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TMC INTERNET TELEPHONY

VOLUME 15/NUMBER 8 OCTOBER 2012

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POSTMASTER: Send address changes to: ***INTERNET*** **TELEPHONY**®, Technology Marketing Corporation, 800 Connecticut Ave, 1st Floor East, Norwalk, CT. 06854-1628 USA. Canada Post: Publications Mail Agreement # 40612608, Canada Returns to be sent to: Pitney Bowes International, PO Box 25542, London, ON N6C 6B2, CANADA

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Social, Mobile & Broadband

You've no doubt heard about a little company by the name of Facebook. The company and its storied leader, Mark Zuckerberg, will go down in the annals of digital communications as creating what has become known as social media.

Now social is expanding in new directions. Not only are organizations figuring out how they can leverage social media to drive better customer service, build code, enable internal efficiencies, and expand brainstorming, social now is also allowing select customers to share broadband connections.

As reported by The Verge, a start up called Karma recently launched a wireless service that outfits subscribers with a $69 hotspot that anyone else with the appropriate account on Facebook can use as if it's a public Wi-Fi access point. "Users pay $14 per gigabyte of data they use, with no monthly fee or minimums," The Verge reports. "The twist is that Karma makes your hotspot into an open Wi-Fi network. When a new user joins, they are taken to a personalized page about the owner of the hotspot. Strangers can then sign in with their Facebook account and get 100MB of free browsing. For every user who does that, the owner of Karma gets 100MB of free data credited to his account."

Karma's leadership says its service is to mobile data as Dropbox is to storage and Google is to e-mail. The Karma service, which runs on Clearwire's WiMAX network in 80 major U.S. cities, is being referred to as social telecom. But it sounds to me more like social broadband, or social mobile. Whatever you call it, it seems to be an idea that's spreading.

Akil Chomoko, head of product marketing at Volubill, recently told me that the idea of individuals coming together around such services will be more common in the future. In fact, he said, some of the first social telecom services were launched a few years ago in Europe by BT and others under the generic term FON. The services, he noted, let people sign up for service and agree to allow others to connect to their Wi-Fi signals as they pass one another's homes or offices.

However, he added, Karma is the first service provider doing something along these lines in the U.S. Its service, he said, lets users buy a dongle for immediate personal W-Fi, and others connect to it as long as they like via Facebook.

All this connection sharing means there will be an even greater need for solutions that authenticate users, and otherwise control and regulate broadband connectivity, he said.

Speaking of social media, I wanted to add that this is an area about which I have a particular interest. In fact, TMC recently launched CUSTOMER magazine, a new title (of which I am the editorial lead) that helps organizations understand how to deliver top-drawer customer service in the age of social media and the mobile boom.

As I mention in the inaugural issue of CUSTOMER, social media and internal data are seen as two great ways to better understand customer needs and desires, yet few companies are able to transform it into customer insight that drives better company strategy, as noted by Kate Leggett, senior analyst at Forrester Research. CUSTOMER magazine was created precisely to assist organizations to meet these challenges head on.

To get a subscription to CUSTOMER magazine, email Shirley Russo at srusso@tmcnet.com. You can also read the magazine online at TMCnet; our September issue will post in early October to www.customerzone360.com.

Social media will also be the focus of several panels I'll be moderating this month at ITEXPO in Austin, Texas.

That includes a session called "Don't Waste Your Time on Social" on Oct. 3 at 10 a.m.; the De-Mystifying Social Media Integration in the Customer Service Environment" session on Oct. 3 at 1:30 p.m.; and an Oct. 4 panel called "What You Can Learn From Your Least Satisfied Customers".

Hope to see you there. **IT**

Eliminating the Pitfalls of Software Development

Software development productivity has evolved tremendously over the decades as the cost of computing has plummeted rapidly while the cost of human capital has accelerated. Of course there are some anomalies in the human capital part of the curve as development can now take place in countries like India where wages are lower than, say, Silicon Valley. Still, when plotted against a dollar per unit of computing power curve, which is exponentially decreasing, it continues to be much more expensive to hire programmers than to add processor cores or to increase clock speed.

Case in point: A few decades back when programming an IBM mainframe, it didn't matter that programmers had to batch their programs using punch cards and wait for the computer's results because you weren't going to add more mainframe processing power unless you won corporate Lotto.

This brings us to the present day where programming has become more of a combination of piecing together existing components and adding your special sauce than it is an endeavor started from scratch. Thanks to the Internet and sites like SourceForge and CodePlex, a developer can pick up the pieces of code they need to solve specific problems as they build their finished product.

According to Mahshad Koohgoli, CEO of Protecode, open source is the ultimate form of code reuse, but companies have to know the pedigree of the code they are using. In other words, a working project can have all sorts of issues you aren't aware of and which may bite you at some point in the future.

It may be tough to remember, but there was a time in life where the phrase "There is no such thing as a free lunch" actually was true. Since the nineties, thanks to Napster and now multiple P2P platforms, music and movies have become free (well they really aren't free, but they sure seem to be to so many). Moreover, you can download thousands of free productivity and game apps that are ad supported or use a freemium model. But – and please sit before reading further – open source software is not really free.

Let me explain. You see, you can download it for free and use it for free, but at some point you may not realize the problem on your hands.

There are about half a million projects on SourceForge and two-thirds of them are dead, according to Koohgoli. When he uses the term pedigree, he is referring to maintainability, bugs, security vulnerabilities, support and code evolution. In other words, you don't want to embed code into your product with known bugs and other problems which may not ever get resolved. Koohgoli says, by the way, that there are about 1,000 projects that get searched on again and again.

Protecode works with corporations to scan their software against its multi-terabyte database, which contains more than 140 million files to find similarities. It can scan binaries, packages, RARs, ZIPs and other compressed packages as well. From there the company uses its algorithms to determine which files match and moreover which project and version thereof is most likely to the best match. The goal is to minimize the manual work required, as you could potentially find 10,000 matches for a particular signature in the database.

Another challenge the company helps with is M&A, because buyers are becoming painfully aware of the liability involved regarding software and are doing their best to minimize these sorts of problems before they complete transactions. You may remember Cisco was sued in 2008 by the Free Software Foundation because of a GPL violation related to the Linksys products it purchased. As a result, Cisco had to provide its router software to the open source community for free.

Programming has progressed a great deal since the days of IBM and DEC assembler but knowing the quality of the code your company has produced is still as important today as it was when your programmers had to scour a multi-thousand page book to determine what an ABEND code meant. Thankfully, the process of determining code quality is much easier today thanks to a slew of new tools like those provided by Protecode. IT

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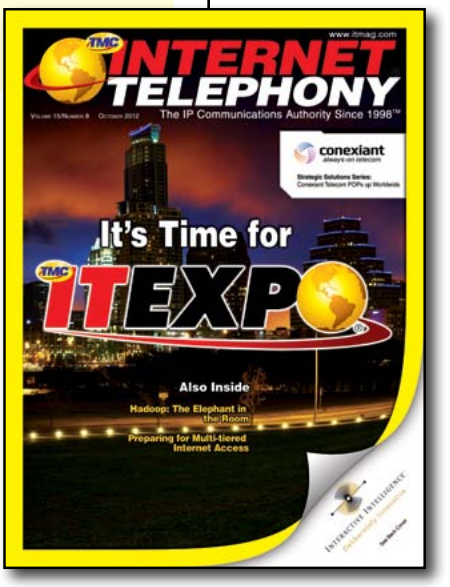

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By Hunter Newby

FirstNet – The $7B Start-Up Funded by the United States Congress

For those of you who did not know, and there are probably quite a few, let me share with you some details on FirstNet:
"In February 2012, Congress enacted The Middle Class Tax Relief and Job Creation Act of 2012, containing landmark provisions to create a much-needed nationwide interoperable broadband network that will help police, firefighters, emergency medical service professionals and other public safety officials stay safe and do their jobs. The law's governing framework for the deployment and operation of this network, which is to be based on a single, national network architecture, is the new First Responder Network Authority (FirstNet), an independent authority within NTIA. FirstNet will hold the spectrum license for the network, and is charged with taking all actions necessary to build, deploy, and operate the network, in consultation with Federal, State, tribal and local public safety entities, and other key stakeholders.

The Act provides $7 billion in funding towards deployment of this network, as well as $135 million for a new State and Local Implementation Grant Program administered by NTIA to support State, regional, tribal and local jurisdictions' efforts to plan and work with FirstNet to ensure the network meets their wireless public safety communications needs."

That is the official statement. If the "safety" overtones are removed it reads completely differently. FirstNet "will help" safety in the U.S., but after a close read of the Act it is clear that FirstNet is not limited to only investing in creating, operating and serving safety networks. That is an important distinction, borderline omission, in the headline story. Highlighting a few key words from the opening, what stands out is that the U.S. government is clearly acknowledging that the country is lacking a "much-needed nationwide interoperable broadband network".

Paying close attention to the fact that FirstNet is an independent authority within the NTIA raises a question. What does that mean exactly? Well, for starters, FirstNet is exempt from the Paperwork Reduction Act, Administrative Procedures Act and the Regulatory Flexibility Act. Just like any good mystery, one clue leads to another, so digging in to each of those Acts to see what the benefit of being exempt from them actually means is where that truth resides, but on the surface it all sounds like a big chainsaw cutting through the thick red tape that is holding back America presently from having a real nationwide broadband wireless network.

There are other interesting dimensions of FirstNet to be aware of. Here are just a few points.

Congress enacts the Act in February 2012 granting the 700mHz spectrum and appropriating $7 billion to a single, independent entity within the NTIA to build a nationwide network. This gets hardly any media attention.

In contrast, the Broadband Stimulus portion of the ARRA had $7.2 billion, received massive media attention and involved a lengthy application process with thousands of applicants and numerous awards.

Seven of the award recipients of the BTOP portion of the Broadband Stimulus were entities that were granted access to portions of the 700mHz spectrum to build public safety wireless networks. Now they all must vacate the spectrum and return their grant funds to the NTIA so that it can all be given to FirstNet.

FirstNet can use the $7 billion for capital as well as ongoing operating expenses, can enter in to commercial for-profit agreements to lease capacity and/or infrastructure it builds to other networks. Basically that means they can build out the network and then lease it to carriers.

FirstNet will "consult" with other authorities in the jurisdictions they go through, but apparently do not need to get any approvals for what they need to build as it will all be in the name of public safety. Public safety has certain, beneficial preemptive rights.

FirstNet will use existing network infrastructure "where economically desirable". The word desirable is interesting. It can be interpreted and argued differently than the word feasible, for example.

Individual states can essentially manage the process of building out FirstNet within their own states and enter in to leasing agreements with customers, etc., or they can choose to opt out of that role.

The board that is being assembled to run FirstNet is comprised of 15 people, three of which, the Secretary of Homeland Security, the Attorney General, and the Director of the Office of Management and Budget, are permanent members of the board. The other 12 will include representatives from the major wireless operators in the U.S. The wireless operators will be the users of FirstNet no doubt.

Who ever came up with this did their homework. They understand the issues that we face in the lack of a single entity with control, funds and the ability to execute without delay on a national communications system. This is our current U.S. government's answer to today's major public works project for the next century that follows in the footsteps of the creation of the Rural Electric Administration in 1935 to administer the electrification of the Nation and the Eisenhower Interstate Highway System created by the Federal Aid Highway Act of 1956.

Is this all right, wrong, or somewhere in between? Time will tell. We are officially in the first inning. **IT**

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

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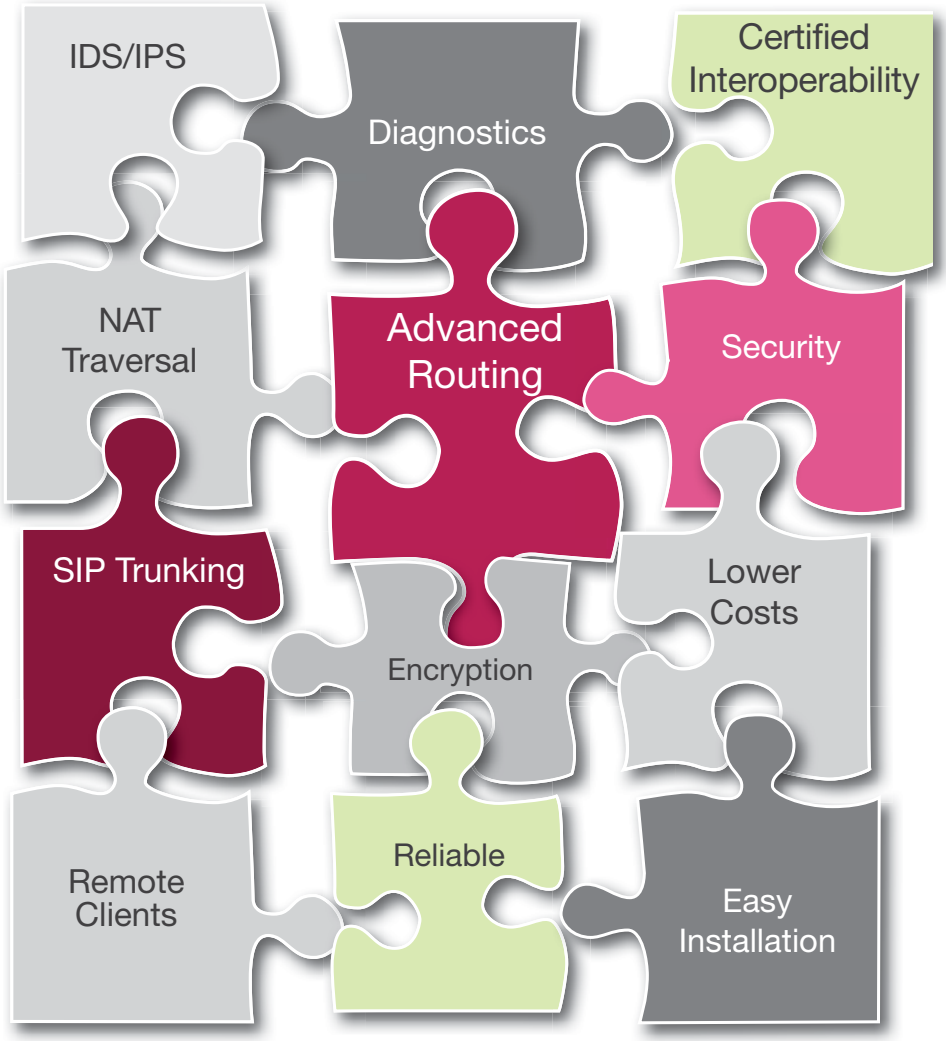

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BRINGING IT ALL TOGETHER

By Tim Ancona

Preparing for Multi-tiered Internet Access

Multi-tiered, metered Internet access is a business model nearly identical to that of current utility companies. Imagine if we paid a monthly fee for gas and electric and it didn't matter how much we used. We would likely use air conditioning more, keep lights on because it's too tough to flip the switch, and not worry about whether the TV was left on. The same is true about our Internet usage. We don't think twice about watching a funny video a hundred times or keeping Pandora running all day instead of turning on a radio. The current system – while very consumer-friendly – does not promote judicious Internet usage.

