIP media engine into a browser or any other peer endpoint with a simple API that a web server can control. The base technology has been open sourced by Google and is based on the company's purchase of Global IP Solutions, a company that provided the same technology to most of the large VoIP companies (Avaya, Cisco, Nortel, etc.). The thing that is really exciting about WebRTC is that, in addition to enabling a website to enabling two peer endpoints to begin a rich media session (voice, video, data, etc.) with a relatively simple set of instructions, WebRTC is the initial technology showing the change coming in the industry, the webification of communications.

With WebRTC any website can host a communications event for two peers. While today those peers involve typical browser devices running Chrome, Firefox or Opera, the future could see this happen on virtually any devices. A typical peer-to-peer session involves both peer nodes of the same server. What is interesting is to contrast this with a trapezoid model enabled by the WebRTC standard in which each peer is represented by a separate server and the servers negotiate between them on behalf of the peers.

Today, virtually all communications requires that I have a server that represents me outbound when I want to communicate with someone else. While we often call these service providers or Peas, the function is the same. Not only do they represent me for someone trying to reach me, they also represent me when I want to reach out. Contrast this to the web of information where I am not represented when I go to a website; I go directly to that site and have a one-on-one event interaction with that site. The beauty of the web that was created by the CERN team and Tim Berners-Lee was that it enables us to find the resource where we need information and go directly there for a connection. Google (or Bing or Yahoo or any other search engine) gives me a path to the location of the information I seek, but Google does not take me there, it sends me there and is not part of the furthered interactions.

The webification of communications is not a single technology, but rather a transformation of the basics of communications. Instead of having a single server that manages all of my communications, the webification process will free me to interact directly with millions of web servers to manage a succession of independent communications events, each tuned to the specific needs and requirements of the event, not an arbitrary vendor paradigm. Just as we all have hundreds of different web information experiences monthly, each web communications experience can be defined by the suite hosting the event.

For existing service providers, moving beyond a model of outbound representation to new models of better inbound services and new capabilities like personal agents, adaptive intelligence availability, and other services will be critical. For enterprise vendors, new technologies like representation portals and new customer interaction services will define the new horizons. For both end users and companies, understanding and using this transformation will be critical as well.

In this column we will try to move beyond the technology to how the webification of communications is emerging, illustrating the new applications and capabilities that are coming into the market, and the technologists who are creating the innovations that will fuel the transformation. We will identify the companies that are driving the transformation: the service providers, the enterprise technology vendors, and new entrants creating disruptive change. Finally, we will talk to the individuals who are driving the change through their leadership and innovation. As with all disruptive transformations, the webification of communications promises to be a bumpy ride, with peaks of transformed value and user experience as well as valleys of frustration and challenge, but as with all great changes, the ride will be interesting and the results will astound us all. I look forward to having you along for the ride. IT

The webification process will free me to interact directly with millions of web servers to manage a succession of independent communications events, each tuned to the specific needs and requirements of the event.

Phil Edholm is the president and founder of PKE Consulting LLC (www.pkeconsulting.com) and works with INTERNET TELEPHONY parent company TMC to stage the WebRTC Conference & Expo, which will be held next time from June 17 to 19 in Atlanta.

By Paula Bernier

What Time is It?

The Future of Legacy Networks, Regulation & Competition

Copper, TDM, and wireline networks in general – all three remain important parts of our public networks today. At the same time, all three are vestiges of the past that continue to be the source of decommissioning discussions.

But is copper really going the way of the dinosaur? What's happening with the TDM-to-IP transition? And, in the age of the smartphone and the tablet, who needs boring old wireline networks anyway?

More importantly, what do the changes in the networking landscape that are prompting some of the changes and debates relative to copper, fiber, over-the-top services, TDM, wireless, and wireline mean for communications providers, customers, and competition?

Answers to at least some of these questions could come as soon as later this year, which is when the Federal Communications Commission is expected to render decisions related to the pending IP interconnection and special interconnection proceedings, said Chip Pickering, CEO of the competitive carrier association COMPTEL. That should clarify, or establish, IP interconnection rights and obligations, special access last mile reform, and the plan to move the industry to IP as quickly as possible, he said. Any FCC rulings on the above topics are likely to be just the tip of the iceberg in terms of new communications policy, however, added Pickering.

The next big legal framework that will govern communications technology is likely to be established over the next two to four years, Pickering said, as there's the possibility of significant new legislation from Congress on this when it comes back in 2016.

So, two decades after the Telecom Act of 1996 went into effect, it appears that Congress will be back at it again, working to address the rules of the road on our rapidly changing information superhighway.

A Series of Tubes

One issue that has been bandied about the industry in recent months and years has been about what will become of the nation's copper communications infrastructure, and how that will affect competitive carriers' ability to reach customers in an affordable way.

Debates about the end of the copper age have been going on for some time, but there have been a lot of impressive advancements over the years to keep copper in the loop, so to speak. New advancements in bonding and vectoring, along with the fact that this transport medium is very widely available today, have kept copper relevant even in today's world of big broadband.

Just look at how copper technology continues to advance. ADSL2+ with bonding offers 12 to 25mbps bandwidth at distances of 7,000 to 13,000 feet. VDSL2 delivers 25 to 50mbps at lengths of up to 2,000 to 3,000 feet. VDSL2 with vectoring, and Bonded VDSL2, promise 50 to 100mbps, and 100 to 200mbps, respectively, at that same reach. And G.Fast with vectoring, which will be in trials beginning in the first quarter of 2015, promises to deliver 200 to 1,000mbps at distances of 100 to 500 feet.

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There's no doubt that fiber is the best choice for customers that have higher bandwidth requirements, but the ubiquity of the copper network makes it a pretty darned good platform on which to deliver most communications services, said Daniel J. McCarthy, president and COO of Frontier Communications, a wireline provider that uses a mix of fiber-to-the-home and hybrid fiber/copper networks to bring services to a range of business and residential customers in 27 states.

Copper also remains an important medium because of its designation in terms of communications regulation. There are regulations specific to copper that enable competitive service providers to access (at rates deemed affordable) the copper infrastructure of incumbent players, while rules around incumbents giving competitors access to their fiber networks are less clear, noted Pickering, who spoke with INTERNET TELEPHONY in March.

Competitive carriers fear that incumbents will install fiber, decommission copper, and leave competitive carriers – many of which rely on wholesale relationships with the ILECs to reach customers – without a method to do so. One ruling that stoked this concern, Pickering noted, was the adoption of Verizon's so-called new wires, new rules proposal, which relieved the telco of having to grant competitors access to its fiber.

AT&T Services' Gary Ludgood, senior vice president of global network field operations, said his company doesn't have a massive retirement plan, but added that as it deploys fiber it doesn't want to have to maintain other assets for which there is less demand or that are sitting idle.

The whole discussion about copper and fiber relative to communications regulation really misses the point of what needs to be done from a regulatory standpoint, however, according to Pickering. Rather than setting rules based on the specific technology, he suggested, legislators and regulators should ensure rules are in place to allow for competition in the marketplace regardless of whether the underlying infrastructure involves copper, fiber, wireless, TDM, IP, or whatever. Taking a technology-neutral stance, he said, will "keep the industry from having this fight every 5 years" as technologies change.

Perhaps. But for an industry that's always struggled with changing its mindset from a technology-focused to a services-oriented one, that involves a significant adjustment. That's not to mention that incumbents frequently view the move to new technologies as an opportunity to break free of old rules.

The Death of the PSTN

A separate piece of the old to new debate revolves around the move from TDM to IP technology. This transition is often referred to with the provocative phrase: the death of the PSTN.

Just how quickly the IP transition is happening, however, varies depending upon whom you talk to.

Sam Kline, senior vice president of corporate strategy at Granite Telecommunications, said his company still adds about 1,000 lines of POTS each day – so the PSTN clearly ain't dead yet.

Bill Cheek, president of the wholesale markets group at incumbent telco CenturyLink, added that the transition to IP is not going to occur quickly, as we're still seeing a good amount of hybrid IP/TDM switch deployments as opposed to IP-only ones. While IP is deployed in national networks, there is not a ubiquitous deployment of IP in local markets, he added. In fact, the use of VoIP in local markets is primarily driven by cable and wireless providers, he commented, adding that the transition to IP is not going to occur quickly for carriers in rural markets.

However, he said that the fact that TDM-only equipment is rapidly becoming obsolete and that large carriers with wireless affiliates can transition faster to all-IP networks through the use of 4G wireless technology, are most certainly driving the IP transition forward.

AT&T is also trying to push things forward on this front. In fact, the giant telco wants to sunset its TDM facilities by 2019.

In an effort to make that happen, AT&T asked the FCC – which on Jan. 30 invited industry players to make all-IP network experiment

proposals – to allow it to trial IP technology in select parts of Alabama and Florida.

"There's just no way that multiple networks can be maintained. There's just no way," said Ludgood, who gave a presentation and was part of a panel of service providers at the recent COMPTEL PLUS. "How many lines do you have to lose on a switch before you don't have to maintain the switch? And the answer today is: All of them."

In a Jan. 30 blog Jim Cicconi, AT&T's senior executive vice president of external and legislative affairs, wrote: "The team who authored the National Broadband Plan and the TAC both recognized that creating a path for incumbent providers to retire legacy POTS technology was a necessary step towards achieving universal broadband connectivity in the United States. In particular, both understood that the cost of maintaining the legacy architecture, with its rapidly declining subscriber base, was unsustainable for any company, and was pulling significant dollars away from broadband investment. That decline has only accelerated over the past fifteen months – AT&T's consumer POTS access lines decreased from 15.7 to 12.4 million lines between 2012 and 2013, proving the truth of the FCC's conclusions in stark numbers."

Details about AT&T's proposed narrow trials are thin, said Pickering, and provide no guidance on how to do IP interconnection. However, AT&T's Ludgood noted this trial is all about figuring out what works, and he invited the COMPTEL audience to get involved. COMPTEL has been encouraged by FCC Chairman Tom Wheeler to both work with AT&T and propose its own trials, which Pickering said he's discussing with the group's members as well as with incumbent telcos.

Meanwhile, Cheek of CenturyLink at COMPTEL PLUS shared his company's interconnection plans relative to the IP transition. CenturyLink's plan transitions third-party point of interconnection behind a national convergence switch allowing third-party interconnection via IP or TDM at the state level; the company intends to implement a secondary convergence platform to displace/retire legacy national Class 4 circuit switches and establish parallel interconnection, allowing for diverse TDM/IP third-party interconnection to the PSTN; and CenturyLink Voice Infrastructure supports all manner of interconnection for termination to the PSTN and allows for next-gen voice services, while maintaining support of legacy services for customers still requiring TDM.

The Wireless Way

Whether TDM or IP, ILECs in the 37 states that CenturyLink serves have lost more than 70 percent of the residential lines since 2000, said Cheek, pointing to the new trend toward wireless communications. More than one in three homes, he added, are wireless only. Cheek also pointed out that Ericsson reported there were 5 billion connected people in 2010 and that by 2020 there are estimated to be 50 billion devices that will be part of the growing Internet of Things.

Indeed, it's no secret that the massive uptake of smartphones and tablets – and the rise of the Internet of Things and M2M – are changing the lives of both end users and of service providers.

In 2009, AT&T's Ludgood said, 45 percent of the company's revenue came from wireless, 30 percent came from voice and related services, and 25 percent came from wireless data and managed services. Last year, 54 percent came from wireless, 29 percent from wireless data and managed services, and just 17 percent from voice and other services, he said, adding that AT&T has seen 50,000 percent wireless data growth since 2007.

What's Next?

Given his long history at cellular industry association CTIA, and the obvious and growing importance of wireless, wireless will certainly be top of mind for the FCC's new chairman. But, again, wireless is a just a piece part of what's happening in communications, and what's happening in communications is always changing.

Driving this potential revisiting of the Telecom Act, according to Pickering, is the new leadership at the FCC and a realization that the world has changed significantly since 1996 and that the marketplace is very different, so current regulation no longer reflects the reality of what's happening now.