In 2009 Time Warner attempted to meter Internet access; however, the company discontinued the effort due to the sheer volume of complaints. While most Internet providers would love to have an official policy and pricing tier in place to do metering, they are deterred by a fear of similar consumer and media backlash. But if Time Warner's current effort to limit bandwidth succeeds, it will validate the business model and encourage other Internet providers to quickly follow. (Likely other providers already have some unofficial programs in place. Some Comcast residential customers can attest to having to upgrade to a business account because they used too much bandwidth and risked losing service.)

Since broadband is free once you pay the monthly bill, no one worries about how much gets downloaded. For this reason, many business owners view employee Internet usage at lunch or breaks or even throughout the day as a perk that doesn't cost the business extra and keeps employees happy. If metered usage is implemented, however, businesses will have to re-think whether Facebook, YouTube or Pandora truly are justifiable perks or if they need to be blocked at the firewall.

Although we don't want to rush into policy-making decisions about Internet usage, the likelihood is that multi-tiered, metered Internet access is coming. Therefore, businesses would do well to look ahead and take a few simple steps now to minimize future complications.

First, businesses can talk with employees about what they think is appropriate Internet usage. They should consult with their employees to find out exactly what sites they feel are mission critical and what sites are not work related. Site filters can be applied to get employees used to what types of sites will no longer be accessible in the office. Whatever standards are agreed upon should be put into effect as soon as possible so evaluations can begin as to what works. For example, blocking Facebook may have an effect on production depending on that particular business' social media strategy.

Second, businesses could set specific filter-free time blocks during which employees can use the Internet for anything they want (assuming it's appropriate for the workplace, of course). These blocks could be during lunch or break hours, with the company-wide filter temporarily switched off. A variation of this would be to grant each employee a certain amount of filter-free hours each week and letting them choose the times. That way they're not completely blocked and can make some choices themselves.

If metered usage is implemented, however, businesses will have to re-think whether Facebook, YouTube or Pandora truly are justifiable perks or if they need to be blocked at the firewall.

Third, businesses will be forced to re-evaluate meetings that take place over the Internet, like WebEx or Skype sessions. Nowadays, many organizations use these tools simply because they're easier than leaving one's desk – even when the attendees are all in the same building. Soon, however, such virtual meetings may no longer be as cost-effective as a phone call or face-to-face meeting. Long-distance travel is certainly an area where these types of tools will continue to prove useful, even with slightly higher costs related to bandwidth.

Multi-tiered, metered Internet access will undoubtedly create new, complicated issues to be dealt with. But its impact can be minimized by taking a few sensible steps. A final caveat is that businesses should know how much bandwidth they currently use, and how much it drops after some of the steps mentioned above are implemented. Most businesses have no idea how much they're using, but that's the first step in determining how large of a contract they'll need to sign in the event that Time Warner's actions have their anticipated effect. **IT**

Tim Ancona is the president and CEO of Ticomix (www.ticomix.com).

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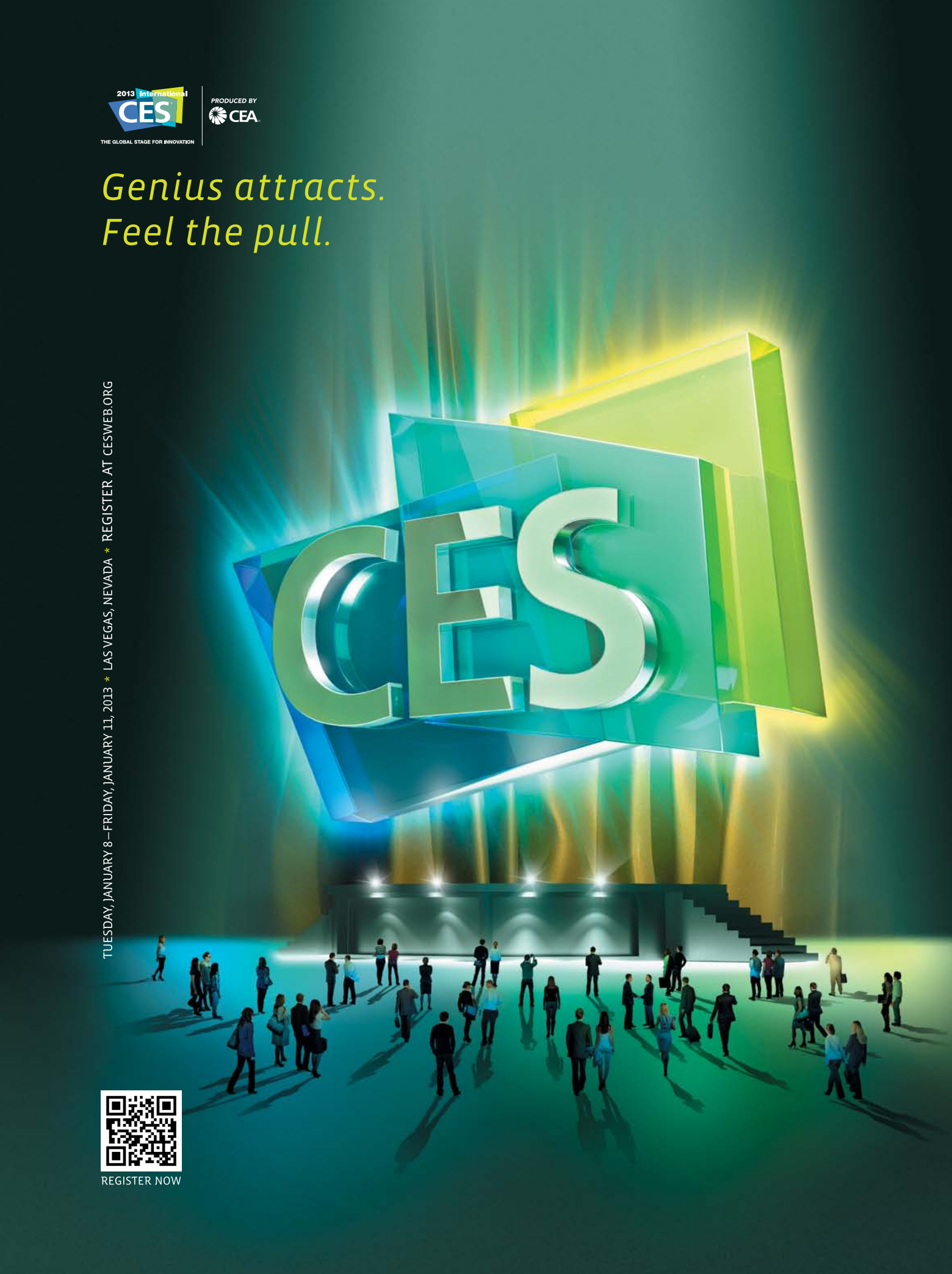

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By Mike Sheridan

Integrating the Tablet into the Enterprise

The introduction of the iPad in 2010 has helped to accelerate the twin trends of consumerization of IT and BYOD. Over the past several years, companies have been struggling to solve a growing challenge: how to support tablets in a way that could make them not just a consumption device but also a productivity device while also maintaining security.

So when Microsoft unveiled its much-anticipated Surface tablet this June, it was met with excitement but also guarded optimism. After all, other companies have launched ambitious offerings with the goal of displacing the iPad as the preferred tablet of employees and fallen well short. Cisco's tablet offering, the Cius, cost $750 dollars (nearly twice as much as an iPad) and was only available to enterprise customers through partner channels. Tepid sales led Cisco to pull the plug unceremoniously earlier this year. Similarly, the Avaya Flare offered a tablet that could function as a unified communications interface. Adoption lagged behind expectations, leading Avaya to develop a Flare app for iPads – a recognition of the iPad's dominance.

The overall message seems to be clear: Devices that try to focus exclusively on the enterprise without offering the same functionality or user experience as more consumer-targeted devices are facing an uphill battle. The reason is that iPads already manage to accomplish much of what these devices are attempting while fitting right into the BYOD mindset that has taken the IT world by storm. Consumers have developed an emotional attachment to their iPads, leaving companies to alter their whole IT strategy to support BYOD.

While the iPad is, inherently, a consumer-friendly device, it is not necessarily the most enterprise-friendly one. Integration might be the Surface's most effective selling point. Surface has the potential to both give the employees what they want while also integrating seamlessly with existing Microsoft platforms. For those companies using Lync as their unified communications platform, it could also prove to be a major boon to productivity. The Surface, meanwhile, comes with that Microsoft infrastructure, as well as highly-coveted compatibility with MS Office and two cameras optimized for Skype.

Consumers aren't going to let go of their preferred devices just because a company champions another product, particularly if that product is inferior. However, recent history has shown that convenience and functionality are powerful incentives for adoption. If you doubt me, think about how many photos you've taken on your digital camera this month compared with your smartphone.

It's this promise that keeps executives looking for a device that can satisfy the needs of the enterprise and the consumer. Time will tell if the Surface is the one they've been waiting for. IT

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

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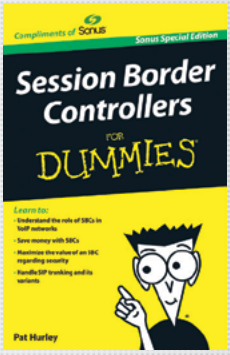

* Infonetics 1Q 2012 report "Service Provider VoIP and IMS Equipment and Subscribers

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By Jon Arnold

Desktop Video – When Good Enough is Good Enough

All products follow a similar lifecycle arc, and in today's world of IP communications, the cycles are shorter than in most industries, and getting shorter with each wave of innovation. To illustrate, I'll start at the beginning in this space – which for me is VoIP, and from there I'll move to video, which is now following a similar path.

When VoIP emerged in 1995, its technological shortcomings limited adoption to hobbyists and early adopters. The business value was weak, as few businesses were willing to compromise quality and reliability for the cost savings. TDM was the gold standard, and businesses understood they were paying a premium, but getting a very solid product. VoIP was simply not business grade, making it practically a non-starter. As VoIP matured, however, quality improved and the economics became more compelling.

At that point, VoIP should have accelerated on its lifecycle arc, but business adoption stalled because the high cost of IP handsets offset much of the savings. In time, however, growing volumes have driven down handset costs, and now the economics of VoIP make a lot of sense all around. Today, VoIP services cost less than TDM, and the same can be said of the IP handsets. The quality may not be 100 percent on par with TDM, but it's good enough for many businesses to justify using.

There are many parallels worth noting with video. Business video has been with us for decades, but as with telephony, legacy services were expensive, proprietary and inflexible. These are not the hallmarks of innovation or disruption, but IP-based video has changed all that. Video is more complex than telephony, and not surprisingly, the first disruptive iterations came at the top end of the market in the form of telepresence.

The advantage of setting the bar high early in the game and delivering on your promise is having the luxury to charge – and get – a premium price. On one hand, this keeps telepresence in the domain of near exclusivity, which brings highly coveted brand cachet, something Cisco has exploited effectively via product placement in movies and TV shows.

Conversely, you end up serving a small market that doesn't take long to saturate. For the rest of the TAM – total available market – telepresence ends up seeding demand for competitors who will find ways to serve these businesses with a scaled down solution.

This brings us to desktop video, which has long existed with free or near-free offerings, primarily for consumers. As with VoIP, technology developments on many fronts have allowed video to move along the lifecycle curve to the point where many solutions now exist that are suitable for businesses. Early on, the desktop was not seen as a destination for video since the small screen could not compete with room-based systems, which are designed for groups. Until recently, bandwidth was not plentiful enough to support personal video sessions on PC screens, especially when the experience was far removed from room-based group environments.

Now, as bandwidth is more accessible, and desktop video has more advanced compression codecs, better cameras, higher resolution screens, HD quality, etc., the overall experience is vastly better than in the past. Of course, aside from technology improvement, the concept of personal video has become more acceptable – and even desirable – thanks to our changing consumer habits. The adoption of new communications tools always accelerates when the underlying technologies improve, especially when they become easier to use. However, nothing drives adoption like bottom-up demand, and that's a big part of making desktop video more popular now with businesses.

Desktop video is still far from being mainstream, but this phase of lifecycle development has happened rather quickly, and several vendors have come to market, primarily offering cloud-based services. Not only does the cloud offer a low-cost platform to enable new entrants, but they can come to market rapidly and easily scale to meet demand.

Every segment of a market responds to a different value proposition, and that brings us to good enough. Cloud-based desktop video cannot match the immersive telepresence experience, but is perfectly fine for many forms of communication. There's another value dimension in terms of the mobility of desktop video. End users can use it from any broadband connection, and in most cases, the provider can ensure QoS for a consistent experience that is far more reliable than the aforementioned consumer video services.

As such, desktop video enables ad hoc collaboration, where it becomes very easy to run video meetings on the fly. This is a very different mode of working than room-based video, where meetings are often planned events. Desktop video speaks more to the needs of mobile workers, and especially those who work from home, which is another trend driving the demand for video communication.

This is really a classic tradeoff between price and quality, and while high-end telepresence will never fly with SMBs, there is clearly a demand for the inherent benefits. To reach this much broader market, price has to come way down, and to do that, something has to give. That's where we are today, and the offerings cited above are examples of where a good enough experience is good enough. When the right balance between price and quality is struck, the buyers will come, and that's what we're seeing now.

The business desktop video market wouldn't be at this point without telepresence, and both offerings will find a customer base. Together, this makes for a much bigger TAM, and that's good for SMBs, as we'll keep seeing new entrants, better pricing and more innovation. We're just at the beginning of what's possible with video, and the evolution path has many parallels to VoIP. I'm not sure what the next technology is that will follow this path, but the main message here is that we now have business-grade video solutions for all ends of the market, which makes mass adoption finally possible. So, when you start to rethink your communications needs, video had better be in the conversation. IT

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

Ask the SIP Trunk Expert

By Mike Gruszka

SIP Trunking and The New Normal

Today every business needs to work smarter, save money and remain flexible. At Broadvox, we call it The New Normal. The new normal demands technologies that can help you do more with less and still exceed customer expectations.

Work Smart

One technology that delivers on its promise of saving money and delivering flexibility is SIP trunking. For those new to SIP trunking, think of it as a smarter way to manage the phone lines for your business by sending voice calls over your existing broadband connection. SIP – which stands for session initiation protocol – is a method of establishing phone calls from IP endpoints such as PBXs, phones, or software clients, over the Internet. Even traditional PBXs that only accept PRIs, or analog line connections, can take advantage of SIP trunking through the use of an integrated access device.

Save Money

Switching to SIP trunking will typically save most businesses a lot of money – up to 70 percent over traditional phone systems. This is accomplished through better cost management by consolidating your voice and data traffic over the same connection. By replacing your traditional phone lines such as PRIs or analog lines with SIP trunking, you can eliminate the costs of these additional circuits delivered to your office.

Remain Flexible

Additionally, SIP trunks can be sold in increments of single concurrent call sessions. In this way, businesses can right size the capacity to make calls and save over the cost of a PRI with unused channels, which are sold in a fixed number of 23 voice channels. This flexibility and the scalable nature of SIP trunking also allow businesses to expand or shrink capacity as needed.

SIP trunking is just one example of how Broadvox is helping businesses adjust to The New Normal. IT

Mike Gruszka is director of product management at Broadvox (www.broadvox.com).

E911 Watch

By Nick Maier

E911 Notifications from the Cloud

As you may have heard, we are in the early stages of a cloud-based services revolution. More and more applications are migrating to the cloud, and many enterprises are eagerly embracing this model.

E911 services are no different. It is now possible for enterprise call servers to send 911 calls to the cloud for routing to any of more than 7,000 public safety answering points in the U.S. and Canada based on the location of the caller. Cloud-based call routing replaces the need for local trunks at each location to handle emergency calls – dramatically reducing telecom expenses for organizations with multiple locations.

Since cloud-based E911 services receive all 911 calls and also store the location record of the caller, more advanced solutions also have the ability to direct emergency notifications back into the enterprise over multiple networks. For example, the cloud can send screen pop notifications to security desk computers so guards with responsibility for a particular building or set of buildings can know immediately that a 911 call is under way in their jurisdiction.

Cloud-based emergency notification services also can send SMS messages with the exact location of the caller to the proper emergency response teams. E-mail messages also can be sent to corporate security or administration notifying them when 911 calls have been made from anywhere on the enterprise voice network.

Why does this matter? Studies have shown that if you can notify multiple persons inside the enterprise of a 911 call in progress and provide the exact location of the caller, you can save a minimum of two to three minutes in emergency response time and get people the help they need faster.

Today's cloud-based E911 services have the ability to leverage different networks – including the cellular network for SMS messages and the enterprise data network for screen pops and e-mail – to get 911 call notifications into the enterprise and into the hands of people with responsibility to do something about it.

Because of this versatility and effectiveness, look for cloud-based E911 services to continue to advance in capability and for further adoption by enterprises large and small. IT

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

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By Jeff Hudgins

Health Care IT: Digitize – Analyze – Mobilize

There are now more than 10,000 health applications in the iTunes store, and according to researchers, the world market for mobile health applications will exceed $1.2 billion in 2012.

The health care industry has always been behind in the adoption of information technology advancements, but that's going away. New wireless communication solutions are rapidly changing the way patients and health care providers use IT.

Three important phases to improve the quality of care are to digitally capture the information, use big data to analyze it, and communicate the results to patients and health care providers using mobile health applications.

Digitizing the information through Electronic Health Record and Picture Archiving and Communication solutions turns critical information into electronic data. The electronic data capture of both records and images eliminates huge amounts of paperwork and the need to manually file and retrieve images. Access to these records eliminates redundant MRI, CT Scans, and X-Rays.

Analyzing real-time information can then be used for predictive modeling and value-based treatment. Big data solutions bring new ways to aggregate and analyze large amounts of patient data on conditions and treatments in a user-friendly graphical user interface. As the information within the health care community continues to amass with these new systems, the data will be used in the future to manage patient care and expand clinical system knowledge, placing great demands on available health care IT infrastructure and storage capacity.

Mobilizing medical data for drug information support, patient monitoring, bar coding, and applications for consumer health is one of the hottest trends in health care IT today. Mobilizing health applications removes the geographic barriers to quality care and provides the option for remote care of an aging population.

So what's the final score? Health care IT providers and wireless network providers are beginning to partner to develop enterprise-wide solutions for the business, and the number of available applications continues to increase, especially for the patient. As more and more health care data becomes digital, storage management analytics improve, and mobile devices in the field of health care expand in number and processing speed, innovative solutions will become fully integrated to meet the growing demands of the health care provider and patient. **IT**

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

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YOUR NETWORK. OUR CONNECTION.

By Lori MacVittie

Convergence of (Emergency) Voice and Data

None of my adult children have a land line. It is unlikely they ever will – or will even consider it. They're millennials, and grew up in a digital world where phones are mobile, kept in your pocket, and used for texting and social networking and web access, not calling mom to see how she's doing.

It's unlikely that they – or others sharing their view on communications – have considered what that means to their ability to obtain emergency services should they need them.

coordinates from most mobile devices, a call to emergency services might tag you as being at home, when you're really at the local Dunkin Donuts.

That's a problem, and one that's increasing as VoIP becomes more popular as a means to communicate, especially for millennials. VoIP even on mobile phones is common with the next generation, and the rising popularity of tablets (which do not come with phone numbers) encourages the use of such peer-to-peer (especially as they're generally free) communications.

The addition of tablets and Wi-Fi-enabled phones only serves to exacerbate the difficulties emergency services has with trying to identify the location of a caller in need of assistance.

When organizations first started moving toward a converged network comprising both voice and data, the uproar over emergency services was heard loud and clear. Emergency service systems were designed to tag phone numbers to specific addresses for rapid response, based on the premise that a physical wire actually connected the phone to a location.

But that's no longer the case. The increasingly unwired nature of technology ignores that premise and ultimately breaks the system. E911 was developed to address this disconnect and systems were added that were able to use geo-location through techniques such as triangulation as a means to pinpoint an address. VoIP complicated things yet again, and the sometimes inaccurate databases tying IP addresses to locations frustrated implementers. The addition of tablets and Wi-Fi-enabled phones only serves to exacerbate the difficulties emergency services has with trying to identify the location of a caller in need of assistance. Though most phones and tablets are enabled with GPS, the data from which could be used to solve this problem, many users are reluctant to allow any application to share that data or have turned off the functionality because of its tendency to draw too much power and drain battery reserves faster than they can update Facebook.

In North America, location is determined by querying the automation location information database, maintained by third parties (typically the ILEC). Data from the ALI can be used to route the call to the appropriate local authorities as well as determine the location of the caller. Except the way in which the ALI is updated is not necessarily compatible with mobility. It's not necessarily updated in real time, which means despite the availability of up-to-date GPS

There is a growing need to find a longer-term solution to the problem of locating a caller that is accurate in real-time across both the IP and traditional carrier space. A more modern solution may require a radical change in the networking layer to support the inevitable transition of more and more communications to a digital format.

Perhaps we can take a cue from the lowest levels of the networking stack and geo-stamp packets much as we timestamp them. Perhaps there's a need for a new Ethernet type, the E911 type, which clearly indicates packets carry time-sensitive, critical calls for help.

A more network-oriented solution – given that almost all emergency traffic flows over networks today – may be the answer to resolving the disconnect between the two worlds. Giving infrastructure the ability to geo-stamp a specific traffic type may provide the best answer, given the preponderance of availability of such data from devices whether accessing services over the Internet or a carrier's cellular network. The emergence of LTE makes this possibility even more likely – and achievable – given the convergence under the covers of voice and data running on the same network.

It seems feasible, then, that network infrastructure play some role in ensuring that calls for help – whether via VoIP, SMS, or cellular – be identifiable when mixed in among traffic carrying status updates and streaming video of cats dancing to the latest Lady Gaga tune. **IT**

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

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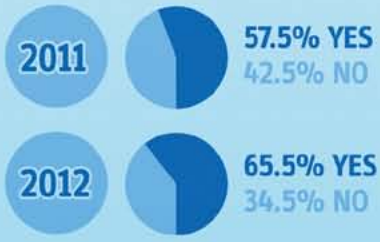

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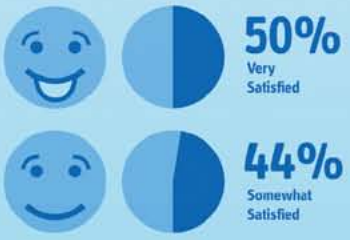

94% of respondents found their proactive live chat experience to be satisfactory

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Disaster Preparedness

By Rich Tehrani & Max Schroeder

Continuity Planning 101 – A Continuing Educational Series

How the Cow Ate the Cabbage

Many of you will be reading this column while attending ITEXPO West in Austin so perhaps a little Texas folklore is in order. The phrase "How the cow ate the cabbage" is a frequently used folk saying in Texas. In fact, the phrase was included in a speech at the 1988 Democratic convention by former Texas Governor Ann Richards. The generally accepted meaning is to tell someone a truth they do not want to hear. It certainly fits this column, as we regularly remind our readers about the dangers presented by not being prepared for business adversities. Procrastinators probably prefer silence.

Last year some extreme weather, including Hurricane Irene, hit the Mid-Atlantic and Northeastern United States just prior to the opening of ITEXPO. In Connecticut, TMC's home base, almost 50 percent of the state's electric customers were without power due to Irene alone – some, including several TMC employees, for more than a week. During this period the TMC website was operational; TMC editors and account managers were available; ITEXPO West registration services were active; and all other TMC operations including e-mail, fax, online publications and TMC Channels appeared normal.

The reason this story is so important is to impress upon you the fact that business continuity is achievable if you plan properly. Granted, TMC's staff has a slight advantage. They deal with the top communications service providers and vendors on a daily basis, so they are very familiar with the best available solutions. TMC showcases these solutions on the TMC website, in publications and at trade conferences like ITEXPO West. By reviewing and then showcasing these best of breed solutions, TMC is actually doing some of your homework for you and simplifying the selection process.

The advantages these technologies present for everyday use and as combined components of a BC/DR plan are quite compelling. Many components can simultaneously lower costs plus boost revenues by increasing employee efficiency. In other words, they actually contribute to the bottom line even if a disaster or adverse business circumstance never happens. Fortunately these best of breed solutions, particularly those involving SasS and the cloud, have a quick time to deployment. So what are you waiting for? Get started now! IT

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

Regulation Watch

By William B. Wilhelm and Jeffrey R. Strenkowski

California Considers VoIP Deregulation

In recent years several states have enacted legislation deregulating VoIP services. Most recently, California is considering a bill that would likewise limit the state's oversight of VoIP services. Under SB 1161, the California Public Utility Commission and other agencies and political subdivisions would largely be prohibited from regulating VoIP.

While removing authority to regulate many aspects of VoIP services, the California bill nonetheless allows for certain types of regulation. First, the law would not affect consumer universal service or E911 surcharges. Nor would it affect video franchising requirements under the Digital Infrastructure and Video Competition Act of 2006. California PUC would retain authority to enforce interconnection under Sections 251/252 of the Federal Communications Act, as well as the authority "to require data and other information" pursuant to the portion of the Utility Code governing ILEC forbearance petitions. The PUC also would maintain the authority to address intercarrier compensation disputes, and to enforce backup power system requirements. The bill also makes clear that it would not affect the California PUC's existing authority over other non-VoIP wireline or wireless services, and would not affect the enforcement of any state or federal criminal law or local ordinances of general applicability that apply to the conduct of business, the California Environmental Quality Act, or local utility user taxes. Unlike many other state VoIP deregulation laws, the California deregulation would last only until Jan. 1, 2020.

While the legislation carves out a number of regulatory requirements that could still be applicable to VoIP, it would ensure that a number of other market entry requirements and other requirements applicable to traditional telephone providers would not become applicable to VoIP services in the state. If enacted, the California bill could become a model for other state legislation. 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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/Best Monitoring ROI/ *noun*

1: Network element or sub-layer which provides access, capture, aggregation, filtering, defragmentation, deduplication and regeneration of traffic flows between the network infrastructure and performance/security tools. Interconnection system necessary to scale today's networks and data centers whilst preserving link layer visibility and minimizing tool Capex/Opex.

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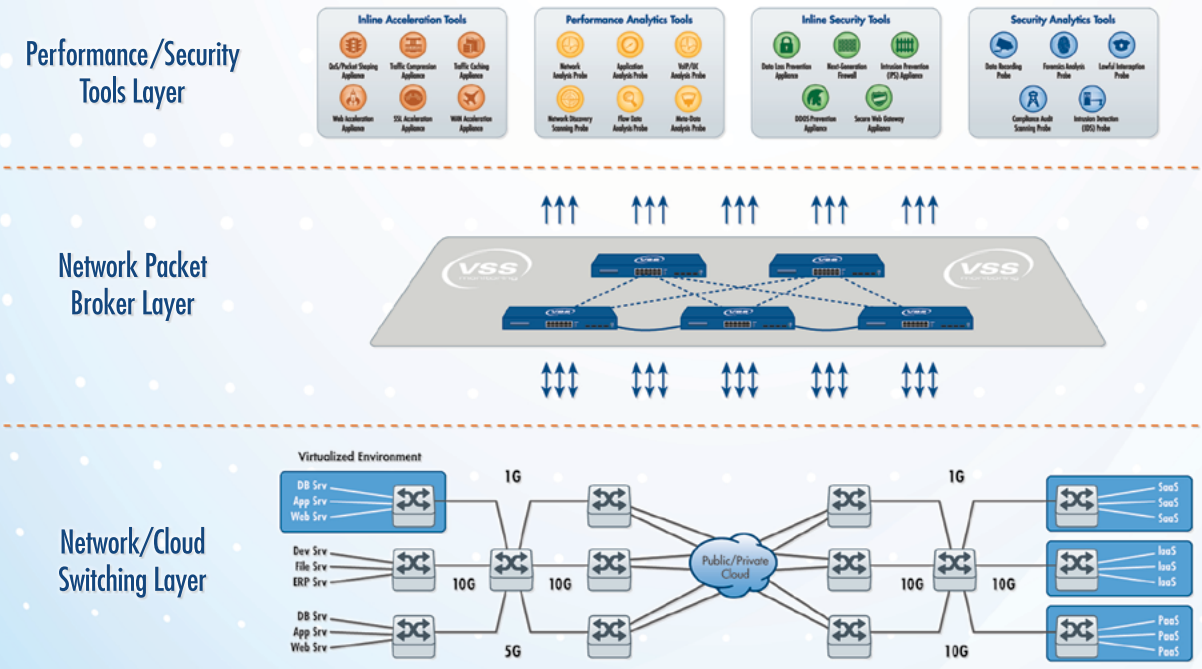

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- Overcome the growing financial burden between subscriber ARPU and cost of network upgrades.

By Peter Radizeski

A Brief History of Telecom Disruption

Telcos were making billions every year on TDM services – POTS, T1, PRI and long distance. In 1986, Sprint's pin drop commercials were launched. This signaled the race to the bottom for LD for the big three IXCs – Ma Bell, Sprint and MCI – declining from over a dollar per minute to a nickel per minute in about 6 years.