As Wheeler wrote in his Nov. 19 FCC blog: "Our communications networks are changing – and fast. What some call the IP transition is really a series of transitions; a multi-faceted revolution that advances as the packets of IP-based communication replace the digital stream of bits and analog frequency waves. The impacts on networks have already begun and will be profound. Fiber networks are expanding. Bonding technology is showing interesting possibilities with regard to the nation's traditional copper infrastructure. Communications protocols are moving from circuit-switched time-division multiplexing to IP. And wireless voice and data services are increasingly prevalent, empowering consumers to connect at the place and time of their choosing.


Tom Wheeler


Gary Ludgood


Chip Pickering

"This is what I have called the Fourth Network Revolution, and it is a good thing," Wheeler wrote. "History has shown that new networks catalyze innovation, investment, ideas, and ingenuity. Their spillover effects can transform society – think of the creation of industrial organizations and the standardized time zones that followed in the wake of the railroad and telegraph.

"But the future of networks can be hard to see, especially in moments of great change. When Alexander Graham Bell offered Western Union all rights to his telephone patents in 1876, the response was a curt dismissal. A Western Union memorandum concluded that "[t]his 'telephone' has too many shortcomings to be seriously considered as a means of communication."

"The way forward," Wheeler concluded, "is to encourage technological change while preserving the attributes of network services that customers have come to expect – that set of values we have begun to call the Network Compact." IT

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By Tom Keating

SmartBox by PanTerra Networks

A Simple, Secure Cloud File Sharing Solution with Built-in Unified Communications Features

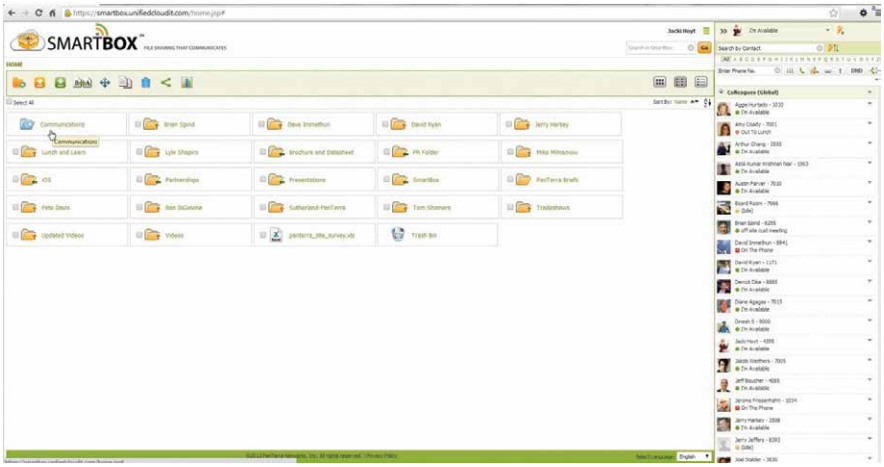
PanTerra Networks is probably the most innovative unified communications and file sharing cloud-based service provider you've never heard of, until now. TMC Labs was somewhat familiar with PanTerra Networks, but even we were surprised by the sheer number of UC and file sharing features built into its WorldSmart product suite when we took it for a test drive. WorldSmart's unified cloud services deliver just about every form of file sharing, communications and collaboration – voice, video call, IM, e-mail, desktop sharing and fax. The WorldSmart suite includes two major components, CloudUC and the just launched (January 2014) SmartBox, which PanTerra calls, "the world's first file sharing service that communicates."

The entire WorldSmart suite is delivered from the cloud through a 100 percent browser-based UC client, leveraging HTML5 (previously Java) and eliminating any premises-deployed hardware or software. TMC Labs tested the entire WorldSmart suite, but the focus of our review is the recently launched SmartBox. SmartBox enables enterprise customers to securely share, sync and store files while seamlessly communicating and collaborating with users. In its most basic form, SmartBox is like Skype meets Box/Dropbox, but with many more enterprise-level features. In the more advanced version, SmartBox can replace an enterprise's existing communications infrastructure (PBX, conferencing, web meeting, etc.) while also providing cloud-based file sharing services. Targeting mid-market enterprises with 50 to 2,000 users, they built most of the technology and certainly the core technology themselves with thousands of customers currently running on their solutions.

The big differentiator between SmartBox and the other cloud-based file sharing players in the market is the integrated communications capabilities, including VoIP, video calls, voicemail, faxes, IMs, and call recordings, creating what TMC Labs will call UC+ because it's much more than traditional UC. If, for instance, you share a document with John, Sally, and Sue, when you view this document you can instantly launch a group IM session, desktop share, and voice or videoconference with these three users. Essentially, all of your files are communications context-sensitive, allowing you to launch directly into the communications channel of your choice with the relevant parties. No more looking up e-mail addresses, phone numbers, or sending out a calendar invite to join a hosted web meeting session. Company colleagues and imported contacts are visible in a side panel with real-time presence. You already have the pertinent users listed and can have an ad-hoc meeting instantly. SmartBox combines file sharing, communicating, and collaborating all in a single solution, which is a huge productivity enhancer and helps reduce TCO.

SmartBox combines file sharing, communicating, and collaborating all in a single solution, which is a huge productivity enhancer and helps reduce TCO.

SmartBox comes in two flavors – SmartBox Guest and SmartBox Enterprise. You would think the free Guest version would be fairly limited, but surprisingly it comes with a huge set of features including 2GB of storage, simple and secure file sharing, multiple share privileges, IM conference rooms, HD video calls, HD videoconferences, as well as mobile applications for both Apple iOS and Android devices. It also includes the softphone, allowing you to make calls, transfer, conference, record, and listen to voicemail. Both versions also feature full presence status of WorldSmart users, such as when they are on the phone, in meetings, away from their desk or idle.



Main interface for communicating with contacts, plus uploading, downloading, & sharing

All calls to other WorldSmart users are free from both SmartBox Guest and Enterprise, but if you need outbound calling to PSTN numbers you'll need one of PanTerra Networks' calling plans. Additional communications services such as digital fax integration, DID numbers, and call center queues can also be added to any seat.

Share permissions for both SmartBox Guest and Enterprise include owner, co-owner, editor and viewer for files and folders. One important capability is that you can share files and folders with non-SmartBox users using the same share interface. You simply enter their e-mail addresses and they are invited via e-mail to register for a free SmartBox Guest account. PanTerra Networks tried to make it as frictionless as possible, so users who do not wish to register for a SmartBox Guest can still download the file, but they won't be able to modify and re-upload it. Once content is shared with a user or group, it automatically shows each individual's real-time presence and notifies you when a user downloads, views or modifies the file. This can be a huge advantage to sales teams that send out proposals since they'll know when a proposal has been viewed and can follow-up with a web-based VoIP call, IM, video call, invitation to an ad hoc web meeting, etc. One of the main advantages to SmartBox is its ability to synchronize your files across multiple devices – laptops, tablets, mobile phones, etc. If you choose a file you want to have for offline viewing, the platform will automatically download it in the background and keep it synchronized. Currently, SmartBox downloads the entire file in the background and doesn't do any byte-level delta changes, which TMC Labs would like to see in a future release to improve performance and lessen bandwidth utilization.

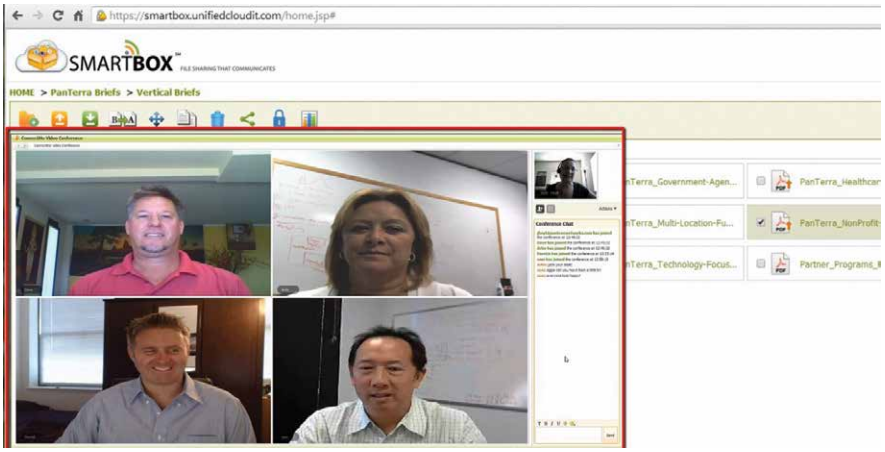
Another nice feature is its Outlook plugin, which allows you to send attached files from within an Outlook composed e-mail through SmartBox instead of sending the file itself. The file is uploaded automatically into your SmartBox, and only a link to the file is sent in the e-mail. This eliminates bounce backs when the recipient's e-mail won't accept large files and gives you much more control over the file. For example, you can update the file after sending the e-mail, and the recipient will automatically get the updated version. It also allows you to import all your Outlook contacts into SmartBox.

Each SmartBox Guest user gets 2 gigabytes, while SmartBox Enterprise users have access to unlimited storage. It has quota management and reporting built-in. It supports subfolder sharing with permission levels that can be completely different from its parent. This is a very useful feature. So, for example, you can share a folder called HR with lots of subfolders that all executives have access to. Then you can change the permissions for a single subfolder, let's say Compensation, and grant access to only the CEO and CFO. The ability to have different permissions for subfolders is something that Box and Dropbox don't support. This allows companies to organize folders and permission levels the way people think and not have to resort to workarounds that often result in accidental disclosure/access to employees that shouldn't view certain data. The platform also lets you view at a glance how things are shared visually. You can see what's been shared in, what's been shared out, what has a custom permission share, a default share (inherited from parent), what files are locked/unlocked, and what files are synced to any device.

Currently, it has four permissions (owner, co-owner, editor, viewer), plus a fifth permission (previewer) coming soon that will only allow you to preview the file in the browser and won't let you download it. The owner and co-owner share permission levels allow each to assign shares, take away shares, and of course the co-owner can take away all share level access except for the owner share. Editors can't do any of that, but they do have the ability to update/delete/modify subfolder content within the shared folder.

Separate Work & Personal Sync

The big cloud storage providers synchronize all your files to all your devices, whether you want it to or not. So for instance, if you install Dropbox on your mobile phone, tablet, work PC, and home PC, it's going to sync your personal and work files to all the devices. The risks are self-evident. SmartBox on the other hand lets you independently sync whichever folders you choose to whichever devices you choose. For instance, you could sync your Home folder only to your home computer, but configure your Work folder to sync to your work desktop PC, your corporate tablet, and your mobile phone.



Multi-party videoconference

Security

SmartBox is integrated into PanTerra Network's administration portal, which provides authentication of all devices accessing SmartBox, as well as access levels. It also provides remote management (block and wipe) and control of all access devices, should a device be lost or stolen. Also, it uses two-phase authentication for all devices. So if someone hacks or finds out the username and password, they still can't gain access to the system. File transfers are encrypted during transit (RC4-128 by default) and all stored data is encrypted with AES-256 encryption. Similarly, all communications, such as instant messaging, are also encrypted.

For VoIP and video calling, it leverages HTML5 and WebRTC when available, which is supported in Firefox and Chrome. Mobile OS Android supports these as well, but Apple iOS does not. Both Android and iOS currently have standalone apps that get around the WebRTC restrictions to deliver voice and video calling. Using a PC browser, TMC Labs made some test HD video calls, and both the video and audio quality were superb. We also did a desktop share session, and the performance was also very good.

PanTerra Networks told TMC Labs, "We guarantee access to our cloud. If we miss an SLA metric, we'll credit you. We offer guaranteed 30-second response time to a support issue using our own secure instant message, 24x7x365. We offer 99.999 percent – five nines of reliability and availability. You won't even find an availability number from a cloud file sharing provider." The company uses its own highly available softswitch for hosted SIP/PBX capabilities and tightly integrates it into their offerings. We inquired about potential last mile issues with jitter and latency. The company told us that you can use your own data circuit, and it has peering agreements with the major carriers to ensure quality. On the higher end, the company can sell you one of its own circuits, which it purchases at wholesale from the carriers and it'll completely install and manage it for you, giving you a full managed service solution. PanTerra Networks explained, "We'll even sell you the hardware – the IP phones, the router, the switch, the circuit, the service – everything can be completely white glove managed by us. That's the only way, as you know, you can truly ensure and guarantee QoS all the way down to the end devices."