Then 1996 hit, along with the Telecom Act of 1996. Now, the RBOCs had competition for their lucrative voice business. Due to the tremendous cost of voice switches and central office co-location, many competitors utilized UNE-P, a switchless platform to deliver voice. UNE-P allowed them to basically resell ILEC voice with their logo and bill. Those with switches chased PRI business, since phone calls were the only way to contact businesses and customers at that time.

ISPs were one of the target customers for the CLECs with ISDN for dial-up access. ISPs were humming along with little ILEC competition. AOL and EarthLink were the giants in the business. NetZero launched in 1998 to disrupt the dial-up business. There is always disruption – someone coming along to offer it cheaper. Technically, disruption like this is arbitrage.

In 1999, the new kids on the block were the DLECs – Northpoint, Covad and Rhythms – flush with millions in IPO cash. They were chomping away at the T1 market with DSL, a technology that Bell Labs invented in the 1960s, but didn't use because T1 and sub-rate frame relay were very lucrative. All three DLECs filed for bankruptcy by the end of 2001, but DSL could not be stopped.

CLECs launched integrated T1 and in 2003 marketed it to the small business. This and DSL were cutting heavily into RBOC profits. The RBOCs (read: AT&T and Verizon) bought the assets of the DLECs and the IXCs (AT&T and MCI), while betting heavy on cellular.

In 1996, the Motorola StarTAC launched. In 1999, Nokia 7110 was released as the first mobile phone with a browser. Today, cellular is more than 60 percent of RBOC business.

DSL is an afterthought today. Cable modems are used for more than 60 percent of broadband deployments. DOCSIS 1.0, deployed in 2000, provided Internet access for MSOs. Today, RBOCs are talking about clipping the copper plant. They just want fiber and cell – and don't want to maintain copper for CLECs. IT

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

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SOLUTIONS FOR BUSINESS

MCPc Goes Wide

Most value-added resellers are moving to specialize in just a few areas. But MCPc Inc. is doing just the opposite. The Cleveland-based company is expanding the applications it addresses, and it's providing end-to-end solutions on these fronts. That's the word from Andy Jones, senior vice president of sales, who says the strategy is working well, given MCPc has seen double-digit growth in the last three years. MCPc provides cloud solutions, mobile device management, and virtual desktop environments. A leading VAR that's been around for more than 45 years, the company has practices focusing on the commercial mid market, education and health care. Its sweet spot is deployments with 500 to 5,000 users, although it's tackled far larger jobs. MCPc does business in 32 countries, although the bulk of its revenue comes from U.S. engagements. Cloud is a key focus for MCPc today. Just recently the company productized an offering called FlexCloud, which combines the benefits of private and public clouds. The solution touches everything from the endpoint to the data center – addressing application-level concerns, provisioning, security, and more. The gear involved in this solution can live at the customer premises, but MCPc can operate and even own that gear if the customer desires. Cintas is the biggest user of this solution. MCPc also supports virtual desktop environments, and as part of that can help customers acquire, monitor and manage these environments, including the endpoints.

BT Positions for Channel Growth

BT says its U.S. conferencing channel partner program experienced significant revenue growth over the past fiscal year, and that it anticipates continued growth in the program in the coming years – largely in the area of video managed services. "We believe we can more than double our reseller revenue in the next two to three years," says Tim Passingham, BT Conferencing's general manager for the Americas. "We have a unique mix of products and service that will enable us to continue to take market share and benefit from the overall growth in cloud-based collaboration services. I believe no other provider can match BT's video managed service expertise." Passingham estimates the overall conferencing reseller market opportunity is in the $450 million to $600 million range.

Veteran Talent Moves into the Zones

Zones Inc., an end-to-end IT solutions provider, recently announced key executive talent acquisitions from CDW, HP and Ingram Micro. Zones has realized exceptional growth over the last few years, reaching its $1 billion revenue mark in 2011. The company says its growth, combined with these hires, advances its position as a comprehensive national provider of technology solutions across areas of expertise including networking, security, software, storage, data center and virtualization. Zones' new hires include Mark Nehring, senior vice president, partner and product marketing (he was formerly vice president of national partner sales for HP); Jim Grass, vice president of public sector-state, local and education (he was formerly vice president of state and local government sales for CDW); and Anne Wilcox, chief marketing officer (she was formerly vice president of customer and solutions marketing for Ingram Micro).

Course Targets Cisco Channel Partners

Global Knowledge has announced the availability of a new Cisco course, ISE - Implementing Cisco Identity Services Engine Secure Solutions v1.0. Students in the five-day course will learn to install, configure, and deploy Cisco Identity Services Engine, a new flagship Cisco security product. The new course is designed for Cisco channel partners and field engineers seeking to meet the education requirement to attain Authorized Technology Provider status, which enables them to sell Cisco ISE. In enhanced hands-on labs, students will learn to perform a fundamental installation of ISE and they will learn to configure identity-based networks with 802.1X for both wired and wireless clients using Windows 7. Students will use the latest version of ISE 1.1 and have access to the Cisco 2504 Wireless LAN Controller running software code 7.2, providing features the earlier version does not.

Sonus Introduces Sonus Partner Assure

Sonus Networks Inc. now offers Sonus Partner Assure, which is designed to provide resellers of enterprise communications solutions with a comprehensive, turnkey program to sell channel-ready Sonus products and services. For resellers, key benefits of Sonus Partner Assure include complete training for sales and technical personnel, intended to create strong technology and product competency, while efficiently utilizing partners' time and resources; joint marketing consulting and support encompassing market planning, field engagement strategy, demand generation support and discretionary business development funds; no go-to-market conflict; and easy-to-use business and transactional tools that make it simple to access product information, design customer solutions as well as place and manage orders. Key components of the Sonus portfolio available for resale include the Sonus SBC 5200, which supports 64,000 sessions on a single server; and the Sonus SBC 5100.

Wyse and Rise Forge Partnership

Wyse Technology has joined with Rise to expand the provision of end-to-end cloud services through the channel for corporate and SME customers in the U.K. Through this new relationship, current Wyse partners will be able to utilize Rise's DataCenter on Demand product portfolio to provide business-class cloud services to their customers. Access to the Rise Infrastructure as a Service platform will enable Wyse resellers to install and run applications from the cloud for customers to access by Wyse cloud client computing solutions as managed end-to-end services.

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By Paula Bernier

It's Time for ITEXPO!

Austin, Texas, is a hotspot for the latest and greatest in technology, new music and delicious food. We hope to see you there this month for ITEXPO.

Judging from the show's past success, its soaring registration numbers, and the exciting lineup of speakers and exhibitors, ITEXPO West 2012 looks to be an especially strong event.

As of mid-August, attendee registration numbers for ITEXPO West and its co-located conferences were tracking 80 percent higher than last year with just seven weeks to go before the event.

"As ITEXPO Austin approaches, we're very pleased attendees are coming out to register, showing their support for the incredible educational program offered at ITEXPO and its co-located conferences," said Rich Tehrani, TMC's CEO and Conference Chairman. "ITEXPO is considered the best in the industry because of the high level of attendees, speakers, sponsors and exhibitors who participate. Participants have access to unprecedented education and networking opportunities at ITEXPO Austin."

ITEXPO West 2012, where you will gain new insight and learn about new products and networking solutions that will keep you and your company ahead of the curve, takes place at the Austin Convention Center. The event brings together enterprise, government and SMB end users, resellers, service providers, manufacturers, developers, media and analysts gather to examine solutions in conference sessions, demo products and services live on the expo floor, and forge beneficial relationships.

The event kicks off Oct. 2 with workshops and conference sessions, which run through Oct. 5. The exhibit hall is open Oct. 3 through 5. And keynote speeches are slated for Oct. 3 and 4.

Keynote speakers scheduled for ITEXPO West include Peter Blackmore, president and CEO of ShoreTel; Robert B. Carter, executive vice president of information services and CIO with FedEx; Raymond P. Dolan, president and CEO at Sonus Networks; Chris Hummel, chief commercial officer with Siemens Enterprise Communications; Huw Rees, vice president of business development for enterprise communications at 8x8; and David Tucker, vice president and general manager of the Small Business Unit at Cisco.

To give you a sampling of what to expect at some of the keynotes, Hummel aims to tackle the subject of unified communications. His speech will address the existing barriers to UC and how companies can overcome them.

Tucker, meanwhile, will discuss how small businesses can leverage new communications technologies to their benefit. "Small businesses are generally the first to ride the wave of change that technology transitions provide, such as cloud applications, bring your own device, social communications, mobility and IP telephony," notes Tucker. "It's about enabling the small business owner to do more with less people and fewer dollars. The trick to serving small businesses is providing very simple products to deploy and manage, with sophisticated functionality under the covers."

Dolan of Sonus will touch on a variety of hot topics, likely including the cloud, unified communications and SIP. "Vendors, analysts and users have all talked about applications such as unified communications or high-def, low bandwidth video for several years, but the promise has been unfulfilled for a number of reasons – with proprietary constraints, cost and complexity all near the top of the list," Dolan says. "The steady increase in the availability of SIP trunks and the clear demand by end users for an open, standard-based environment have finally ignited the move to SIP-based applications."

The ITEXPO Conference Program addresses a wide variety of topics and industry experts. Conference subject matter

includes big data, BYOD, cloud communications, collaboration, contact centers, E911, E-SBC, Microsoft Lync, mobile commerce, open source, SIP trunking, social media (including social CRM and the social enterprise), unified communications, Universal Service Fund reform, videoconferencing, VoIP, and more.

As if that weren't enough, TMC once again welcomes to ITEXPO a plethora of partners, which offer event attendees an even wider array of options for education and interaction. Co-located events include:
Asterisk 123
Cloud4SMB EXPO
Cloud Communications EXPO
CVx
Door64's Software Painpoint Job Fair
HTML5 Summit
Ingate's SIP Trunking-Unified Communications Seminars
LatinComm Conference and Expo
M2M Evolution
Megapath's MPLS University
Mobility Tech Conference & Expo
MSPAlliance MSPWorld
StartupCamp6 Comms Edition
Super Wi-Fi Summit
Telecom Reseller Week
Video World Conference & Expo

Asterisk 123 is an opportunity to learn about basic Asterisk installation, configuration and operation. Cloud4SMB Expo, meanwhile, addresses the unique needs and challenges of small and medium businesses seeking to leverage the benefits of cloud computing solutions. The Cloud4SMB Expo's platinum sponsors include cBeyond, Entreda Inc., GFI Software, GoToAssist, nGenX, Okta, R1Soft, Verio, Verizon, ViaWest, Vocalocity, and Zenith Infotech.

The HTML5 Summit, a DevCon5 event, provides web developers and designers with focused, educational sessions on technology developments, user experiences and trends. Topics include interactive multimedia animation techniques, the power of next-generation mobility and applications, new mobile web business models and retail strategies, gaming market developments, the impact of WebRTC, security threats and more.

The M2M Evolution Conference & Expo will include an event called The Battle of the Platforms, which is intended to highlight network platforms and how the migration to these new independent systems makes it economically feasible for all markets to adopt M2M. The Battle of the Platforms categories include Enabling Independent Applications Developer to work with M2M devices; Platform for Best BI Controls Solutions; Platform for Service Providers to support wholesale services; and Platform for Enterprise Deployment. "As Geoffrey Moore would point out, the life cycle of M2M has moved beyond the single solution and into economies of scale," says Carl Ford, founder and community developer for Crossfire Media, which puts on the M2M event. "We are excited not only to highlight the benefits of platforms but the breadth of opportunity as a result of wireless M2M becoming adaptive, economical and ubiquitous."

Mobility Tech Conference & Expo represents an expansion of the popular 4GWE Conference and features individual educational tracks focused on 4G/LTE and Wi-Fi. The event will delve into how today's powerful mobile Internet ecosystem expands the range of services and applications being delivered to businesses and consumers.

The future of white space spectrum is again the focus of the Super Wi-Fi Summit, which addresses all aspects of this market including spectrum issues, technical trial results and next steps, backhaul opportunities, database issues, devices, standards and more. Rick Whitt, director and managing counsel for Google, kicks off the conference at 9 a.m. Wednesday, Oct. 3.

Video World Conference & Expo helps attendees explore the opportunities for video through two comprehensive tracks: service provider and enterprise. Says Tehrani: "We have secured top industry experts to provide attendees with the latest in content delivery platforms, management solutions, implementation strategies and more – everything that's needed to make next-generation video a reality."

In addition to all of the educational and networking opportunities at ITEXPO West 2012 and related events, TMC and its partners also invite show attendees to join us on Wednesday, Oct. 3 at The Famous ITEXPO Conference Party. Sponsored by Conexiant, CoreDial, DIDXchange, OnSIP and Taqua, this party will feature the musical stylings of The Spazmatics. IT

By Paula Bernier

Keep It Up

The Cloud, Mobile, New Database Technology & VoIP Offer Business Added Reliability

Whether you're talking about a database or a voice system, keeping such critical systems up and running at your business is obviously of key importance. The good news is that new models and technologies on both the database and voice fronts are enabling organizations to better ensure that their information and employees are accessible even in the event of environmental, technical or other issues.

For example, TransLattice recently introduced a database solution that combines the scalability of the cloud, and the accessibility, performance and reliability of distributed computing.

Backup data centers can give organizations a false sense of security, according to TransLattice, which says that failover doesn't always work and recovery can be lengthy approach. A better approach, according to the company, is to do geographical distribution of data – including relational data.

"Global organizations can't afford downtime, period," says Frank Huerta, CEO of two-year-old TransLattice. "We have designed the TransLattice Elastic Database to provide reliable, high-performance and low-cost distributed computing to global enterprises. With TED, organizations can provide fast, cost-effective data availability to its users anywhere in the world, doing away with the need to federate data, while still complying with data location regulations."

Oracle and other databases today need to be within a few hundred feet of each other so they can share data very quickly, he says, adding that when they are placed too far apart latency becomes a problem. But the TransLattice solution doesn't care how far apart nodes are, the system will maintain thousands of transactions at the right time, in the right order.

TransLattice can allow users to add resources locally as required. These nodes are all autonomous and can be placed anywhere in the world, and they can share information between one another to provide network administrators with a global view of what's going on. The solution also comes with good data policy controls.

Huerta says it has "an intimate sense of where data is." For example, if there's certain data that can't leave Germany or data needs to be duplicated at least twice in Asia, the system can set and police those policies. And if a node goes down, the TransLattice solution prompts the network to re-establish operations and apply policies and users to that local node again.

John L. Myers, senior analyst for business intelligence at Enterprise Management Associates, says that geographically distributed and scalable databases are becoming important to modern organizations.

"Geographically isolated and incrementally expanded databases limit the devel-

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opment of business-critical applications by placing constraints on developers and administrators," says Myers. "Instead of focusing on the business problem at hand, companies instead focus on managing the limitations of a platform. Also, as Internet-based applications continue to gain prominence, poor end-user response time and customer experience can make the difference between success and failure, as can an economic investment in traditional database infrastructure that does not scale appropriately."