The company added, "When you're delivering multiple cloud services over the same pipe by separate providers you will inherently experience inter-provider service collisions, inter-provider problems. Good luck in getting any of those vendors to solve that problem. With our solution, we own all the services coming down the pipe, and in many cases we even own the pipe. So not only can we monitor inter-service interactions, but we are developing inter-service communications such that the services will automatically prioritize themselves when necessary to ensure QoS. For example, if you're uploading 2TB worth of files into the cloud storage at the same time your company is doing a video call or multiple audio conference bridge calls, we can re-prioritize such that the real-time communications takes a higher level of priority. You can only do that if you're a unified cloud service provider delivering those services yourself."

Ratings	Score
Installation	★★★★½
Documentation	★★★★
Features	★★★★★
Usability	★★★★★
Overall	A+

Pricing

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Conclusion

Offering full end-to-end management of its unified cloud services, including last-mile bandwidth and associated networking equipment, is pretty unique. By controlling the full end-to-end infrastructure, PanTerra Networks can offer superior availability, reliability, security, scalability, QoS, service level agreements and support. It's worth reiterating the company offers 24/7 30-second live support. SmartBox is a very feature-rich collaboration, communications, file syncing, and file sharing platform that truly redefines what unified communications and file sharing means – enabling enterprise users to engage with each other and their customers using everything from file sharing to IM, VoIP to video. TMC Labs has seen many unified communications and file sharing solutions, so we aren't easily impressed, but PanTerra Networks' SmartBox has carved out an entirely new aspect of unified cloud services by combining cloud-based file sharing and sync along with traditional UC features such as VoIP and video, and for that we bestow it with our Editors' Choice Award. IT

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

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By Paula Bernier & Erik Linask

TMC Announces SDN Award Winners

Software-defined networking is considered to be one of the most important, and potentially disruptive, developments in networking since the rise of the Internet. To date, networks and connectivity have come first, and applications have followed. SDN turns this model on its head, approaching networking from an apps-first standpoint.

SDN has already had a profound impact on the IT and telecom industries and as this technology continues to grow in popularity, the Excellence in SDN Awards recognizes the companies that are leading the way in SDN architecture and applications.

WINNERS

01 Communique Laboratory Inc.
I'm InTouch Meeting

Citrix
Citrix NetScaler SDX

ConteXtream
ContexNet

Ecessa Corp.
WANworX

Hewlett Packard
HP SDN App Store

NetCracker Technology
NetCracker End-to-End Service Orchestration for SDN

Netronome
Netronome SDN Middlebox Solution

Netsocket
Netsocket Virtual Edge

Nuage Networks
Virtualized Services Platform (VSP)

Openwave Mobility
Integra

Pluribus Networks
Pluribus Freedom Architecture

Radisys
Radisys' Telecom Cloud-Ready T-Series Platforms

Radware Inc.
DefenseFlow

Sonus Networks
Sonus SBC SWe

CTOs, Strategy Drive NFV, SDN Buying

Network functions virtualization and software-defined networking buying decisions at facilities-based service providers are being driven by strategic goals and high-level individuals at these organizations, but cost remains the primary driver, according to new survey results just released by Current Analysis. The firm says the CTO office is primarily responsible for making SDN/NFV evaluation and purchase decisions. CTOs, according to those surveyed, drive decisions around the deployment of NFV and SDN technologies nearly 70 percent of the time. Cost savings are driving interest in NFV and/or SDN, according to about two-thirds of survey respondents. Opex savings are the leading driver, according to the largest segment of those surveyed, while new revenue generation, and capital expense savings rank second and third as key drivers of NFV and/or SDN, according to the survey.

Huawei Opens OpenDaylight Lab

Chinese telecom equipment powerhouse Huawei has established a lab in Shenzhen where developers and users in the Asia Pacific can test and otherwise experiment with OpenDaylight solutions at no charge. The facility is on the approved OpenDaylight Community Labs list. The only other vendor-owned ODL Lab belongs to Ericsson. That facility, which opened in February, is in San Francisco. Huawei has been promoting the use of NFV and SDN to address backbone networks, data centers, metropolitan smart infrastructure, and mobile backhaul networks.

Logicalis Stands to Benefit from SDN

Software-defined networking is a new, game-changing technology that could shift the balance of things in the telecom and datacom equipment world. Among the potential winners in this game could be Logicalis, an international IT solutions and managed services provider. According to a new MarketScape Report from IDC, Logicalis is well positioned to compete against larger rivals and technology vendors in the SDN arena. IDC highlighted Logicalis for its "integration of network virtualization within its future portfolio."

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Phybridge

By Justin Reynolds

What Do Aviation and Telephony Have in Common?

Power Failure is Not an Option

Communication is essential to the success of any business, and customers need support when they want it. Should a businesses' phone system go down and a customer be greeted with radio silence during a crisis, that customer might ultimately decide to take his or her business elsewhere. With this in mind, it is imperative that businesses do all they can to ensure their phone systems remain online at all times.

Decision makers that understand the importance of maintaining strong voice infrastructure likely have invested in uninterruptible power supplies that will keep their systems running in case power outages occur. But what happens if the power supply unit within that UPS fails? Your phones go down, and your business suffers.

Having logged countless hours behind the controls of airplanes, Oliver Emmanuel, president and founder of Phybridge, knows the importance of ensuring that systems don't fail by having a backup layer of redundancy built into them. When airborne, you can't afford to experience mechanical problems. When designing Phybridge's innovative switches that deliver Ethernet and Power over Ethernet over a single pair of wire with four times the reach of traditional switches, Emmanuel took the notion into consideration from the start, which is precisely why failover features are built into the company's switches.

"As a pilot, I am acutely aware of the importance of failover, and this has been designed into our systems from the ground up," Emmanuel says. "Much like pilots can't afford engine troubles mid-flight, businesses having communications systems fail is not an option."

In the event of a power outage, unprepared businesses can be certain their phones will go down. Other businesses will stay online thanks to the failover in place from a UPS. If the PSU inside the switch fails, a redundant power supply will keep it running. But eventually you'll need a new power supply, and you'll be forced to bring the switch down anyway.

But in the case of a PSU failure, businesses can guarantee their systems will remain up and running with a hot-swappable power supply with redundancy and power-share. Power is essential to keeping phone systems online in any situation, and switches that lack failover features are certain to go offline during power outages.

Though any conversation surrounding IP telephony systems likely focuses on the network itself, when it boils down to it, power is arguably the most important feature of any such system. Without power, even the most formidable voice infrastructure is essentially worthless. With this in mind, decision makers who strive for five 9s reliability (systems that are online 99.999 percent of the time) should ensure that they do all that they can in order to make sure switches remain powered at all times.

While IP telephony units afford much greater versatility than their legacy counterparts thanks to the fact that they leverage the power of the Internet, one noticeable disadvantage of such phones is the fact that they need power to operate. When power outages occurred in the past, legacy telephones were not affected. Such telephones connected to the PSTN are powered by the telephone company's battery supply, which continues to function even if there's a long power outage.

When it comes to IP phones, the telephony industry has evolved and UPS units were developed in order to help keep these phones online during power outages. But the fact that the PSU within the switch could also fail was overlooked by many – but not by Phybridge.

Phones are critical lifelines that are expected to be running at all times. Most of the time, when power outages occur, people need phones the most because of the extenuating circumstances surrounding the outage. And that's precisely why Phybridge's PoLRE family of switches was designed from the ground up with power redundancy and hot swappable power supplies to ensure operational continuity of IP phones in the event of a power supply failure. The PoLRE switches that incorporate PowerWise technology are the only products on the market that include such redundancy as a standard feature.

In an aircraft, everything that has to do with power is doubled up so that if one fails, the next takes over. For example, aircrafts feature dual ignition, meaning that if the primary ignition failed mid-flight, the second ignition would be triggered automati-

cally. Furthermore, there are two spark plugs in each cylinder of a piston engine aircraft. Such aircrafts are fitted with two magneto systems, which each supply power to a separate spark plug in each cylinder so that if one system goes down, the plane remains operational.

Taking all of that into consideration, Emmanuel realized the importance of redundancy and was inspired by his love of flight when crafting Phybridge's innovative switches. Such redundancy was built into the foundation of the switches, whereas other companies offer it as an add-on.

Simply put, much like an aircraft cannot afford to lose power, Phybridge understands that phone systems are not operational without it as well. Failure is not an option. If power fails on one of the company's switches, the other switches will then kick in and your systems will remain online.

Power is a critical component of strong communications infrastructure – and one that is often overlooked. When it comes to redundancy, UPS is just a piece of the puzzle. Phybridge, on the other hand, offers a complete power management solution (PowerWise). Much like an aircraft has dual magnetos to ensure the engine stays operational, a combination of UPS, hot swappable power supplies and power and load sharing ensures businesses are able to attain five 9s reliability.

Even the most sophisticated telephony infrastructure cannot operate without power. Thanks to his experience at the controls of many an aircraft, Emmanuel knows the importance of power. And because of that, Phybridge does too. **IT**

Justin Reynolds is a content producer for Content Boost, the custom publishing division of INTERNET TELEPHONY parent company, TMC.

Oliver Emmanuel, president and founder of Phybridge

By Paula Bernier

Session Border Controllers

SBCs have long been a staple in carrier networks to enable secure carrier-to-carrier interconnectivity, and now many enterprises are using session border controllers as well. According to an Infonetics Research report issues in March, the E-SBC market grew a whopping 42 percent last year, to $255 million.

"Demand for enterprise session border controllers continues to be strong as businesses transition to SIP trunking. North America remains the primary region for the E-SBC market, but enterprises in other regions, particularly Europe, are accelerating adoption of SIP trunking, which in turn should positively impact E-SBC sales outside North America," notes Diane Myers, principal analyst for VoIP, UC, and IMS at Infonetics.

In this month's roundup, INTERNET TELEPHONY invited suppliers of both carrier and enterprise SBCs to tell us about their products.

ADTRAN
www.adtran.com

ADTRAN offers a comprehensive session border controller solution set that provides resellers and managed service providers the tools necessary to stabilize, secure and troubleshoot the SIP to SIP communication between the service provider network and their customers' premises. The solutions enhance and simplify IP service deployment and traffic control in any business environment from the small business to the large enterprise. ADTRAN's SBC software feature pack is targeted at small and medium-sized businesses, and is available on multiple hardware platforms including ADTRAN's NetVanta 3430 and 4430 routers, NetVanta 6250 and 6300 series of IP Business Gateways, as well as the market leading Total Access 900e series of IP Business Gateways. In March 2014, ADTRAN expanded its SBC portfolio by adding the NetVanta 6410 SBC appliance for the large enterprise. The complete SBC toolset offers interoperability with a broad set of features that include SIP Header Manipulation Rules, media anchoring, packet capture, voice quality monitoring, SIP security inspection firewalls, and more.

Alcatel-Lucent
www.alcatel-lucent.com

2013 was a breakthrough year for Alcatel-Lucent in the session border controller market, rising to the No. 2 market position, according to Infonetics. Alcatel-Lucent's SBCs are high performance, provide optimal support for new service types, and are cost competitive. Alcatel-Lucent IP Border Controllers solution is now ready to meet the next wave of opportunities driven by mobile IP, WebRTC, and cloud. As part of Alcatel-Lucent cloud communications, the IBC solution is virtualized and cloud-enabled with the support of cloud hardware technologies to provide fast deployment and rapid scaling over smaller points of presence, in larger central offices, or data centers supporting millions of subscribers. This alternative to the native hardware-based model delivers unrivalled bearer processing with high capacity throughput and provides strong DDoS protection able to protect against small packet attacks. Moreover, it features low overhead and run-to-completion scheduling to allow for the replacement of digital signal processors while maintaining high performance compute resources on commercial off the shelf hardware.

AudioCodes
www.audiocodes.com

AudioCodes offers a highly diverse portfolio of session border controllers, designed for enterprise and service provider applications. Offered in a range of scales from just a few sessions on the Mediant 500 platform, up to the 16,000 session flagship Mediant 9000 and software-only SBC, AudioCodes has an SBC solution for any size business, cloud application, branch office, or enterprise.

The Mediant 800, 1000 and 3000 SBC appliances are offered in optional hybrid gateway/SBC configurations and transcoding, making the migration from TDM to SIP trunking seamless – a key differentiator that reduces risk and improves survivability. The Mediant 2600 and 4000 offer mid-market scaling for enterprises with optional transcoding DSP resources. With embedded quality of experience measurement and reporting, AudioCodes SBCs play an important role in ensuring a superior user experience and high voice quality across an entire unified communications voice network. Using the new SBC wizard, provisioning and configuration of an AudioCodes SBC is even easier – answer a few simple questions and a configuration template is created and loaded into the SBC, saving time and eliminating common configuration mistakes.

Avaya
www.avaya.com

Avaya is a leader in supporting the enterprise move to SIP-based communications. Whether it's to lower costs using IP telephony or to take advantage of the latest UC collaboration applications, SIP is emerging as the industry standard. With the enterprise benefits from the reduction in access costs and the support for a varied set of client devices, the move to SIP has also led to an increased concern for maintaining network integrity and security. Avaya Session Border Controller for Enterprise supports up to 5,000 sessions offering a complete application-layer security architecture in one device: SIP firewall, session border controller, intrusion detection system and intrusion prevention system, access controller, authentication, unified communications proxy, and policy enforcement, protecting all real-time unified communication applications, and any SIP-based collaboration solution. The Avaya SBCE enables remote workers to connect securely without VPN, helping to manage the use of consumer devices within any enterprise network. It provides high-speed SIP connectivity for service providers while securing the network border against security attacks. The SBCE provides multi-level security protection for extended, cascaded network architectures. The Avaya SBCE is available in simplex or HA architectures, as a low-cost server or a VMware compatible virtualized appliance, offering secure SIP protection for midmarket or large enterprise installations.

Cirpack
www.cirpack.com

Founded in 1999, Cirpack provides core network solutions including session border controller and voice trunking and access (VTA softswitch) solutions. Thanks to its local presence in France, Germany and Mexico, Cirpack provides close support to its 150 telecom operators customers. The Cirpack SBC responds to today's crucial need for security and network protection while adding valuable and innovative features to operators and end users. To provide the right solution for each network, Cirpack offers a large range of SBC products, from standalone to decomposed SBC units that are fully integrated into broader solutions. They deliver scalability from 250 to 64,000 SIP sessions, from 2,500 to 250,000 end users. They offer the capability to stack the equipment for larger capacity requirements, reducing service interruption risks due to hardware. They can enable such applications as VoLTE, residential VoIP, PBX trunking, cloud PBX and UC, end user mobility and nomadism, SIP national and international interconnection with media and fax transcoding, signaling and media encryption functions. These solutions are compliant with the ETSI TISPAN & 3GPP IP multimedia IP subsystem evolution to VoLTE. The Cirpack SBC is increasingly being deployed as a SIP interconnection solution with external network, compliant with international and specific national standards in countries such as France, Germany, and Italy.

Cisco Systems
www.cisco.com

When connecting from the edge of the enterprise network to the service provider network, organizations can deploy session border controller technology with SIP trunking to gain benefits such as substantial cost savings, improved reliability and rich collaboration with customers, partners and suppliers. Cisco Unified Border Element (CUBE) is Cisco's SBC, a key part of Cisco's Collaboration Edge Architecture. Unlike other standalone SBCs, CUBE is a software solution integrated onto Cisco routers. Its unique benefits are as follows. Smoother migration to SIP trunking: Deploy CUBE and Cisco voice gateways simultaneously on the router, allowing time to test and learn the new technology until the cutover. Because CUBE is activated with a simple software upgrade, often no new hardware is required. Deployment flexibility: CUBE is scalable and cost-effective, with multiple deployment options (centralized, distributed, or hybrid) so customers can customize their SIP trunk architecture. CUBE also interoperates with standards-based IP PBXs. Better security: CUBE's integrated voice-policy goes beyond static white/black lists to policy-based evaluation of call patterns and media flows, to prevent abuses such as toll fraud or telephony denial of service. Investment maximization: CUBE offers additional services, including secure rich-media collaboration for remote workers, call recording, contact center integration, and more.

Dialogic Inc.
www.dialogic.com

Dialogic BorderNet session border controllers give service providers and enterprises a better way to interconnect and deliver services through media and signaling session performance, secure any-to-any IP connectivity, native software transcoding, and an integrated Web 2.0 management console. The BorderNet Virtualized Session Border Controller is a virtualized full-featured SBC with native software transcoding, making it well suited for network functions virtualization initiatives. It provides elastic scalability for unparalleled session control and security, and cost-effective licensing lets

you go from low traffic volumes all the way up to 8,000 simultaneous sessions at 200 sessions per second. The BorderNet 4000 Session Border Controller provides high-capacity security and session management in a carrier-class platform for peering and access applications in mobile and fixed environments. Service providers can take advantage of comprehensive security, session control, native software transcoding, and interworking capabilities to offer high-quality SIP and H.323 services. Both platforms enable you to rapidly deploy SIP trunk, unified communications, hosted contact center, and business and consumer VoIP services. Comprehensive security features include topology hiding, firewall, overload protection, dynamic black listing, and multiple encryption options for protecting service and network integrity.

Edgewater Networks
www.edgewaternetworks.com

Edgewater Networks has more than 10 years of experience in providing managed services platforms for the delivery of real-time communications, including IP-based voice, video and data services. More than four million Edgewater Enterprise Session Border Controller sessions are currently deployed by some of the largest service providers, including one of the two largest U.S. carriers and three of the top five U.S. cable operators. Edgewater's products address the challenges to secure and reliable enterprise unified communications, including device and protocol interoperability, security and policy management, troubleshooting and QoS. With more than 200,000 units deployed, Edgewater products are used to deliver reliable, differentiated, business class services by leading carriers, cable operators, service providers, and enterprises. The comprehensive Edgewater solution consists of three products: EdgeMarc Enterprise Session Border Controllers – to simplify the deployment of converged voice, video and data services while improving call quality, security and the overall end user experience; EdgeProtect Enterprise Session Border Controllers – to enable enterprises to securely and simply extend unified communications applications to remote employees; and EdgeView VoIP Support System – to allow service providers and enterprises to reduce operating expenses by streamlining configuration, automating routine tasks, and simplifying the diagnosis and resolution of networking issues.

Ingate Systems
www.ingate.com

Ingate E-SBCs make it easy to deploy SIP trunks and UC applications. The Ingate SIParator is a cost-effective E-SBC that is interoperable with major IP PBXs and SIP trunking service providers. Ingate's SIP Trunking Startup Tool configures the SIParator in three easy steps, so enterprises can leverage the economic and productivity benefits available with SIP trunking immediately. For service providers, Ingate products offer a high-quality, reliable SIP trunk demarcation point between the customer's IP PBX and the service provider network. Ingate solves interoperability issues to simplify deployments, and supports remote diagnosis of reported issues. Placed at the customer edge, Ingate provides secure firewall traversal, diagnostics and security to simplify SIP trunk implementations whether over a managed connection or the public Internet. Ingate products are available as appliances and software deliverables and can support up to 10,000 sessions. Ingate's WebRTC & SIP PBX Companion integrates the PBX, call center and UC infrastructure with WebRTC. It includes Ingate's Q-TURN technology, enabling WebRTC's video and audio to be delivered with high quality into the enterprise LAN. Q-TURN incorporates a TURN server in the SIParators so that

enterprises can control access to their network and enable packet tagging for WebRTC quality of service.

Metaswitch Networks
www.metaswitch.com

The Perimeta SBC from Metaswitch is the first in a new generation of session border controllers. It is unique in having been architected from the outset as a carrier-class software SBC solution, and has been specifically designed to address the issues carriers see when operating SBCs in real-world networks. Unlike legacy SBCs, Perimeta is not dependent on proprietary equipment. Perimeta's multi-threaded and multi-core aware software architecture leverages the processing power of today's Intel CPUs to produce unrivalled performance and scalability. Perimeta can run on standard server hardware (ATCA, Dell, Cisco, HP, IBM), or from within a hypervisor in a virtualized environment, providing cutting-edge performance and platform flexibility. Virtualizing SBCs is a critical component in the march toward network functions virtualization and in helping to transition operators into being true software telcos. Perimeta's software heritage means it is leading the charge in this area, and is the only SBC built on exactly the same codebase throughout, no matter what the underlying hardware. As certified by Miercom's independent third-party testing, even under extreme overloading scenarios, Perimeta continues to operate at its optimum – processing valid session requests and forwarding traffic without compromising quality of service or security.

Oracle Communications
www.oracle.com

The Oracle Communications Session Border Controller enables communications service providers to deliver trusted, real-time communications services across IP network borders. The Oracle Communications Session Border Controller is designed to satisfy all session border control requirements for fixed line, mobile, and over-the-top service providers, enabling trusted interactive communications across IP network borders. The functions offered by the solution satisfy critical service provider requirements in five major areas, including security, interoperability, reliability and quality, regulatory compliance, and revenue/cost optimization. Similarly, the Oracle Communications Enterprise Session Border Controller connects disparate IP communications networks while mitigating security threats, curing interoperability problems, and ensuring reliable communications for businesses. The solution is specifically designed to address the unique security, interoperability, and reliability challenges that businesses often encounter when extending interactive voice, video, and unified communications across SIP trunks. Oracle Communications Enterprise Session Border Controller supports distributed, centralized, and hybrid session initiation protocol trunking topologies.

Radisys
www.radisys.com

Session border control equipment is primarily intended for session security and admission control between two network endpoints across a network border. In an IMS architecture, the SBC was never intended to provide transcoding between mismatched endpoint codecs, particularly video transcoding, resulting in scaling limitations between signaling and media transcoding requirements. Increasingly, network planners are embracing network functions virtualization and decomposed SBC architectures, where border signaling gateway requirements are scalable and independently deployed from transcoding performed in adjunct media processors. Radisys media processing solutions, deployed globally for VoLTE, conferencing and VAS services, are an ideal IP-IP multimedia transcoding solution for network operators, as well as decomposed SBC and gateway vendors. Radisys supports a wide range of high-volume codec requirements, including AMR-WB transcoding for VoLTE deployments, or HD H.264-to-VP8 video transcoding and transrating for WebRTC gateway applications. Radisys transcoding capabilities can be controlled using SIP- or web-based interfaces in 3rd Party Call Control architectures, or deployed inline in a Back-to-Back User Agent configuration. Radisys transcoding capabilities can be economically delivered as virtualized media processing for the telecom cloud, software media processing on Intel servers, or high-capacity media processing on the MPX-12000 Broadband MRF.