The next-generation database architecture being moved forward by TransLattice is much more flexible, says Huerta, who opines that this technology is going to be as big as virtualization. He predicts that in the next five years, 30 to 50 percent of organizations will have embraced this distributed database model.

"I think this is a major shift we're talking about," he adds.

Another major shift in recent years, and advancement on the business continuity/disaster recovery front, has been the introduction of IP telephony solutions.

As noted by Dieter Rencken, manager of IP telephony products at ShoreTel, the Internet is robust, self healing, and can work around points of failure. ShoreTel and its customers can leverage a lot of those benefits in their IP-based voice solutions.

Customers tend to look at their deployments in one of two ways, according to Rencken. ShoreTel supports both of them.

One is to take an approach that's highly distributed, in which every branch location has its own little piece of infrastructure. In this scenario, site resilience is important. If headquarters goes out, the branches should be autonomous and, thus, maintain phone operations.

The second model centralizes infrastructure in a data center or private cloud. In this case, organizations will want to implement failover between data centers, says Rencken. There's a lot of technology that addresses that; VMware vCenter Site Recovery Manager is one such example. ShoreTel has gone through VMware's certification program and has more than 2,200 customers running ShoreTel in VMware environments. ShoreTel's UC solutions, system management, voicemail, and other services "can run as a virtual machine quite happily in the VMware environment, says Rencken.

Other ways ShoreTel addresses business continuity and disaster recovery involve the reliability of its appliances that deliver dialtone, he says, which can be deployed in N+1 environments. In this model users can have just one extra voice appliance with ShoreTel vs. duplicating all the network elements, as some competitors require, he says.

SIP trunking is yet another way to add reliability and resiliency to a phone solution, he adds. If a SIP trunk goes down, he notes, it's fast and easy to just set up another SIP trunk with another service provider.

Another company that has been emphasizing the importance of business continuity in phone systems is iCore. As discussed in a past issue of INTERNET TELEPHONY, iCore has outfitted Vie de France with a voice over private Internet backbone; a comprehensive disaster recovery/preparedness plan, including the technology and procedures that would allow Vie de France to relocate completely to a disaster recovery center with voice and phone access if needed; and IP telephones from Cisco Systems.

The solution has the ability for the phones to be reprogrammed remotely, the ability for employees to save all voicemails based on project, voicemail-to-e-mail capability, smart routing of credit card transactions, the availability of a single company-wide directory, find me/follow me functionality, a streamlined 800 number setup, and faster response times to customer calls. Prior to implementation of this relatively new system, all credit card transactions had to be routed through corporate headquarters. Now credit card transactions go through the cloud, which has become the hub that intelligently passes information to the right locations. The cloud also enables standardization and ease of support for all retail sites from a central location.

Voice over IP, just by virtue of being an IP solution, is resilient because customers can back up their primary connections with a connection based on DSL or a cable modem, notes CEO Clark Peterson of Telesphere, a pure-play cloud services provider that uses the BroadSoft platform. Telesphere CTO Sanjay Srinivasan adds that when businesses go into backup mode, the set of services available to employees might not be exactly the same as the ones they have access to when the office is up and running. But, he says, if the difference in functionality is too large, that becomes a problem, as it can impact business operations. However, Srinivasan explains, if all the service intelligence is in the cloud and the IP network intelligence is on premises, then all the functionality remains consistent even when a business is using one of its back-up connections.

Another way businesses can allow for more flexibility and back up in their communications is by expanding their endpoints to include mobile devices, says Peterson. That way, customers have even more routes for connectivity. To enable that, Telesphere introduced Telesphere MobileConnect, which untethers employees while still providing them with broad, cloud-based unified communications, speed dial, call recording and other functionality, he explains.

Srinivasan adds that there's also a move in the industry to make mobile phones even smarter, in this case in terms of connectivity. Some endpoint manufacturers, he says, are beginning to use DNS as a tool to allow for seamless failover. Basically, in this scenario, intelligence would be embedded into the phone so if it's regular connection option is not available, it could automatically try a secondary connection, possibly a Wi-Fi connection in the area. Srinivasan says this isn't a new idea, but rather implementations of existing DNS work out of the Internet Engineering Task Force. IT

By Paula Bernier

One for the Records

Call Recording Captures Value for the Contact Center

In discussing call recording, the first thing that typically comes up in my interviews is how it helps companies comply with various regulations. But call recording offers a wide variety of other benefits, from helping lower call center employee turnover, to improving contact service rep training, to allowing for the capture and usability of information that can drive sales and customer satisfaction.

"Verint considers workforce optimization as a strategy to help customers manage their people, processes, and technology associated with the customer experience," says Roger Woolley, vice president of solutions marketing at Verint. "Call recording is a central component of WFO, because it helps organizations acquire large volumes of customer interactions designed to improve agent performance (people), gain insight into customer feedback (improve business processes), and use advanced applications such as speech analytics (technology) to drill down into specific customer trends and behaviors to drive actions to improve operational excellence across the enterprise."

The company's call recording software, part of its WFO solution, is available as a premises-based solution and is now offered on a hosted basis through strategic partnerships.

Slowing Turnover, Improving Training

According to the 2011 U.S. Contact Center Compensation Survey from benefits consulting firm Mercer, 3 percent of call center employees leave after 30 days of employment, 31 percent within the first 90 days, 18 percent within the first six month, and 37 percent within the first year. More than 1,200 contact centers responded to the survey. However, at least one study, this one a 2005 effort out of Cornell University, has indicated that high involvement can help reduce turnover.

Accurate Always Inc.'s Chief Marketing Officer Kate Haley agrees, saying the company's Voxida call recording platform aids on that front by providing call center supervisors with the tools they need to collaborate with agents quickly and effectively, and provide them with real-life examples during training. Sometimes organizations listen to recordings after the fact, and sometimes they use them in real time. The usual scenario involves supervisors checking out calls at set times, commenting on those recordings, and sometimes sharing that with agents to help with training or award good performance, which can help reduce agent turnover, she says.

"Morale makes a big difference in an industry that has as much turnover as call centers do," she adds.

The ability to leverage this information in real time is also very helpful, she continues. "Being able to immediately access those calls and share them with the agents is a huge time saver, which a contact center can leverage to increase profits, while controlling costs," she says.

Leveraging Calling Information

Intelligent archiving and analytics are also becoming important aspects of call recording in the contact center, says Patrick Hall, chief marketing officer at CallCopy, which offers its Discover solution via perpetual on-premises licenses, on-premises installations based on subscriptions, and a SaaS model.

If you think about just recording, he says, there traditionally has not been a lot in the way of archiving logic, he says, adding that CallCopy delivers on that front. He also notes that with deskop analytics and APIs, CallCopy can do more advanced things beyond just logging a call. For example, the company has several health care clients that have elected to store records by patient record number. Hall says you won't get that flexibility from other solutions.

In terms of analytics, Hall says more companies are starting to get interested. Most users are doing 100 percent recording because hardware for storage is becoming so cost effective, he says, so they have an interest in leveraging that data to a greater extent. Hall adds 10 percent of CallCopy customers use its speech analytics solution, and that as processors become more affordable that will scale. The level of call recording and analytics is only expected to grow as there's more storage in the cloud so customers have somewhere to put their recording long term. CallCopy expected to launch a call recording storage in the cloud this September.

Adding to the topic of call recording storage and archival, Haley of Accurate Always says that most people have really not planned for what they're going to be doing with this huge amount of data. Even mid-sized call centers are concerned now about big data, she says, so Accurate Always is being called on to offer a more intelligent means to capture but also to archive data and to filter it for future use and make it accessible.

Accurate Always does that by maintaining all of the call metadata, she says, explaining that metadata acts like a card catalog the customer can use to play back call recordings. By comparison, she says, some competitors archive all associated information, so to find the call the client has to reload the data (which ideally would be archived on network-attached storage, but sometimes might be on a DVD or even a reel-to-reel tape) to search it.

"The problem with that is you have to find that recording and just listen to insane amounts of tape because they didn't have an intelligent way to find that," she says.

Capturing Screen Data

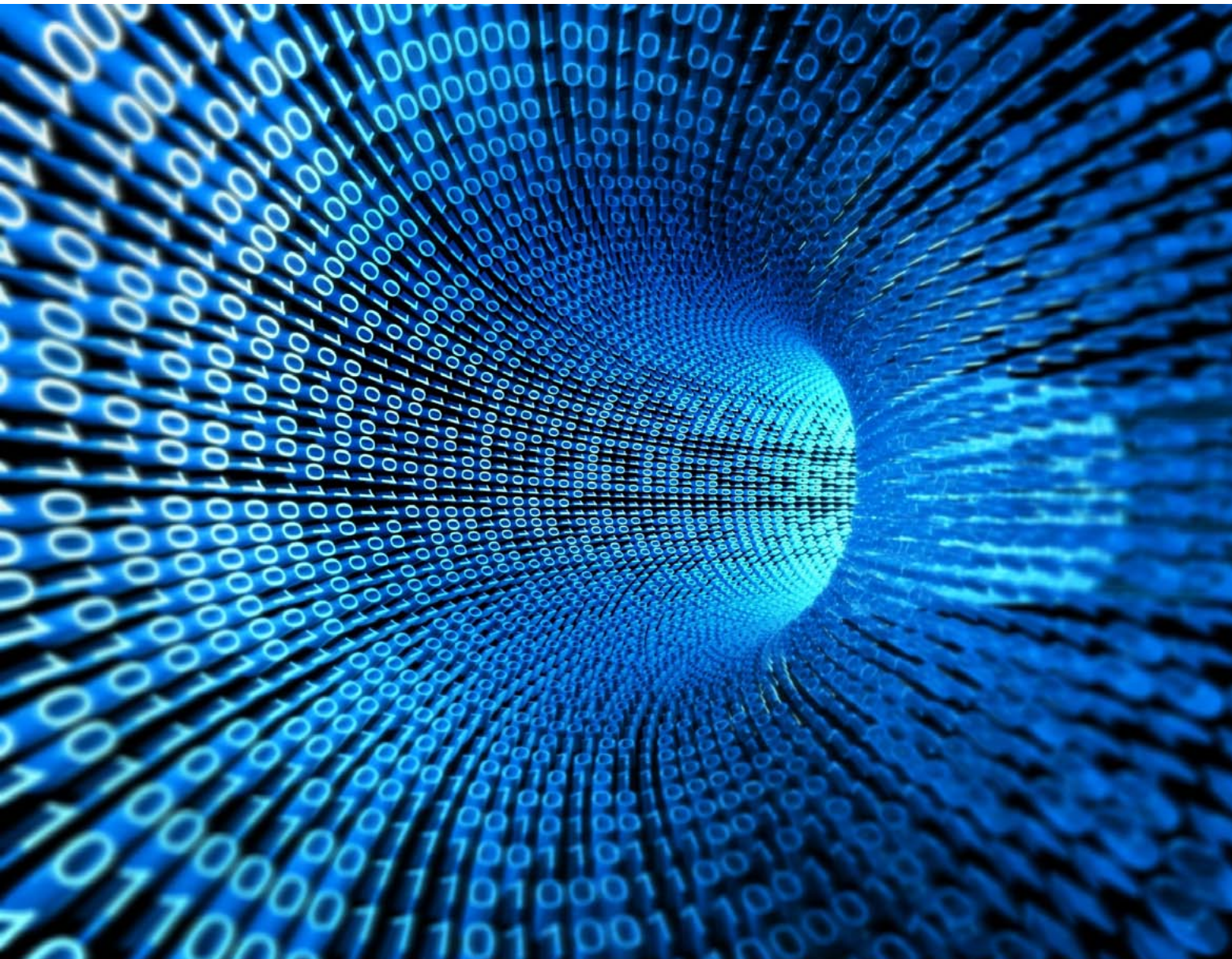
Screen activity has also come center stage as a quality management tool. In fact, Andy Kim, CEO for Proxy Networks, says it is now the most important quality management tool, as noted in a recent TMCnet story.

To enable solutions on this front, Proxy and SIP Print have joined forces.

"Our involvement with SIP Print emerged a couple of years ago when SIP Print started to pick up momentum because they approached voice recording from a different perspective," Kim said, adding that rather than picking up calls from the queue as issued from a switch, SIP Print records calls as they were coming into the switch to deliver a real-time solution.

Meanwhile, Proxy has highly efficient bandwidth-optimized technology for capturing screen data, turning it into video, and sending it across the network so someone else can log in and collaborate while viewing another's desktop, notes the TMCnet piece. This technology is primarily used for remote support and remote access, and for members of the IT department who need to fix a worker's computer or install software.

"For quality management and auditing purposes, call centers are more and more interested in having a record of what has been going on on the screen," Kim said. "There are a lot of ways to capture one screen, but not a lot of vendors who can support a scalable solution for hundreds of screen recordings going on at once." IT



Ixia Closes on Anue

Anue Systems Inc. this summer was at Cisco Live talking about how its recent acquisition by Ixia allows the parent company to outfit enterprise and service provider network operators with tools that help them understand the performance and network impacts of various applications – from pre production through launch and beyond. Ixia on June 4 announced it had completed the acquisition of Anue Systems. Anue is known for its network visibility solutions, which are used for network monitoring in live networks. Ixia, meanwhile, traditionally has played in the test and measurement space relating to application and network performance in pre-production, or lab, environments. Together the two companies can deliver more end-to-end solutions, Larry Hart, vice president for marketing and strategy for Anue, told INTERNET TELEPHONY at the event in San Diego. He added that now that Anue is part of Ixia, the smaller company is able to deliver global sales and support around its offerings. Anue is now known as Ixia's network visibility group, but the products will be marketed under the sub-brand Anue, Hart said.

GENBAND Expands S3 SBC

GENBAND now offers expanded hardware options for its S3 SBC. The new S3 1000, in a 1 rack unit form factor, provides a cost effective solution for smaller deployments supporting highly distributed or low density specifications. The company says it is ideal for smaller carriers, large carriers with remote points of presence, and the growing enterprise SBC market. The standard 2RU S3 2000 SBC utilizes the latest in Intel computing and Cavium network processing chipsets and provides what the company says is exceptional scalability with the price/performance advantages of standard COTS components. The 1U and 2U hardware form factors join the S3 GENiUS ATCA platform, which can deliver multiple applications from the same chassis.

Fujitsu Notes Its Innovations in Optics

The U.S. Patent and Trademark Office approved 77 patent grants in 2011 from Fujitsu Network Communications. That was 35 more than the company receiving the second most, and counting since 2006, gives Fujitsu 140 more than any other optical technology provider. Some of those patents were awarded relating to the company's work in ROADM, 400G transport and OTN switching technologies. Each year, Fujitsu invests more than $2.8 billion in R&D.