Sangoma Technologies
www.sangoma.com/sbcs

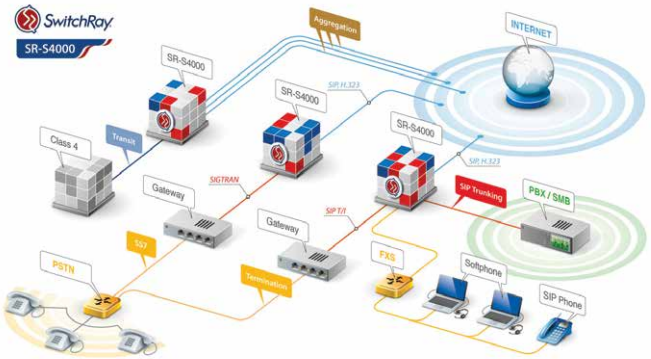
All of Sangoma's SBCs provide carrier-grade functionality, including toll fraud, denial of service attacks and eavesdropping

protection, and enable VoIP traffic to navigate firewalls and ensure interoperability between different SIP implementations. For corporate networks, Sangoma is an industry leader in enterprise session border controllers, right-sized for the corporate network; they are super easy to license and manage. Sangoma is known for producing premium telephony products that just work. The Vega eSBC from Sangoma has an attractive price point and as a result delivers exceptional value. Sangoma offers a Vega Enterprise SBC for Customer Premise, a Vega Enterprise SBC Virtural Machine model, and Vega SBC Hybrid Solution that delivers the flexibility, redundancy and durability of a VM-Ready Solution with the scalability of a hardware-based solution. For the ITSP, Sangoma's carrier-class SBC is designed to handle the high call volumes that carriers experience and provide a full range of benefits for their critical operations. Sangoma's NetBorder Carrier SBC is field-upgradeable and supports up to 4,000 sessions (simultaneous calls). Finally, Sangoma offers an all-in-one Lync appliance, Lync Express, which integrates both a VoIP gateway and SBC and cuts Lync deployment times in half.

Sonus Networks
www.sonus.net

Sonus Networks offers a complete offering of virtualized and hardware-based SBCs that enable end-to-end, feature-rich multimedia communications from the enterprise branch office to the service provider cloud. The Sonus SBC portfolio features six hardware-based SBCs – the SBC 1000, the SBC 2000, the SBC 5100 Series, the SBC 5200 Series, the SBC 7000 and the SBC 9000 – supporting as few as one to as many as 150,000 media enabled sessions. Rounding out the portfolio is the SBC SWe, the industry's first software-based SBC architected to deliver unlimited scalability with the same advanced features and functionality of Sonus' hardware offerings. The SWe offers the same code-base as the Sonus SBC 5000 family of products but allows the customer to scale from as little as 25 to an unlimited number of sessions. The Sonus SBC portfolio provides the industry's broadest end-to-end Microsoft Lync qualified SBC solution, and Sonus is the first to enable unique performance technologies such as quality monitoring for Lync calls and wireless Lync survivability for branch offices in its portfolio. Sonus solutions are deployed in many of the world's leading networks spanning finance, oil and gas, manufacturing, education, retail, health care and pharmaceutical markets.

SwitchRay Inc.
www.switchray.com



SwitchRay's session border controllers in the SR-S4500, SR-S5000 and SR-S6000 products control the signaling and media streams required for setting up, conducting, and terminating calls. These SBCs are positioned on the network border and ensure secure and controlled connections throughout IP network borders, media processing, call routing, and signal handling. The access SBC integrates signaling and media control at the border, where subscribers access the network core. The transit SBC handles the same issues at the network border where service provider networks interconnect. The SBC provides high-quality network connecting through transcoding and protocol conversion, overall capacity, and ease of system integration. SR-S4500 protects the core of the VoIP network with call admission control and NAT traversal. It offers flexible RTP handling options and system normalization and repair. SR-S5000 is a multi-service platform, which allows customers to offer a Class 5 platform with the option of bundled Class 4 and Class 5 features. SR-S6000 combines two modules: a Transit Traffic Module (Class 4) and a Value Added Services module (Class 5), allowing providers to select from a combination of Class 4 and Class 5 licensing models. IT

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By Paula Bernier

The Cloud, Microsoft, and Channel Eclipse

Microsoft kicked off 2014 with the news that it would make deep cuts in the commissions of service providers selling its Office 365, Exchange Online, and the company's other cloud services. The cuts, which were instituted to the Online Services Advisor Incentive program in late January, ranged from 15 to 50 percent, according to reports. Also in January, Microsoft joined forces with web hosting giant GoDaddy, which as a result is selling Office 365 to the small business community – yet another move many service providers selling these products view as an assault on their livelihoods.

Speaking at February's ITEXPO in Miami, independenceIT's Jim Lippie referred to what's happening with Microsoft and MSPs as just one example of what he calls channel eclipse. About 15 percent of MSPs are in hyper-growth, he said, but there are also a number of MSPs that aren't doing very well because companies like Microsoft that used to be channel companies now can go direct to the customer and because network elements like Exchange servers have moved into the cloud.

"I don't know anyone who has an on-prem Exchange server," he commented, suggesting that MSPs need to embrace the cloud and position themselves as trusted advisors.

While Lippie talks about channel eclipse, Peter Radizeski, founder and president of consulting company RAD-INFO Inc., sees things in a slightly different light.

"Microsoft is not eclipsing their channel, they are smothering it," he said. "[Managed service providers] typically made money on running Exchange and Small Business Server for SMB. SBS has been end of life. Office 365 has taken much of the Hosted Exchange business – or they have lost it to companies like Intermedia.net or other service providers giving it away for $1 to $8 per inbox."

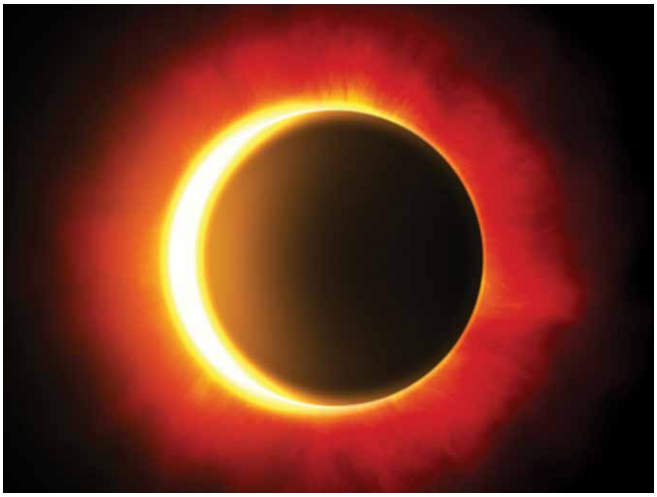
But MSPs didn't want to sell Office 365 anyway, according to Radizeski, who says these companies prefer "playing with boxes."

"In Tampa Bay, some have become software programmers instead of dealing with Microsoft's channel interruption," he added.

Radizeski also offered these words of warning: "Channel partners have to be cognizant of the changes coming – and have multiple lines of revenue. It's the only way to safeguard against one vendor from wiping out your business."

As noted above, one of those changes is the arrival of the cloud.

In its Annual Trends in Cloud Computing Report, published in August 2013, IT industry association CompTIA reported that approximately half of channel firms see faster revenue growth and larger profits from cloud offerings than from traditional offerings, but



mentions that there is still confusion related to cloud computing and that just less than half (46 percent) of channel firms have established the cloud as a strategic part of their business plans. That may be in large part due to the challenges of building the right skill sets to move on the cloud opportunity, the report indicated.

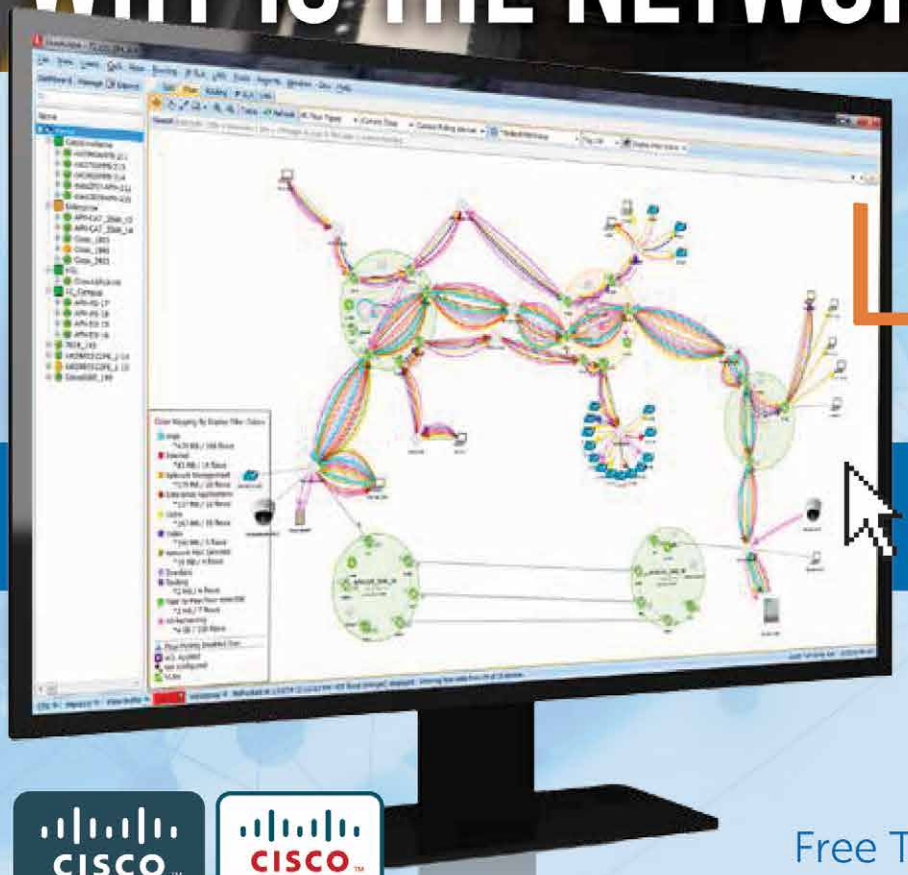
"As more disruptive technologies hit the market, many IT service providers are working overtime to protect their margins," according to a March 6 CompTIA blog. "While cloud and managed services bring new recurring revenue opportunities, they're also lowering the demand for formerly lucrative activities, such as server and software installation. On one hand, the increase in monthly income can work wonders for your business' value, but it may take months – or even years – to restore cash flow after converting from a traditional reseller model. The higher an organization's project revenue, the harder that transition may be."

There are four basic business models the channel can embrace when it comes to the cloud, according to the above-referenced CompTIA report. That includes Build, Provide/Provision, Enable/Integrate and Manage/Support. The association says seven in 10 solution providers involved in cloud start with the Build part and expand from there, and 26 percent play in all four of these categories.

"Business model decisions pose a tricky task for channel firms making – or having made – a cloud transition," according to the report. "Primary considerations depend on where a company wants to go with cloud: Resell a vendor's cloud solutions? Aggregate and broker cloud services from a variety of different sources? Integrate and customize cloud-based apps and services, or simply sell the infrastructure to an end user and provide consulting? Each of these paths and more are possibilities, as are varying revenue models available for all."

Deciding on a cloud business model was a 2013 challenge for 45 percent of those channel companies surveyed. But the No. 1 challenge for the channel relative to the cloud, according to the report, is developing the appropriate sales and technical expertise. IT

WHY IS THE NETWORK FAILING?



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By Peter Radizeski

Misunderstanding the Channel

Both Verizon and AT&T announced that they were committing millions to the channel. CenturyLink announced that channel had delivered big revenue last year. Telx said that more than 40 percent of new logos came from channel partners. Google has 10,000 channel partners.

More and more companies are looking to a channel to deliver sales.

That creates a problem because many channel partners are just not sales organizations. However, the service providers think that if they sign up 400 channel partners, sales will flow. It just doesn't work that way. And you are working against Pareto's Principle. If you follow the 80/20 rule, why even sign up the 80 percent? Choose the 20 percent carefully.

It goes back to the channel partners' business models. (No two are alike.) They sell complimentary or adjacent services during a sale, but they aren't going to door knock just to sell your stuff. Vendors think that their service is easy to sell and pays great, so why wouldn't the channel partners just pound the pavement getting ink?

If your service is less than $200 and my commission is 15 percent, how excited do you think I will be to just sell your services to make $30 per month? If you think there is a business model around that, please start your own network marketing company and become the next Amway.

Even more baffling are the press releases announcing a service provider has become vendor number 123 at a master agency. That's akin to having a dozen SKUs in the Tech Data catalog or being on page 3 on Google.

One vendor, MessageBroadcast, was in and out of the channel in nine months. This isn't uncommon. Tech companies want a quick return on investment in marketing or channel, which shows you how little they understand both.