Paessler Highlights Continuous Rollout Model

Germany-based network monitoring outfit Paessler recently unveiled its continuous rollout model. Thomas Timmerman, vice president of business development in North America for Paessler, explains that in the past the company introduced just one software release each year. But when you introduce a bunch of new functionality all at once, he adds, it's hard to ensure software stability. So now, with the continuous rollout model, Paessler introduces updates to its software much more frequently; just how frequently customers get those updates, however, is up to them, he says. Paessler customers can opt to be part of what is known as the canary channel. That means, like canaries in a coal mine, they are invited to be among the first to test a new release (in their non-critical applications, of course) and urged to assist Paessler in identifying issues with the release. The preview channel, meanwhile, gets a more mature but still unofficial release of the software. And the official release group gets releases once they're "very very stable," says Timmerman, but those are still released much more frequently (every few weeks or months these days) than in the past. The company's product is called the PRTG Network Monitor.

Ericsson Offers Data Traffic Stats

Ericsson's second Data Traffic Report reveals that in North America the total number of mobile subscriptions in first quarter of 2012 was around 330 million. Another 160 million are estimated to be added by the end of 2017. LTE showed the strongest growth in North America, and by 2017, according to Ericsson, LTE will be the dominant technology with most high end users. Douglas Gilstrap, senior vice president and head of strategy at Ericsson says: "Today, people see access to the Internet as a prerequisite for any device. This mindset results in growing demand for mobile broadband and increased data traffic. Operators recognize this business opportunity and are aiming to facilitate this growth and provide good user experience with fast data speeds through high capacity networks. Today, around 75 percent of the HSPA networks worldwide have been upgraded to a peak speed of 7.2mbps or above and around 40 percent has been upgraded to 21mbps."

QualStar Gets into the Zhone

Zhone Technologies Inc. has a new MXK deployment with QualStar Communications Inc., which is a sister company to MetaLINK Technologies Inc. The new FTTx deployment will support delivery of more affordable and reliable high-speed Internet access, VoIP and eventually video services to MetaLINK's subscriber base. "Zhone's effective network management capabilities were key factors in our decision to deploy the MXK platform," says Phil Maag, president at QualStar. "The increased performance, density and scale, and the zNID ONTs addressed our network complexity and challenges such as providing a competitive solution in a market saturated with providers. This new fiber network with AE allows us to provide advanced communications and connectivity to our customers."

Gigamon Extends Life of Network Tools

Intelligent traffic visibility technology like that offered by Gigamon can enable companies to extend the life of their tools related to analytics, forensics, management, monitoring, and recording. That's the word from Paul Hooper, Gigamon's vice president of marketing. Gigamon's intelligent traffic visibility solutions are marketed under the name GigaVUE and come in the form factor of appliances. These appliances can be installed between the network and tools like those offered by Opnet, for example, to give users an end-to-end view of what's happening. Gigamon recently introduced a new, smaller form factor chassis, a high density solution (320gig per slot now), a traffic aggregator, time stamping (so as traffic comes into the fabric it's stamped), and a virtual machine implementation.

By John Sung Kim

BYOD & IPv6

The Secret to Providing a Secure Network

Some network security engineers are already calling BYOD bring your own disaster. With the proliferation of Internet-connected mobile devices that consumers and employees alike use to access public and private networks every day, the bring-your-own-device trend definitely impacts the data center in unforeseen and potentially very damaging ways. In fact, the millions of iPads and smartphones used daily in college and corporate environments are willing conduits for attack – if you are not thinking ahead.

Spammers are gearing up for a field day as 2^128 – or more than 170 undecillion – new IPv6 addresses come online. Opportunities to take advantage of the complex dual-stacked IPv4 and IPv6 network abound.

Spoofed addresses are potential vulnerabilities for both IPv4 and IPv6 networks, especially if router interfaces are not configured correctly. As an example, whether or not your v4 network has the correct ACLs in place, if v6 is on without the same level of ACLs, it's an obvious attack vector.

Even v4-only networks could have IPv6 devices up and running with self-configured v6 addresses from new servers, desktops and mobile devices that automatically turn on and configure IPv6 out of the box. Completely unknown to most network administrators, these IPv6-enabled endpoints can also serve as attack vectors for other internal targets or as conduits for off-premises and phishing style attacks.

With only a small amount of IPv4 space left for allocation, the cost of using a single IP address will come at a premium. This means even more services will start to be stacked behind a single v4 address, providing attackers with a convenient single point of access to multiple attack vectors and many hosts. With IPv6-enabled hosts, the malicious code or intruder will be able to spread easily to multiple other hosts on the same subnet, increasing the size and scope of attacks – even if they are in private (RFC 1918) IPv4 space.

The secret to providing a secure network is knowing exactly where your IPv4 and IPv6 addresses are, what they are being used for, and by whom. Network administrators that rely on managing IPv4 and IPv6 addresses with spreadsheets will fail because that methodology is simply no longer tenable in a complex v4 and v6 network environment.

Having an inventory of the unused pools of v6 addresses – and the devices that are correlated to them – is key to preventing v6-based network compromises. It is also crucial to have the ability to audit activity around your network address space and have the forensic capability to gather information should a security incident occur with any IP management.

Understanding and mapping a network, its IP addresses and its devices requires a deep, constant scan with an IPAM tool that continuously assesses its activity and health. However, scanning IP addresses in an IPv6 environment is completely different than scanning IPv4. A common allocation for an endpoint can be as large as a /64 of space. So, while you may only have one or two hosts, the address space itself is over four billion times the size of the current IPv4 Internet. This makes conventional IPv4 scanning techniques obsolete in an IPv6 world.

Surprisingly, most IP address automation software cannot actually detect v6 addresses on a network or accommodate the volume of IPv6 addresses that have to be accounted for. Most legacy IP address management applications simply correlate a v4 address to a v6 address as an add on, creating an almost artificial v6 address to claim a dual stacked environment. Unfortunately, this does not provide an accurate inventory of all the v6 addresses that may sit on a network and may even obfuscate the security aspect of tracking the addresses. The network administrator may not even realize the need for additional IP intelligence for IPv6 network management.

The secret to providing a secure network is knowing exactly where your IPv4 and IPv6 addresses are, what they are being used for, and by whom.

Most IPAM software is a UI interface based on spreadsheets, which in v6 simply won't work to manage security concerns. With current IPAM solutions, managing and tracking v6 addresses will require a 5x to 10x increase in time to manage and track network assets – not acceptable in an age where network engineers are being tasked with managing an ever increasing amount of BYOD devices and traffic on their networks.

With the widening deployment of IPv6 and the increasing trend toward BYOD,

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By Michael Hamelin

Understanding the Challenges and Opportunities of Next-gen Firewalls

Next-generation firewalls have come a long way in a relatively short period of time, building on the evolution of application firewalls, which have started to feature ever-more complex rule sets for standard services, such as sharing services.

The next-gen firewalls have the advantage that they support application firewall features that rely on mandatory access control, or MAC, also referred to as sand boxing, in order to protect vulnerable services. Against this backdrop, it comes as no surprise to learn that Gartner predicts that spending on the management of next-gen firewalls is expected to grow to 35 percent of total firewall spending by the time 2016 rolls around.

A number of firewall vendors, notably CheckPoint, Cisco, Fortinet, McAfee and Palo Alto Networks, have either developed or are developing their initial range of next-gen firewall offerings, with Palo Alto seen as slightly ahead of the industry with a unified single-pass inspection engine. This approach differs from the industry standard methodology in terms of taking a unified single-pass approach, rather than handing IP traffic flows over to a series of sub-modules.

While some observers view this move as logical, given the hybrid nature of current security threats against the corporate IT platform, most experts agree that the resultant firewall technology throws up a number of challenges, not least of all on the regulatory front.

In the U.S., for example, FISMA – the Federal Information Security Management Act of 2002 –recognizes the importance that IT security represents to economic and national security interests, and requires each federal agency to develop, document, and implement its own program to provide IT security to all aspects of their operations. It is worthy of note that FISMA mandates agency program officials, chief information officers, and inspectors general to conduct annual reviews of the agency's information security program and report the results to the Office of Management and Budget. Put simply, FISMA mandates a stringent burden of annual security reviews, and by implication security plus governance audits, on public sector IT security professionals in the U.S. And the act is very specific in what it requires.

Meeting those needs is no mean feat because, even as far back as 2005, there were problems meeting these requirements. A 2005 report from Intelligent Decisions flagged the fact that U.S. federal CISOs saw increasing software quality assurance as the No. 1 area on which the private sector needed to focus, and pointed directly at ongoing issues surrounding the quality of software.

Among other areas, the study highlighted the issues surrounding network compromise, patch management, and FISMA compliance as major concerns that keep federal CISOs awake at night. In what many now view as a prescient report, the 2005 study highlighted unauthorized wireless access points, preventing unauthorized wireless deployments, and rogue Wi-Fi devices as being among the major wireless network security concerns.

And it's not just FISMA compliance that causes potential headaches for IT security professionals. The rising tide of compliance required by the Payment Cards Industry Data Security Standard – version 3.0 of which is expected to be announced later this year, which is imposed on organizations that process card transactions from clients, is increasingly being viewed with concern. The PCI DSS standards were developed by the major credit card companies as a guideline to help businesses that process card payments prevent credit card fraud, hacking and various other security vulnerabilities and threats.

Retailers wishing to continue accepting cards, and who are notified they are within the scope of PCI DSS, must validate their compliance on an annual basis. The validation is normally conducted by auditors – registered PCI DSS Qualified Security Assessors – although smaller firms have the option of using a self-certification questionnaire. While the PCI DSS governance rules are great as a basic audit benchmark for retailers, the real problem facing retailers is their failure to invest in IT security.

If we go back 15 years or so, experts were advising firms to spend between six and eight percent of their total IT budget on security. In fact, it turned out that most firms only invested around two percent of their budgets on this, and the industry is now reaping the results of this IT security under funding.

While PCI DSS clearly has its place in the overall security picture, it is my belief that effective governance and compliance comes down to taking a holistic view of your security needs, and too many companies fail to do this. What many firms overlook is the fact that installing extra security can also reap benefits in areas other than simply preventing fraud. It can also improve overall business efficiency, which is positive for every company.

Delving into the complexities of the PCI DSS v2.0 standard reveals a number of control objectives, and detailed in the 12 main category requirements is the requirement to install and maintain a firewall configuration to protect cardholder data – as well as encrypting the transmission of cardholder data across open, public networks such as the Internet.

The audit and governance functions are covered – in part – by the need to regularly monitor and test networks, as well as to track and monitor all access to network resources and cardholder data, rounded off by the need to regularly test security systems and processes.

So far, so good on the governance front, but there is a school of security thought that an annual audit may no longer be enough to fully meet the provisions of PCI DSS v2.0 – and with v3.0 of the governance standard bearing down on us at high speed, there

is an increasing awareness of the need for continuous security audits.

These audits, by implication, must be carried out using an automated platform, since any manual audit can only represent the state of a system's IT security at a given point in time.

An automated security audit and governance function – working quietly in the background – is not only good for compliance and defence purposes, but it also prevents the audit function from interfering in the efficiency of the organization's core business.

The danger with this strategy is that the regulations start to impede the day-to-day efficiency of the business.

My belief is that policies should be both detailed and easy to understand – and should also balance enforcement against productivity. If a security policy starts to impede productivity, then it is, by all conventional definitions, not a good policy, especially if it is misinterpreted by employees.

A classic case of this is the Data Protection Act in the U.K. How many times are U.K. consumers told (incorrectly) that a certain request they have made cannot be completed because of the provisions of the act? In some cases the act's legal restrictions are understandable, but in many instances there is a clear misinterpretation of the provisions of the legislation, leading to employee actions that at best reduce their efficiency and the level of service they offer to customers.

When it comes to IT security, there is a danger that people tend to `over-tech' most interactions with computers, resulting in the technology usage being more detailed than it actually needs to be. An example of this is where IT security professionals will often refer to a computer audit, rather than a computer-assisted audit, which is the correct term for automated IT audit functions.

Tapping the power of an effective security audit technology that supports a rage of both automated and predefined reports means that IT security professionals can get on with the task of efficiently managing the security of the IT systems in the background, but without impeding the efficiency of their colleagues elsewhere in the business.

This is particularly important when it comes to the generation and the use of `what-if' reports that automated firewall management technology thrives on, as they can then be used to develop effective risk analysis programs. IT

Michael Hamelin is chief security architect with security policy management specialists Tufin Technologies (www.tufin.com).

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IP address management needs to evolve into IP address automation and take into account v6 security needs as part of its base architecture. Automating IPAM eliminates the labor-intensive, error-prone manual tasks involved in reassigning Internet protocol addresses. In order to effectively manage and host devices within these large address ranges, DNS and other name services are crucial to ensuring that network policies are enforced while still allowing the level of discoverability required by endpoint devices. IT

John Sung Kim is co-founder of 6connect (www.6connect.net).

By Dominic Saunders

Security Awareness – Once is Never Enough

Unless IT security is a core element of someone's job, it is not necessarily considered an on-going development need. All too often employees get just an initial presentation from the IT department when they start and are expected to remember it, keep up to speed with changes, and adhere to ever-changing IT security policies and procedures.

Without an ongoing systematic and proactive user awareness program, a strong security posture is in jeopardy. There is no cure for stupidity or genuine human error, but you can educate your workforce to help employees make the right decisions and avoid unnecessary mistakes.

You probably hand your employees a 20-page dossier and expect them to read and digest it. The problem is that most IT security policy and procedure manuals are written in a language to impress the regulators, lawyers and auditors who will be checking its existence. The average employee doesn't stand a chance.

Even if your document is re-written in plain English and everyone has been given a copy, however, that's probably inadequate. Staff members need multi-sensory input if they're going to fully appreciate relevant policies and procedures and understand exactly what their responsibilities are. If you expect them to play their part in protecting the organization, don't they deserve to be shown how to do it? Online videos and interactive training that can be viewed at their convenience do the job very well.

Also consider that an employee's ability to take appropriate actions if, and when, a security incident arises is paramount. Think about your team – if anyone in your organization were to discover a breach, would they know what to do? If it were something they'd done that had caused the problem, would they put their hand up and come clean or try to cover it up?

Making sure employees understand the risks of leaving any security breach unreported and are not scared of reporting potential issues is of paramount importance.

If you're serious about creating awareness among your workforce to the security risks that organizations face, here's a seven point action plan:

Action 1: Rewrite your IT security policies and procedures. Use a language that will actually be understood, and not just impress an auditor. Spell out the risks the organization faces for non-compliance.

Action 2: Consider changing the way you introduce security as part of the induction process. Smaller, more manageable documents are easier not only for the recipient to grasp, but also for the organization to review and update. In addition, by drip feeding the information, people are more likely to find time to read it and build a deeper awareness of security issues while reinforcing elementary security fundamentals.

Action 3: As previously mentioned, review and update processes regularly and that includes regularly reminding your colleagues. Just because John in accounts had a security briefing when he joined the company 10 years ago doesn't mean he knows what the risks are today. Educate staff members, regularly, to make sure they still understand what's expected of them and especially when things change.

Action 4: Consider using an automated system to deliver policies and associated documentation directly to employees at their workstations. This makes the whole process manageable for you both.

Action 5: Introduce testing, either for all or a proportion of users. This will help to identify where policies aren't understood so they can be rewritten to make sure everyone knows what they are doing and, as importantly, why. You'll also be able to identify weaknesses and therefore focus training energies to the necessary areas.

Action 6: Get your employees to sign up to key policies so you know that they're onboard. As part of the process, include the consequences if they break the rules. That said, make sure that they understand that genuine errors are expected and should be reported, not ignored or covered up.

Action 7: Take action against offenders. If people see policies being enforced consistently at all levels within an organization, and where appropriate disciplinary action is taken against those who wilfully neglect corporate rules, people are more likely to take notice of security information. When employees realize the circumstances and the consequences of security policy violations for them as well as for the organization, it nudges them to choose the right course of action, and perhaps be more prepared to encourage others to conform to standards of behavior within the acceptable governance framework.

At the end of the day, you're all in this together and every single person in your organization needs to understand the part they play in defending your organization and keeping it secure. IT

Dominic Saunders is senior vice president of the NETconsent business unit at Cryptzone (www.cryptzone.com).

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By Paula Bernier

Cicero's Garner Offers a Wealth of Knowledge about the Evolving Customer Experience

IP-based communications, social media, and mobile communications are significantly changing the face of the contact center and the customer experience at large. To learn more about the changing tide, INTERNET TELEPHONY recently spoke with Mike Garner, chief customer officer with Cicero Inc. Prior to joining Cicero, Garner founded and was the president of SOAdesk, a customer service technology company that was acquired by Cicero in January 2010. He also led more than 7,000 service reps to record-setting revenue, client satisfaction and profit marks over his operations career at both Verizon and Afni.

What has been the most important development in the customer contact/customer experience space in the recent past?

Garner: I would say that real-time intelligent service delivery (SOA delivered) is a recent development. That's squarely where we play by the way. One-click access to information, safe delivery of everything a remote worker needs on any device or automating the filling out of forms in the insurance space (huge time saver for the employee and customer, etc.) are a few examples.

How have IP-based networks impacted the call center – customer interactions at large?

Garner: It is providing cheaper communications such as having one line versus two. I recently spent some time with the CIO of a call center company with 600 agents, and he literally has everyone using Google voice for their phone system, an unreal cost and ease advantage and the reporting is coming along to enterprise grade. [That's a] pretty strong inflection point, perhaps where the barriers to exit from some locked in/proprietary networks and carriers and suppliers starts to get pretty low. It puts the customer back in charge.

Speaking of customers being in charge, how is the widespread use of social media impacting customer care and engagement?

Garner: Customers get informed and inform without direct help/investment on the part of the company more and more. You need to get Q and A out there, so it finds its way into the communities where the customers are. Facebook or Twitter updates are good. People will find the updates on a Bing or Google search easy enough. Put it out; they will find it.

How is marketing changing?

Garner: I think it's more about helping customers find answers, understand options and allowing them to understand why you're in business versus just what you happen to offer. It's not changing fast enough. Don Peppers, who sits on our board of directors, just came out with his new book called Extreme Trust, in which he discusses how building trust should be the cornerstone of any valuable marketing program. Look at Coca-Cola's linked and liquid marketing YouTube videos. They actually explain how and why they market like they do. Total transparency. Very cool. In Simon Sinek's Start with Why, he writes that people don't buy what you do, they buy why you do it.

How is CRM changing?

Garner: One has to understand that CRM is not about having a million points of light/data about me or each customer. It's about being able to get at/use/deliver better experiences and value based on that information. It's more about analytics and real-time delivery of only the relevant data to the employee and customer.

What new tools and practices are businesses using to better leverage their own and/or outside data to target, engage, and deliver to the customer?

Garner: Integration is the key. You can't wait for the re-write to web/mobile. It shouldn't matter where data resides, just that you can get to it, shape it, and repurpose it fast for use in context to what the customer and/or the businesses/employee is trying to accomplish.

This is the very reason we exist – disparate systems. There is good logic built into many of these applications/systems already, but there is no data sharing, or it's limited. These walls create painful disconnects that prevent 100 percent first time yield, shorter times to resolution or accurate decision support – both in self-service and employee-assisted channels.

Decision support tools such as IBM's Watson or Convergys' Dynamic Decision use the CRM data and the real-time inputs from an interaction or online interaction to provide the best options for customers and employees. This is why Amazon service delivery rocks – personalized recommendations in a blink. Zappos advertisements are personalized to your last visit with them online in ads on other sites you visit elsewhere.

One of the prerequisites is that you need to get at all the data and deliver data integration. You need to infuse that data with logic/intelligence and then you need to present that best next action, question to ask, action to take to the employee or customer in real time and in an easy to use format. IT

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AT THE SPEED OF IDEAS™

By Paula Bernier

Cloud Continues to Gain Strength

A recurring theme as it relates to cloud communications has to do with the resiliency and reliability of the cloud. Indeed, INTERNET TELEPHONY's own cover in July of 2011 asked the question: Can We Trust the Cloud? The answer was, and is, that the cloud is just as reliable – in fact, probably even better – than other forms of IT delivery.

Cory von Wallenstein, chief technology officer at Dyn, in a recent interview with this magazine noted that no one is afraid of using Salesforce or other cloud-based solutions, and he added that cloud technology will only continue to go deeper in the market as time moves on.

North Bridge Venture Partners in June unveiled new research in which 50 percent of respondents stated their belief that the cloud makes sense even for their most important business applications.

"Our second annual survey has revealed that companies are growing increasingly confident in the cloud," says Michael Skok, partner at North Bridge Venture Partners. "While agility and scalability continue to be primary drivers for cloud adoption, IT decision makers are beginning to trust the cloud with more mission-critical applications like eCommerce. Furthermore, the identification of 'cloud formations' around the hottest business trends including big data and analytics by both vendors and IT decision makers alike highlights new opportunities for cloud."

A recent Host Analytics/Dimensional survey, meanwhile, indicates that CIOs are bullish on the cloud, with 92 percent expressing an understanding as to its business benefits. Additionally, 67 percent of those surveyed said cloud technologies help IT deliver better systems for less money, and 62 percent said SaaS applications give business stakeholders more ownership of key applications. Breaking it down by department, IT folks are the most excited about the cloud, with two thirds of them saying cloud offers financial benefits. About a third of those in sales and customer support are also keen on the cloud, according to the survey.

Already some of tech's major businesses like Twitter and Zynga rely on cloud infrastructure, said the CTO of Dyn, whose customers include such well-known brands as Etsy, Pandora, Twitter, and Zappos.

Twitter had been looking to build a data center and aimed to put all of its infrastructure in that one location in Utah, but the company couldn't route enough power for that one site. As a result, Twitter had to instead put that infrastructure closer to users around in the world, and cloud technology allowed them to do that.

Zynga, meanwhile, is leveraging its own cloud infrastructure to run its core business, and uses Amazon's cloud to test new ideas. If new applications and features go viral, Zynga then moves them over to its own cloud infrastructure.

A website called CloudBlueprint reports that "Zynga uses Cloud.com (now owned by Citrix) for its private cloud infrastructure, as well as RightScale as a management layer that makes for a uniform experience in terms of managing both public and private resources." The piece goes on to say that "Amazon's EC2 cloud lets Zynga scale elastically and determine average traffic load and other metrics, so that it can optimize its internal infrastructure for each game's specific needs." IT

By Gina Nomellini

Getting the Most out of Managed Services

Cloud services, mobility, security – these trends pose some of the most significant challenges facing IT departments today. For enterprises looking to effectively and efficiently navigate this complex and changing landscape, turning to a managed services provider may well be a strategic choice.

A MSP manages network-based services, equipment, and applications on a customer's premises, or, in its own facility, with service delivery over the company WAN and LAN. Service level agreements are established to meet the company's unique requirements and offer specific guidelines that the MSP must meet to provide transparency and ensure that the company is receiving the service that has been agreed upon.

Making the move to managed services – whether network services, hosting and storage, or security services – is not a new proposition for today's enterprise. However, with the advent of new technologies, the rapid increase in volume and sophistication of big data and applications, as well as shifting enterprise IT business models from capex to opex-based scenarios, there is more urgency to take these non-core tasks outside the enterprise. Managed services free a company's IT department from maintaining and managing infrastructure on a 24x7 basis, and regularly investing in new equipment, training and support personnel. The benefits carry throughout the value chain and are circular in nature: With an IT staff better able to focus on more strategic tasks, customers can avail themselves of more innovative services and experience less downtime, which results in higher loyalty and profits for the company.

With forces such as cloud computing beginning to cause disruption in some managed services such as traditional managed hosting and storage, enterprises need to examine their managed services investment strategies and determine which provider can best serve their requirements now, and in the future. In short, their MSP should have the capabilities to be a long-term partner, not merely a provider.

This partnership is particularly imperative in a managed network services relationship, as the network continues to become a focal point for IT, due, at least in part, to the rapid proliferation of applications and the network's key role in application delivery. Enterprises are fighting a difficult battle – overtaxed bandwidth, managing diverse networks, and the costs and time that their in-house teams have to devote to these tasks. Efficient, high-quality delivery of geographically dispersed, latency-sensitive applications, such as bandwidth-heavy videoconferencing, continues to be a significant challenge.

Managed network services can provide enterprises with a host of invaluable benefits. Most obvious are the cost savings, resource efficiencies and consistent performance that management of both their WAN and LAN can deliver. But perhaps the most critical differentiator the right partner can provide is guaranteed, high-quality application delivery. Faced with an increasingly global supply chain, and diversity in latency requirements across application types, choosing a managed network services partner who can meet these needs is key. The right partner should employ specific strategies that include locating applications as close as possible to the end user to minimize latency and applying consistent QoS to priority and real-time applications, in addition to providing an application-based service level agreement, not merely a network-based one. IT

Gina Nomellini is chief marketing officer with One Source Networks (www.onesourcenetworks.com).

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CommScope Discusses Energy Management

Energy management is a hot topic when it comes to the data center. That shouldn't come as a surprise, given that data centers are notorious for their thirst for power. Of course, the energy management discussion goes beyond just the data center; it also applies to network endpoints like PC and desk phones, office lighting, heating units, and more. And CommScope says its intelligent solutions can help companies better understand and manage their energy consumption across the board. Cisco EnergyWise, CommScope and Cyber Switching together offer a solution to enable organizations to manage their consumption of both IT and non-IT gear, explains Nathan Benton, CommScope's director of technology marketing. The piece of this solution that CommScope brings to the table is the SYSTIMAX iPatch Intelligent Infrastructure Solution. It provides users with network visibility so they can track in real time the physical locations of all networked devices, such as desktop and laptop computers, wireless access points, IP phones, IP cameras and more. By using the solution that pairs iPatch location information and EnergyWise power management, companies can reduce energy consumption. Benton says that this solution appeals not only to IT types, but also speaks to the concerns of facilities managers at large businesses.

Emerson Hawks Data-Center-in-a-Box

Data center power challenges are becoming even greater given the adoption of cloud environments and virtualization technology, says Steve Blakemore, who handles business development, marquee and solutions for Emerson Network Power. As data centers become both more complex and more flexible due to these technologies, there's also a greater need for customers to better understand what capacity is needed, and when, for which applications. They also need to get a handle on what power and cooling requirements all that will entail, he says. Emerson, which has solutions that span the spectrum of powering and cooling, can help data center operators with that, Blakemore says. He adds that if businesses can save even one kilowatt of power, which is not much, it can make a big difference in their costs over time. One product Emerson Network Power offers is SmartRow, a data-center-in-a-box solution. It's designed for the SMB market and large enterprises that might need a handful of racks in a remote location. So, instead of investing in a whole room designed for data center gear, this solution provides a business with a prepackaged environment with climate control, monitoring and control, a UPS, a fire suppression system, and other features found in a data center environment.

Legrand|Ortronics Goes to Layer Zero

Legrand|Ortronics thinks the OSI model is missing an important piece – the physical infrastructure that consists of things like cable management solutions, data center cabinets, and the like. The company calls this part Layer Zero. One of Legrand|Ortronics' newest Layer Zero solutions is the Mighty Mo Fiber Raceway. Mighty Mo Fiber Raceway is a fiber optic container that looks kind of like a gutter you would find on your home. It protects and routes fiber optic cable between fiber optic splicing cabinets or frames, patch panels, and termination equipment. It can sit atop equipment racks or below runway or cable trays. And it's made from a fire-retardant, halogen-free, zero-dust plastic called Noryl. The company also sells a metal version of the solution. Tony Walker, director of marketing at Legrand|Ortronics, says these products are just two in a full line of physical infrastructure solutions that the company provides for mobile data centers. By mobile data centers, we're referring here to moveable data centers that can be used for disaster recovery or other nomadic applications, such as to support political campaigns, he explains.

Opengear Promotes DCIM, Remote Infrastructure Management Solutions

The term data center infrastructure management is a popular one these days, and yet another company that plays in this space is Opengear. The company's DCIM and remote infrastructure management appliances secure and simplify remote monitoring, access and control of critical IT and network, and operations technology and industrial control systems. These solutions integrate next-generation automation and out-of-band management technologies. Bob Waldie, chairman of the company, says that companies are increasingly interested in remotely managing data centers, but that to do that they need to ensure those data centers stay online at all times. To give them that assurance, Opengear provides appliances through which they can access multiple services providers and create primary and secondary/backup connections. The company also offers solutions that can monitor and control power, smoke detectors, water detectors and more at remote sites.

APCON Promotes Network Monitoring, Traffic Analysis Tools

APCON Inc. was at Cisco Live this summer talking about how customers can use its highly available and scalable network monitoring and traffic analysis tools in their data centers to reduce costs. Mark Holmes, APCON's domestic sales director, told INTERNET TELEPHONY that the tools are targeted at Fortune 500-1000 customers. The fact that the company delivers the hardware and software – and does in-house manufacturing of the solution down to the circuit board level – means APCON customers get better quality solutions and faster innovation, Holmes added. The company has a broad portfolio of products. That consists of packet aggregation solutions known as the IntellaFlex and IntellaFlex-LE; data capture solutions marketed under the name IntellaStore; managed tapping solutions called IntellaTap; a time stamping solution called the IntellaFlex; switching solutions known as the IntellaPatch series; and a video routing product called IntellaPort. The company also offers management software, including TITAN EnterPoint, which provides a single, centralized solution through which to monitor enterprise networks.

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By Paula Bernier

The Elephant in the Room

What's the Scoop on Hadoop

Big data is one of the hottest catch phrases in information technology today. The term expresses the existence of the large, and growing, collection of information amassed by many organizations. That may involve both structured and unstructured data.