The view of the channel as just a tool leads to disappointment. Would you randomly hire people for your sales team without a plan? That's about what many service providers are doing. It's become like commercials during live TV, which is why the DVR and Netflix are so popular – no noise. IT

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

Carrier Introduces New Pricing Tool

Windstream has come out with new tool that enables channel partners to provide direct pricing quotes for Windstream solutions. This application can be used on any smartphone or tablet to generate quotes, making it easy for channel partners to use while doing customer visits. Lauren Weatherly, director of channel marketing at Windstream, says this solution was created at the suggestion of the company's channel partner advisory board. "This pricing tool was designed to eliminate unnecessary review steps, increase efficiencies and accelerate the quoting process – all with the ultimate goal of delivering the Windstream 'smart solutions, personalized service' brand promise to our channel partners and their clients," said Matt Preschern, senior vice president and enterprise chief marketing officer at Windstream. "This new tool assists our partners in closing on-the-spot deals, increasing their revenue and supporting their continued business growth and success."

BluIP Joins AT&T Partner Exchange

Cloud-based unified communication services provider BluIP is now a member of the AT&T Partner Exchange reseller program. "We welcome BluIP to the AT&T Partner Exchange. Our collaboration will enable BluIP experts to bundle our innovative services with their in-depth knowledge to deliver tailor-made, end-to-end solutions to businesses," said Randall Porter, vice president of business development for emerging business markets at AT&T Corp.

Masergy Introduces Leasing Program

Cloud and managed services provider Masergy Communications Inc. recently rolled out a new leasing program that allows enterprises to cost-effectively deploy unified communications as a service anywhere throughout the world without having to buy new business media phones. The leasing program includes the Polycom VVX 300/310 entry-level business media phones with six programmable line keys, HD voice and gigabit Ethernet ports; and the Polycom VVX 400/410 mid-range business media phonewith HD voice, 12 programmable line keys, 3.5-inch screen, and gigabit Ethernet ports.

MagicJack Expands Retail Distribution

Cloud-based communications company magicJack VocalTec Ltd. is expanding retail distribution through the launch of its national indirect retail channel. The effort brings magicJack to major metro urban population centers throughout the United States. More than 10,000 new locations are targeted to open in 2014. That's in addition to the approximately 25,000 locations – including Best Buy, CVS, Frys, Radio Shack, Target, and Wal-Mart – carrying magicJack.

Stampede, Ask Proxima Join Forces

Projection display company ASK Proxima has tapped Stampede Presentation Products Inc. to distribute its gear to its customer base of 11,500 dealers. Amherst, N.Y.-based Stampede is the leading distributor of presentation equipment including LCD/DLP projectors and flat panel displays. It provides a range of brand name presentation equipment to a variety of audio/video, computer, and home theater resellers and integrators in the United States, Canada and Latin America.

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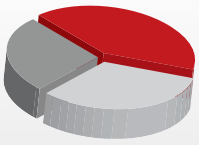

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Digital Realty, Silver Peak Offer Tips on DR/BC

Businesses learned a lot about the need for disaster recovery and business continuity in light of Hurricane Sandy, says Everett Dolgner, director of product management at Silver Peak, a provider of data acceleration solutions. That may seem like it's all in the past, he says, but believe it or not June 1 kicked off a new hurricane season, and that means businesses should make sure they're ready with DR/BC plans in place. Because storms can take out more than one data center at a time, businesses should consider how geography figures in to their plans, he says, adding that customers in Japan are now going all the way to the U.S. for data center backup. However, the further afield you go, the more you'll want to consider whether you want to backup all the data or just a subset of it. A second key consideration should be to ensure that workers can efficiently get at data from a remote site if the primary site goes down. "Disaster recovery and business continuity are vital for companies of any size," says Matt Miszewski, senior vice president of sales and marketing. "In the data center, this means ensuring your data is stored in geographically diverse regions (ideally in regions with low exposure to natural disasters), having redundant, diverse network connectivity, and having redundant power."

Cloud Security is Growing Fast

Companies are starting to get more paranoid about security, and that's a good thing. In light of the high-profile network breaches at such brands as Target, more companies are looking in to – and implementing – distributed denial of service solutions. Globally, the managed security service market totaled $14.3 billion in 2013, up 11 percent from 2012 (which was up 11 percent over 2011), according to Infonetics Research. The firm reports that 56 percent of 2013 security service revenue came from CPE-based services, while cloud-based offerings contributed 44 percent. The cloud-based security service segment is forecast by Infonetics to grow 60 percent between now and 2018, when it will be worth an estimated $10 billion.

Virtual Appliances Going Mainstream

The data center has seen a steady stream of virtual appliances being put in place. That's the word from Infonetics Research, which says that global application delivery controller revenue grew 10 percent between the third and fourth quarters of last year, concluding 2013 at $1.75 billion. Virtual appliances accounted for 14 percent of ADC revenue in the fourth quarter. Citrix is the leader in the virtual ADC space, while F5 Networks leads the overall ADC market. "Virtual application delivery controller revenue is growing fast as cloud services, hybrid cloud, and the shift to cloud-architected data centers create demand for virtual appliances," notes Cliff Grossner, directing analyst for data center and cloud at Infonetics Research, who adds that the market for hardware-based ADCs remains healthy as well.

Anuta Makes Available New SDN Software Release

Anuta Networks has come out with version 3.0 of its software-defined networking platform and announced that Norwegian data center services outfit Fjord IT as a customer. Technology Platform 3.0 is the core of Anuta Networks's NCX software for data centers, LAN, WAN environments. With this release, Anuta Networks software delivers global VDC spanning multiple data center PODs, and LAN, WAN use cases; support for DCI based on MPLS L2VPN and L3VPN; support for Cisco ASR 9K, metro Ethernet switches, and Juniper SRX and vGW, Fortinet Fortigate FW and Radware LB gear; and support for the Cisco IWAN technologies PFR, PBR, AVC, and DMVPN.

Alianza Expands into Canada

Cloud-based voice platform company Alianza has launched a wholesale VoIP solution in Canada. That, the company says, will help Canadian cable companies, ISPs, telcos and resellers dramatically reduce total cost of ownership and rapidly launch new voice over IP services. To support Canadian service providers, Alianza has added support for the French language, local star codes and emergency services, as well as interconnect agreements in Canada. Alianza hosts and manages the cloud-based VoIP solution, providing all the technology and management components required to deliver and monetize voice services.

BTI Systems Picks New Leader

Cloud and metro networking software and systems provider BTI Systems has announced the appointment of 25-year global telecommunications industry veteran Colin Doherty as president and CEO. He replaces Steve Waszak, who has served as the company's president and CEO since 2010. Doherty joins BTI from Arbor Networks, where he helped deliver first-to-market security solutions to some of the world's largest carrier, data center and enterprise networks. Promoted to CEO in 2009, he guided the company through its acquisition by Danaher in 2010 to give it more resources, followed last year by Arbor's acquisition of Packetloop. Earlier in his career, he served as CEO of Mangrove Systems and held senior management, sales and operations roles with NMS Communications and Nortel Networks. "BTI is experiencing the best growth and performance in the company's history, delivering category-defining cloud networking solutions to some of the world's fastest growing, most innovative and most demanding cloud and service provider customers, such as Equinix, Digital Realty, VK and a rapidly expanding list of others," said Neil Ferris, chairman of BTI's board. "We're thrilled Colin is joining as CEO because he has a unique understanding of our market opportunity, the networking software space and top-tier carrier, cloud and data center customers. He brings an excellent track record of scaling growth businesses, and we're very excited that he'll lead BTI's next phase of growth."

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By Dave Ballins

Choosing the Right Voicemail Solution for Your Business

It's been said that voicemail is becoming a parity technology that only keeps an enterprise equal with its competitors. So if voicemail is dead, why should you worry about replacing it? The simple answer is that while use of voicemail, fax and other legacy communications technologies are declining, they are still essential business applications that no business can currently do without.

When an enterprise is faced with replacing or upgrading an aging voicemail system, there are nine evaluation criteria to consider to ensure a successful legacy voicemail system migration.

1. Replication of Existing Features and Functionality
Most people dislike change, so successful migrations must ensure that existing features, functionality and user experiences are preserved. There can be many features to compare and contrast, so it's important to get a good feature comparison matrix that clearly outlines all the available user capabilities from each of the vendors under consideration.

2. Voice Systems and PBX Integration
The future of a company's voice strategy may not always be clear. Today you may be on a TDM Avaya PBX, but tomorrow you may merge with a company using a Cisco VoIP solution or another manufacturer's voice platform. Don't ask only if the new voicemail solution can integrate with your existing PBX, but be sure to ask about integrations with leading, next-generation voice platforms.

3. Architecture
Architectural flexibility is a must. Manufacturers are moving to open standards and virtualization. However, many enterprises still require solutions that can be deployed in either a traditional telecom standalone server configuration or as a fully integrated business application running in an open standards or virtual environment. Also, the solution should be able to be deployed either on premises or in the cloud.

4. Resiliency and Scale
During this transition, many enterprises take the opportunity to reduce costs by flattening and consolidating related legacy applications like fax, speech attendants or mass notification apps into a single common platform. When combining apps onto a single platform, the solution you choose must be highly scalable and able to be deployed in a site or geo redundant or high availability configuration.

5. Integration with Business Applications
Today, voicemail solutions increasingly provide rich integration into the cloud, SaaS and social applications where users live and work such as those from Microsoft, Google, Salesforce and Jive. These apps have become essential business communication and productivity tools. As enterprises increasingly move to the cloud, consumption of business applications is rapidly moving away from thick clients on desktops to ready access via the browser and mobile devices. Your voicemail solution should be able to keep pace by communication-enabling these applications regardless of the endpoint or device.

6. Integration with Clients
Many companies are already employing collaboration clients from Cisco, Microsoft and Google to provide a common UC experience that is accessible from a variety of business applications. This fact makes it even more important to determine whether your new voicemail solution will integrate with existing manufacturers' UC clients and promote and support a common user experience.

7. Design and Implementation Expertise
On-time, on-budget deployments are predicated on your provider's ability to assess current and future requirements associated with the replacement of legacy voicemail systems. Checklist items like past experience and installation staffing (onsite vs. remote), are essential to consider.

8. Supportability and Ongoing Software Assurance
In the past, voicemail companies like OCTel and VMX provided migration tools that allowed enterprises to migrate data and apps from one proprietary platform to another. Today, your migration will almost certainly include a move from a proprietary or manufacturer-provided hardware system to a new, manufacturer-provided or open source platform with no commonality to your existing system. Therefore, you will need to consider new models for software, hardware and administrative support and training.

9. Financial Considerations and Options
Beyond the actual dollars and cents comparisons between vendors, it is also important that vendors offer both operating and capital expenditure options to meet the ever-changing consumption models of the enterprise.

Each enterprise facing the replacement of its legacy voicemail will have unique circumstances and considerations to weigh during the process. Evaluating your needs across these nine categories will put you in a strong position to make the right choices and deliver the best results. IT

Dave Ballins is the North America director of channels for Esna Technologies (www.esna.com).

Tango Brings Mobile UC to CLECs

Three of the nation's largest wireless service providers rely on Tango Networks technology to power their business mobility solutions. But Tango also caters to competitive service providers that may not have cellular networks yet want to deliver mobile unified communications and more. While mobility is now commonly offered as a component of PBX and unified communications solutions, Tango Networks adds value on several fronts, Al Leo, senior vice president of sales for the Americas, tells INTERNET TELEPHONY. For example, its mobile UC can function as a SIP trunk end-point. The Tango Networks solution also allows end users to receive and send texts from their cell phones and they look like the text came from the work number; that way users' personal cell phone numbers are masked from the receiving end and the employer retains more control over the clients to which employees are texting. Because the Tango technology is in the network and doesn't involve an end user client, it helps businesses in the financial sector ensure that all calls that need to be recorded to comply with the Dodd-Frank Wall Street Reform and Consumer Protection Act are captured. And Tango Networks can bring a single mobile UC solution even to environments using a collection of different suppliers' on-premises and/or hosted PBX and UC solutions.

Infonetics Floats UC Cloud, On-Premises Study

Cost is the most important factor driving cloud UC adoption, and e-mail is the most common cloud-based UC application, according to a recent survey by Infonetics Research. Survey results also indicate that 88 percent of respondents plan to add videoconferencing to their unified communications architecture by February 2015, and that mobile device integration is rated a very important UC capability by 74 percent of those that participated in the survey. "The barriers to adoption no longer outweigh the benefits of unified communications, and as a result there are fewer and fewer businesses not utilizing UC," says Diane Myers, principal analyst for VoIP, UC, and IMS at Infonetics Research. "Enterprises have a number of choices, from traditional premises-based solutions to a variety of cloud capabilities. This makes for a fragmented market for businesses to wade through, but it also provides options to best fit a wide swath of requirements."

Yorktel Resells iRobot Solution

Yorktel has struck a deal to resell the iRobot Ava 500, which is described as an autonomous visual collaboration robot for the enterprise. The product combines iRobot's mobile robotics platform with Cisco's telepresence technology. Yorktel adds to that it delivers deep integration, installation, monitoring, maintenance, and professional and managed services expertise, as well as the Yorktel VideoCloud service platform. When operating on Yorktel's VideoCloud, Ava 500 allows multipoint conferencing. So, for example, it can enable several scientists to collaborate with colleagues during an experiment.

Integra Acquires ProTel NetWorks

Facilities-based service provider Integra has expanded its hosted and managed business communications portfolio through its purchase of ProTel NetWorks. Terms of the deal were not disclosed. Salt Lake City-based ProTel is a unified communications managed services provider and one of the largest Mitel dealers in the country. "In the dynamic communications landscape, we've continually pushed the envelope, working directly with manufacturers and our own software engineers to bring customers leading-edge customized voice and digital solutions," says David Glissmeyer, CEO of ProTel NetWorks. "I've spent the last 30 years building this company on innovative and reliable solutions, quality engineering, and outstanding customer support. That meshes perfectly with Integra's values and business model and we're excited to join forces."

Telesphere Unveils MobileConnect

Cloud-based service provider Telesphere, which owns its own IP MPLS network, has come out with a new bring-your-own-device solution called MobileConnect. The new solution brings VoIP, video call/conferencing, IM and collaboration capabilities to the mobile handset. It allows users to move from one device to another without call interruption; synchronize call logs, buddy lists and service settings across all devices; communicate on multiple services with a single online identity; instantly view the presence of contacts; and share information and collaborate using desktop sharing and virtual meeting room features. MobileConnect leverages BroadSoft's UC-One platform.

GENBAND Wins Call Transfer Patent

GENBAND has received a patent for call-transfer technology that will allow people who are equipped with its smart office platform to seamlessly transfer active calls from one handset to another. "Our Call Grabber technology is just another example of how GENBAND is innovating to make employees more accessible and productive," said BG Kumar, president of GENBAND's Multimedia Business Unit. "Mobility is more than just having a mobile device – it is about improving access to communications from anywhere and allowing employees to select the most conducive device for their work environment."

Son Will Not Settle

Moves toward consolidation continue in wireless service provider circles. As you've probably heard, Sprint has been trying to buy T-Mobile. Quoted in a mid-February piece in The Wall Street Journal, Sprint Chairman and Softbank CEO Masayoshi Son commented that he "can't settle with No. 3 or No. 2. It's my personality." The piece said sources close to Son indicated he is likely to explore "all possibilities" to vault Sprint into the No. 1 carrier position.

Evolved Packet Core Revenue Expands

Dell'Oro Group says the overall wireless packet core market grew two percent during the fourth quarter of 2013 versus the year-ago period. Evolved packet core is the higher growth portion of the market and is used to manage LTE wireless networks. While North American growth in this space has slowed significantly, Asia-Pacific growth – specifically in China – is expected to contribute significantly to growth in 2014. This could be beneficial to Alcatel-Lucent, Ericsson, Huawei, NSN, ZTE, and others, according to Dell'Oro.

U.S. Mobile Data Nears $100B

The U.S. mobile data market was valued at $90 billion last year, and is forecast to cross the $100 billion mark this year, according to Chetan Sharma Consulting. The mobile services market has seen the introduction of new pricing plans almost weekly this year, a trend prompted by T-Mobile. "T-Mobile also changed the device subsidy equation in operator's favor and OEMs saw the impact first-hand in Q4 2013," said Sharma. "More of that will happen in 2014 as consumers start to do the math of decoupling the device cost with the services expense."

Cisco Issues New VNI

Worldwide mobile data traffic will increase nearly 11-fold over the next four years and reach an annual run rate of 190 exabytes by 2018, according to new data from Cisco. The projected increase in mobile traffic is partly due to continued strong growth in the number of mobile Internet connections, such as personal devices and machine-to-machine connections, which will exceed 10 billion by 2018 and will be 1.4 times greater than the world's population.

Allot Analyzes Mobile Trends

The latest mobile trends report from Allot Communications indicates that mobile subscribers tend to evaluate the overall quality of their mobile networks based on their video viewing experiences. Yet, the company adds, as demand for video content grows, video delivery quality continues to be an important challenge for operators.

AT&T Adds Value, Cuts Pricing

As noted above, there has been an onslaught of wireless pricing and packaging changes in the recent months. As analyst Jeff Kagan recently noted, AT&T Mobility recently reduced the price and increased the size of its Mobile Share Value Plan. AT&T now charges $40 per month for a 2-gigabit plan. The plan also has been expanded to include individuals and two-person families. "AT&T continues to evolve. Trends in the wireless industry continue to grow and change and AT&T is sticking with those trends and in fact driving them. They just announced they are reducing the price of their Mobile Share Value Plan and increasing the capacity. They are also making this plan available to smaller groups of one or two person families. Customers should love this move," says Kagan. "This is a significant savings. This gives more data at a lower cost. I think this is the new direction of the wireless industry. Companies like AT&T will offer more for less to their customers. This idea has not yet spread throughout the industry yet, but as AT&T continues to win new business I think the writing is on the wall."

ADVA Optical Launches AnyCell

AnyCell, a new solution from ADVA Optical Networking, combines performance-assured carrier Ethernet backhaul, precise time and phase synchronization and managed optical fronthaul, using wavelength division multiplexing technology, to flexibly connect macro cells, small cells and remote radio heads.

DT Embraces Jibe

Jibe's RCS Hub is now available for interconnecting carrier RCS and joyn services throughout the world. Deutsche Telekom and other multi-national carriers are deploying RCS services hosted by Jibe in European markets. "Jibe's RCS Cloud and Hub were developed to enable the rapid transition to a globally connected IP mobile network able to deliver the most innovative and engaging communication services to subscribers as part of their phone experience," said Amir Sarhangi, co-founder and CEO of Jibe Mobile. "Interconnection of RCS services between carriers both regionally and internationally is fundamental to connecting mobile subscribers around the world beyond simple voice and SMS to easily video call, group chat and share their favorite videos, photos and files as part of their everyday conversations with any friends over any mobile network. Deutsche Telekom's decision to adopt the Jibe RCS Hub is a significant step forward in simplifying and speeding up IP communication interworking momentum between carriers and their subscribers throughout Europe."

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By Paula Bernier

iM to Build Modular Colocation Facilities Along Allied Fiber Routes

A few years back a company called Allied Fiber set out to build a nationwide dark fiber network in an effort to bring more affordable and efficient fiber to a variety of customers. The New York-based company is selling dark fiber and neutral colocation along various railroad rights of way around the United States.

Now iM, a Miami-based firm, which today has three data centers in the U.S. and one in the U.K., has an agreement to build 31 modular colocation facilities for Allied Fiber along the Allied Fiber route. The dark fiber provider tapped iM to provide their design, build and installation expertise for these 1,200-square-foot colocation facilities.

These colocation facilities for Allied Fiber – which will serve as major regional points of interconnection for carriers – are expected to be installed approximately every 60 miles along the fiber backbone owned by Allied Fiber.

Michael Roark, CEO of iM Companies, tells INTERNET TELEPHONY that the company as of mid-March had completed five of those new modular colocation facilities – in West Palm Beach, Fort Pierce, Rockledge, New Smyrna Beach, and Jacksonville, Fla. Another facility was scheduled to be installed in St Augustine by the end of March. After targeting the Southeast, says Roark, iM Companies will turn its attentions for Allied to the Northeast.

iM also offers an affordable line of modular server data centers that are designed to support critical IT loads of 5kW, 10kW and 15kW per rack, and constructed as interconnecting pods that each contain twenty 24-inch-by-48-inch equipment racks. They deliver N+1 or 2N redundancies, and are Category 5 hurricane rated with flexible and highly scalable options, according to the company.

"We've been in the design/build/development business since 1986 and in the colocation business since 1999," says Roark. "With our modular solutions, we get to fully synthesize our capabilities towards a unique offering for modular colocation facilities and data centers. I don't believe any other firm offers their own modular solutions with such a turnkey roster of options. Besides providing fully-outfitted modular data centers, we will also do the messy work related to site development, jurisdictional approvals, power acquisition, connectivity provisioning and the like; all based on what we have done for many years. The most exciting thing for me is that we will also provide the option to finance and operate these as fully-managed colo facilities, based on monthly charges."

Roark's previous experience includes founding FiberMedia as well as running the 28-year-old design and build firm M K Roark Inc., which has built hundreds of projects including the Miami carrier hotel at 36 Northeast 2nd St.

"I have known Mike Roark for many years, and we have worked with iM on the design of the Allied Fiber colocation facilities for about two years now I believe," Allied Fiber CEO Hunter Newby told INTERNET TELEPHONY. "iM helped Allied Fiber with many aspects of the electrical and mechanical designs as well as the construction management, delivery, install and commissioning. They have been very good to work with."

As for Allied Fiber, Newby said that his company has completed the installation of a 528-count fiber cable from Miami to Jacksonville, Fla., and expected to have the full Florida system complete by the end of March.

"The next segment in the Southeast is Jacksonville to Atlanta," Newby said. "Our fiber cable is already installed between Valdosta and Macon, Ga., which is 150 miles, so that leaves only about 240 miles left to install. [Next comes] Jacksonville-Valdosta, and then Macon-Atlanta. We will also be installing five more Allied Fiber colocation facilities in Georgia. This should begin in the summer and end in the fall. The exact dates for that are not set yet, but the cost of the build is fully funded." IT

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TelePacific Targets Texas

TelePacific Communications offers connectivity, including fixed wireless, T1, MPLS, VPLS, and much more. The overarching goal at TelePacific is about making life easier for customers by leveraging its broad portfolio to create solutions that are customized to the needs of each customer, and providing the customer a single bill and single point of contact. TelePacific does business in California, Nevada and Texas, a state in which the company during the past two years opened five new offices and just recently got a new leader. Brad Mitchell in late March was named president of TelePacific Texas. Eight of the nation's largest, fastest growing cities are in Texas.

TeleSphere Addresses Special Circuit Management

TeleSphere Software has introduced the Advantage Circuit Management solution. The special circuit management platform, which is available by license or via the software-as-a-service model, is an operational support system platform that outfits service providers with a better way to manage the issuance and receipt of access service requests, explains Todd Twete, TeleSphere Software's national sales director. Making service providers more efficient and, therefore more profitable, is the goal of this new product, Twete says. With this solution, when a service provider receives a special circuit request, it can get to revenue faster, he adds. Today there aren't good processes for receipt and issuance of ASRs, Twete says, so many local exchange carriers use spreadsheets or homegrown applications to do the job. But those methods typically don't work well as service providers scale, he adds. Advantage Circuit Management, which was unveiled and became available in February, offers service providers the ability to track circuit and plant inventory; and presents costing information, such as how much the service provider is paying for a special circuit, which customer is using it, and details about that customer's SLAs on the circuit.

Transition Makes Launching Ethernet Services Easier

Service providers live in a world of complex networks with lots of moving pieces, and they are faced with the pressures of keeping costs down while at the same time introducing new services and scaling as demand requires. So helping service providers to get network elements and related services up and running as quickly and painlessly as possible addresses both their efficiency and their time-to-revenue requirements. Transition Networks is delivering on both fronts with its Ethernet products and related Converge Element and Service Management system, says Jon Collins, senior product manager at the company. Initially built to enable remote service provisioning on the Transition Networks boxes, Converge EMS now also can do service activation tests, and run and execute reports based on those tests, Collins explains. That makes it easier for service providers to run tests on such services as private line and ELAN, so they can get those services launched to customers as quickly as possible. The tests look at such parameters as delay, frame loss, latency, and jitter, so service providers can understand what kind of service level agreements they might want to offer in connection with the services.

Sonus Gets Big with SBCs

Big things are happening at Sonus Networks Inc. The company earlier this year at Mobile World Congress introduced its 7000 session border controller, which represents the highest capacity SBC to date both for Sonus and for the industry at large, according to Beth Frazier, sales vice president for the organization's service provider effort. The SBC 7000 – which was designed to address cloud, video, voice over LTE, and rich communications services – can support as many as 150,000 sessions, 120,000 of which can be transcoded. Each 7000 can serve up to 1.2 million registered endpoints. The 7000, which is based on the same code as the other Sonus SBCs, becomes generally available in late June.

Overture Equates the New Network to the Smartphone

The rise of the smartphone created a platform on which virtually anybody could quickly build and introduce new services and applications to customers. A similar model is now possible, leveraging the carrier network as the platform. That's the word from Overture Networks Michael G. Aquino, president and CEO, and Mark Durrett, head of marketing. Among the news additions to the Overture product line to help make that happen is the 65F10, a 10-gigabit optical Ethernet access device, which the company introduced earlier this year. It's designed to support such applications as enterprise cloud services, Layer 2 router offload, and mobile backhaul. This product is part of Overture's larger open service architecture called Ensemble, which includes controller and orchestration functionality. Service providers can leverage it to accelerate and optimize their service activation, and it opens the door to a plethora of new applications that use virtualization for better scalability and lower cost operations.

Huawei Opens OpenDaylight Lab

Chinese telecom equipment powerhouse Huawei has established a lab in Shenzhen where developers and users in the Asia Pacific can test and otherwise experiment with OpenDaylight solutions at no charge. The facility is on the approved OpenDaylight Community Labs list. The only other vendor-owned ODL Lab belongs to Ericsson and is in San Francisco.

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By Paula Bernier

Cornell's Statler Hotel Checks Out New IP PBX, Wiring, Wi-Fi Technology

There's a hotel in the center of campus at Cornell University in Ithaca, N.Y., but this isn't just any lodging facility. The Statler Hotel has a history dating back to the 1950s, when it was opened as a test bed of sorts related to Cornell's School of Hotel Administration.

Today the 153-room facility is a full service inn, which in recent years has received a Four Diamond award from the AAA. But while its service has been award winning, the hotel's communications infrastructure has not. As Tim Durnford, associate dean for business affairs at the School of Hotel Administration at Cornell University, explained, the hotel in recent years has relied on 23-year-old CAT 3 wiring that was creating bottlenecks, an old Nortel switch that interfaced with the university switch, and DSL-based broadband access.

The Nortel gear was about a decade old, and was long past its official end of life date. Because the switch was no longer supported by the supplier, which had been split up and sold off in piece parts, the hotel had been relying on the gray market for parts to keep it running, Durnford said.

"So we were sitting on a ticking time bomb we believed," he said, adding that the hotel's Meridian voicemail system had failed more than once.

In this day and age in which always-on communications and Wi-Fi capability have become table stakes, he continued, hotel management decided that just wouldn't do. So, in 2013, they began to look at how they might resolve those issues.

Durnford called on Michael Raiser Associates, a technology consulting company that helps organizations create communications plans to move them into the future. MRA in turn contacted DCI Design, a telecommunications system analysis, design, planning, implementation, training, and maintenance services firm, and a certified Platinum dealer of Mitel and NEC solutions, to price out some options for the hotel.

After doing some analysis, the companies identified NEC's UNIVERGE SV8300 IP PBX as the best solution to fit the bill. It met the hotel's requirements of moving from a digital PBX to an IP PBX, providing a rich set of features, redundancy and scalability, the ability to integrate with the property management and other hotel systems in place, and support for E911 capabilities, said Jim Shea, vice president at MRA. The NEC solution was also attractive, Shea said, because it is certified to work with what Shea considers the best guest phones in the marketplace – from VTech. And it extends IP PBX capabilities to smartphone users.

The hotel's Cat 3 wiring was replaced with three Cat 6 cables to each room first. Then came the installation of the switch, which was being installed as this story was written the last week of March.

Wi-Fi is supported at the hotel using gear from Ruckus. And that Wi-Fi will be offered to guests as a complementary service. That and the new wiring should significantly alleviate the problems of guest complaints about the DSL-enabled broadband the hotel had offered.


Tim Durnford

Durnford said the hotel was a little aggressive in forging forward with some of these new technologies, but ultimately he and his team figured they could not afford to wait any longer to embrace these solutions, as it is clear that big bandwidth needs and mobile are here to stay. Not only will these new solutions outfit the hotel to address current requirements, but they will position it for the future as well. For example, one Cat 6 wire goes to each room's TV, so the hotel is ready and wired for IPTV if and when it should choose to adopt it. The hotel is also looking at leveraging that connectivity to deliver additional in-room capabilities such as climate control, remote control of window coverings, and other smart building features. IT

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By Erik Linask

Become the Next Google or Facebook with Software-Defined Networking

So you want to be the next Google or Facebook? Who doesn't? You'll need the right team to get there from an operational perspective, but building an SDN-enabled network can put you on the path technologically.

No, it's not really about becoming the next Google or Facebook, but about becoming a great company. What these two have in common and do better than most other companies is use automation, operational efficiency, and simplicity to get the most of their hyper-scale data centers and deliver a quality user experience.

According to Prashant Gandhi, vice president of products and strategy for software defined-networking at Big Switch Networks, there are two ways to achieve such high levels of efficiency: enhance your existing network with an SDN solution or replace/build a new SDN network. Most enterprises today are likely to opt for the former alternative, moving slowly into an SDN environment.

One of the critical network components required for proper operation and configuration is monitoring and management, which involves a series of network taps, typically for each monitoring tool in the network. This can easily result in hundreds of individual taps that must be managed and maintained, and which don't act as one cohesive unit, creating inefficiency in the network.

Big Switch is now shipping version 3.0 of its Big Tap product, an overarching monitoring fabric that, to the network, looks and is like a giant master tap to which all monitoring tools are attached. Sitting at the top the network, the Big Tap Controller uses SDN-enabled switches and user-defined policies to optimize traffic flows, routing them to the right tools, not only increasing network visibility, but also creating a highly efficient network by eliminating multiple points of congestion. It's a risk-free way of migrating to SDN.

For leading-edge companies looking to move more rapidly to a full SDN network, Big Switch's Unified Cloud Fabric offers a single controller to manage policy-based routing across both physical and virtual networks. While the Unified Cloud Fabric is still in beta, with general availability expected later this year, businesses that have already migrated to cloud models and have applications distributed across physical and virtual appliances will achieve simplicity and consistency in monitoring, policy management, and troubleshooting through a single management tool.

There may not be a next Google or Facebook, but there will be many businesses requiring the network efficiency and simplicity that has helped these two Internet giants succeed.

With the new generation of applications being developed, and the tsunami of devices – both user-controlled and machine-operated – networks will soon be experiencing millions (perhaps billions) of connections per second, as the world becomes more and more IoT-driven. Businesses can ill afford the complexity and latency in their networks once these devices and applications reach a critical mass. "Businesses might start with monitoring, but once they are comfortable with SDN, they will seek SDN alternatives for every network-related project that comes up," says Gandhi. "Once the first SDN apps are lit up, we expect it to spread like wildfire because of the simplicity and efficiency."

As more and more traffic hits networks, that traffic will need to be sent through network/user services before hitting the end application. This already creates complexity and latency, which will only increase as applications and traffic grow. SDN provides the programmability to eliminate any bottlenecks that would result in traditional network flows.

No, there may not be a next Google or Facebook, but there will be many businesses requiring the network efficiency and simplicity that has helped these two Internet giants succeed. Moving to SDN will help businesses achieve that level of service. IT

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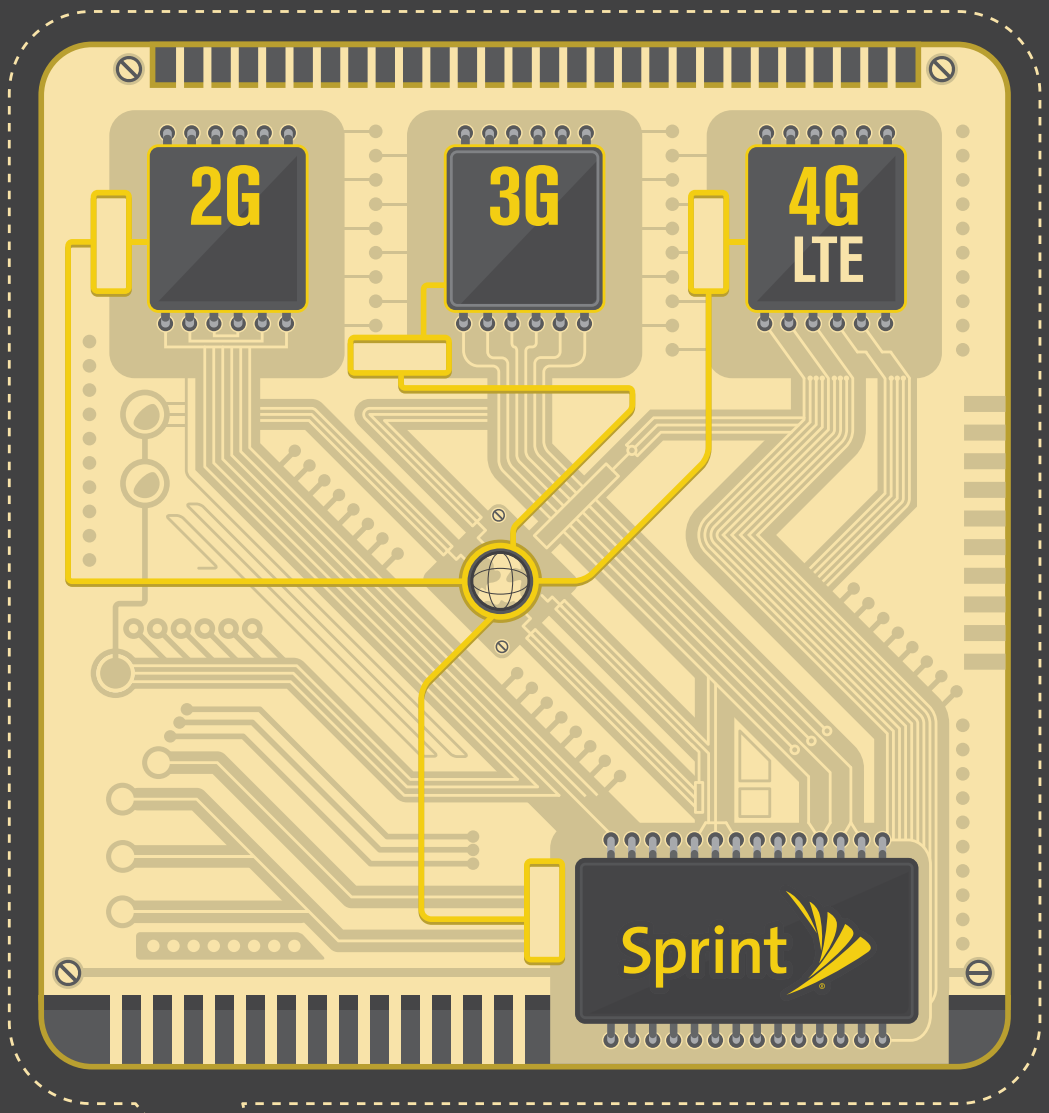

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