Conventional wisdom would lead you to believe that the more data and data types are involved, the more expensive and complex it is to analyze data. But that's not necessarily so, says Jack Norris, vice president of marketing at MapR. In fact, he says, Google is leading the way on new thinking that simple algorithms work better than more complex ones when you have lots of data.

To enable sophisticated but uncomplicated and relatively affordable data handling, and allow organizations to address unstructured data, which is growing faster than Moore's Law, Norris says, such leading companies as Amazon and Google are embracing Hadoop.

Hadoop is an open source technology that runs on commodity hardware, and allows users to do compute on disc instead of on network storage – and unnecessarily using lots of network processing, Norris explains, adding that both of these aspects of Hadoop make it more affordable than alternative solutions.

MapR offers an open, enterprise-grade version of the Hadoop distribution. The company, Norris says, has made Hadoop easier to develop, providing full dependability and performance, and also making it more open so you can use standard database files. Thousands of companies from the Internet, retail, financial services, oil and gas, telecom, media, and other verticals use the company's solutions to analyze data from a wide array of sources.

Hadoop and various tools designed to work with it can allow for sophisticated clustering, data mirroring and more. Such functionality can be used in a variety of applications. For example, some companies are using Hadoop to identify anomalies in credit card transactions to identify fraud. Norris goes as far as to say that Hadoop is changing the face of analytics in organizations today.

Yahoo! and Google were among the early champions of Hadoop, a technology around which a variety of companies including Cloudera, Hortonworks, and MapR have since built businesses.

Doug Cutting, a former Yahoo! engineer and current Cloudera executive, led the Yahoo! work on Hadoop. In fact, Hadoop is named after Cutting's son's stuffed elephant.

Google pioneered the use of MapR's MapReduce, which enabled the fledging search engine to go from nineteenth place in the market to No. 1 in just two years. Norris says Google understood that given the sheer size of content on the web, the company needed to take a different approach. So Google took the cheapest hardware it could find and put small pieces of information on various machines, giving each machine a share of the processing job. MapReduce, which works on 50 to thousands of nodes, allows users to do massive analysis in parallel, and in the process hides that complexity from the developer, says Norris.

All of that makes Hadoop an attractive candidate for cloud deployments. In fact, Amazon has extended its Elastic MapReduce service to include MapR's Hadoop distribution, which is being offered, sold and supported as a service by Amazon to its customers. MapR will also make its distribution available on Google Compute Engine.

"Hadoop is now central to the big data strategies of enterprises, service providers and other organizations," according a first quarter 2012 report from Forrest Research.

"Forrester regards Hadoop as the nucleus of the next-generation EDW in the cloud," the firm adds, noting that EMC Greenplum, IBM, Microsoft and Oracle are all evolving their enterprise data warehousing solutions to Hadoop.

Moves to expand the use cases of what's possible with Hadoop; allow people to use standard tools like file browers; offer standard database access; and view Hadoop as network storage, are expected to spur even more widespread uptake of this technology, says MapR's Norris. IT

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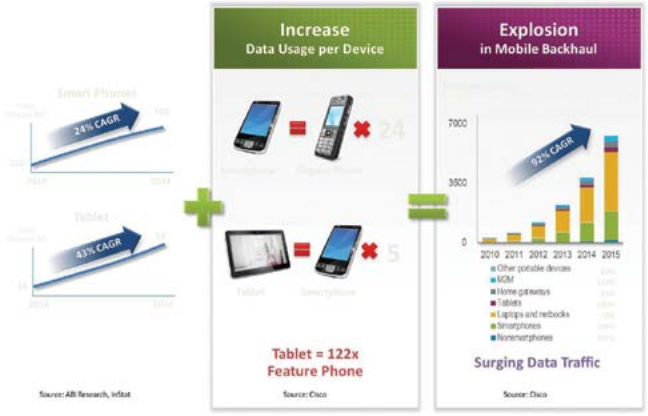
By Nicholas Ilyadis

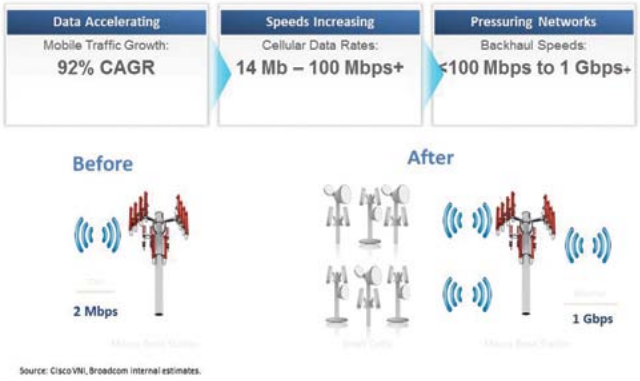
Ethernet and Small Cell Solutions Relieve the Spectrum Crunch

Digital-content consumption is on a steep incline with more consumers downloading large amounts of data via smartphones, tablets and other mobile devices. Consider these sobering facts: By 2015 there will be 15 billion network connections, the number of mobile devices will be two times the world's population, app downloads will reach 47 billion per year, and 1 million minutes of video will cross the Internet every second. Combine this with the fact that on average a tablet PC demands 122 times more bandwidth than a feature phone, and it's easy to see why Internet traffic is expected to increase 18-fold.



Exponential demand drives growth in mobile backhaul.

Existing mobile networks, typically built on legacy time-division multiplexing technology for backhaul, are already reaching capacity. U.S. regulators say the crunch on the existing spectrum could come as early as next year while some carriers are already preparing by imposing data caps or limiting speeds for smartphone users.



Carriers are moving to Ethernet and small cell technologies.

A massive network transformation effort is under way as carriers abandon TDM technology in favor of packet-based Ethernet technology as the standard medium for mobile backhaul. Already a proven technology, Ethernet is ideal for the performance and economic challenges presented by the explosive growth of mobile traffic. Delivering up to 1,000 times higher bandwidth than a TDM-based connection, Ethernet technology provides a cost-effective connectivity solution that scales to meet rising bandwidth demands at a significantly lower cost. These and other characteristics make it easy to see why Ethernet is expected to become the dominant carrier backhaul technology, approaching 100 percent usage in base stations by 2014.

In addition to upgrading legacy network equipment, carriers are also looking for ways to offload the spectrum through the roll out of high bandwidth indoor and outdoor wireless networks. More than a third of data on smartphones are now carried over Wi-Fi and by 2016, more than 3.1 exabytes of mobile data will be offloaded each month.

One approach for spectrum offload is the deployment of multiple small cell architectures. Small cells, also known as femtocells or picocells, are low-power wireless access points that operate within the licensed spectrum. Used primarily in residential and enterprise business settings, small cells communicate with the carrier network through a broadband connection, allowing users to continue using their mobile devices without an interruption in connectivity.

Carriers can relieve spectrum through the deployment of small cell architectures.

Small cells are ideally suited to deliver improved coverage, capacity and signal strength in these environments and offer a relatively seamless approach for carriers to deliver greater capacity and faster data speeds while offloading traffic from the spectrum. Small cells will also benefit from LTE/4G technology because the 4G standard uses a flat, IP-centric architecture that simplifies integration of the cells into the network. The IP architecture is used to drastically lower latency, which improves quality of experience, particularly for ap-

High-bandwidth Ethernet solutions support the mobile experience consumers crave, with high-quality voice connections, faster app downloads and uninterrupted video streaming.

plications such as streaming video and gaming. The architecture can also leverage self-organizing network solutions to configure and optimize the components, thus improving performance and reducing network planning and deployment costs.

Analysts predict the small cell base station market will reach 1.6 million units by 2016 as small cell vendors race to fulfill operator demand. It's estimated that 19 percent of total mobile traffic will be carried on small cells as early as next year (up from just 7 percent in 2011).

Spanning the entire network – from the access point to the edge, to the aggregation and finally the core – high-bandwidth Ethernet solutions support the mobile experience consumers crave, with high-quality voice connections, faster app downloads and uninterrupted video streaming. For the average consumer, the upgrade of legacy networks and deployment of high-bandwidth indoor and outdoor wireless will result in a more enjoyable overall connected experience. IT

Nicholas Ilyadis is vice president and CTO of the Infrastructure and Networking Group at Broadcom Corp. (www.broadcom.com).

By Paula Bernier

Single Digits Targets Public Wi-Fi Pre-authentication

Single Digits provides software that gives businesses access control of high-speed Internet services. Its solutions today are primarily used by casinos, hotels, retailers and other outfits that provide guest Internet access. But Single Digits President Stephen Singlar tells INTERNET TELEPHONY that the company is taking its technology to a whole new level.

The company, which in May closed on $10 million of additional funding, is building cloud-based tools that can authenticate users' wireless devices as soon as they move into, say, a shopping mall. That way, those users are connected to Wi-Fi as soon as possible, and retailers at the shopping mall can make those customers offers via their PCs, smartphones and tablets, Singlar explains. The Single Digits technology also can be used to track the whereabouts of users, look at how much bandwidth they use, how long they spend on various applications, and can share any or all of that information with other entities to facilitate a variety of billing models.

Singlar describes his company's technology as a software-based authentication engine that works with Cisco hardware at a customer premises to provide billing, tracking, monitoring, and network status through a dashboard. He adds that Single Digits technology, which integrates with a router at the edge, has been crippled by legacy routers, so it is keen to move to a higher class of routers. Cisco's ISG product is an example of such a high class router, he says, adding that the Cisco product enables the Single Digits platform to use bandwidth more efficiently.

Single Digits' next effort on the Cisco integration front relates to Cisco's wireless MSC, or mobile switching center, product. Singlar says he expects that integration to be complete in the third quarter, with mobile services based on that going live starting in the fourth quarter. IT

Infonetics Looks at Wireless LAN

"Sales of wireless LAN and Ethernet switching gear declined sequentially in the first quarter of 2012, mostly due to a typical seasonal buying lull, but also due to weakness in the EMEA region," explains Matthias Machowinski, directing analyst for enterprise networks and video at Infonetics Research. "Despite the sequential lull, on a year-over-year basis, WLAN market growth remains strong, up in the double digits for the tenth straight quarter." Machowinski adds: "Wireless LAN is the more exciting part of the enterprise networking market, but a number of interesting things are happening on the wired side as well, including tremendous revenue growth in the 10G Ethernet switch segment, where port shipments doubled year-over-year and revenue is set to hit the $10-billion mark next year, as well as rapid adoption of the latest technology arrival, 40G Ethernet, which has already exceeded expectations."

Cisco Scales Mobile

Cisco has introduced a significant new addition to its core router lineup for mobile service providers – the Cisco ASR 5500 platform. This solution expands on Cisco's ASR 5000 series of routers with scale and performance, and the ability to accommodate volatile traffic patterns and rapidly changing demands across the world's mobile networks. "Change in the use of mobile networks is challenging network architects to build flexibility and elasticity into the mobile multimedia core in order to control its cost," says Michael Kennedy, principal analyst at ACG Research. "Our analysis of the Cisco ASR 5500 multimedia core solution compared to a leading competitor's solution finds that TCO savings are up to 47 percent lower than the competitor. The savings are attributable to the Cisco ASR 5500's scale and integrated functionality that requires up to 65 percent fewer installed units."

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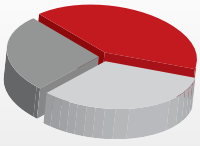

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By Andrew Till

Four Trends and Revenue Opportunities to Monetize through Mobility

Beyond developing innovative, differentiated products, the No. 1 challenge today for software makers globally is finding new sustainable sources of revenue. For most, mobilizing their products offers significant new monetization opportunities. These opportunities can be directly tied to four key industry trends that the best analysts out there are identifying and quantifying.

The Explosion in Connected Devices

According to IDC, the worldwide smartphone market grew 55 percent year over year in 2011 to 472 million, and will reach close to 1 billion units by 2015. Gartner is predicting worldwide tablet sales will exceed $200 million by 2014.

All of these devices will come outfitted with an array of real-time user content capabilities such as location, preferences and historical information, creating significant opportunity for new types of software and applications to enable productivity and reduce churn.

The revenue opportunity here is to exploit new context-aware capabilities such as location and real-time updating of core datasets in order to appeal to savvy workers who want to get the most done. According to Morgan Lynch, CEO of Needle.com "Work isn't a place, it's an activity" so give employees the best access to information at the right time to reap the benefits.

The Surge in the Mobile Workforce

IDC also says that the mobile workforce reached a staggering 1.1 billion people in 2010. And, by 2013, IDC expects that 40 percent of the global workforce will be mobile.

This trend clearly indicates that significant software usage will be done via mobile devices, resulting in huge monetization opportunities.

The revenue opportunity here is to establish core mobile workforce offerings and expand usage to increasingly nomadic employees now so that as this trend becomes the norm.

The Shift to SaaS

Most enterprises have made it clear they expect cloud computing and SaaS to become the dominant – if not exclusive – software delivery mode in the future. With less than 5 percent of total revenue from the largest software companies delivered this way today, there are clearly first-to-market revenue opportunities across a range of applications for those who get to a SaaS delivery model quickly.

The revenue opportunity here is to gain first mover advantage, as less than 5 percent of software is SaaS-enabled today by looking for help in the right places and with the right partners. If you wait, for example, on hiring that perfect mobile team leader you're going to get passed and then have to compete for second, third or fourth. Ask people who have already made the mobile move either for themselves or for other companies as a managed service and get on the path, quickly.

The Growth in Mobile Commerce

Forrester Research predicts U.S. mobile commerce will grow from $3 billion in 2010 to $31 billion in 2016. As the fundamental path of commerce shifts to mobile devices, more revenue will flow to companies offering compelling, innovative mobile experiences.

The revenue opportunity here is to position yourself as a key value chain player and capitalize on the purchasing shift to mobile. If someone can't make a purchase on the fly or when he or she receives a real-time recommendation, you've lost. Attention spans are getting shorter; with mobile commerce you must strike while the iron is hot in an intuitive interface.

With less than 5 percent of software SaaS-enabled today and predictions for 50 billion connected devices with 40 percent of the global workforce being mobile, software makers face tremendous new business and product development challenges and opportunities. If you're facing an uphill battle in the boardroom, these cold hard numbers and the straightforward opportunities to which they tie may just be able to help. IT

Andrew Till is CTO and senior vice president of smartphone and consumer electronics at Symphony Teleca (www.symphonyteleca.com).

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By Tim Eusterman

The Appeal of Automation

LoBue Citrus Picks FoodLogiQ, Intermec Inventory & Labeling Solution

LoBue Citrus is a family-run grower and distributor of oranges accounting for 4 to 5 percent of the California citrus industry. That equates to between 4 and 5 million boxes each year, with 40 percent of the product exported to Asia. Based in Lindsay, Calif., the company recognized the need to automate its produce traceability program. Formerly, the process was manual, which tied up critical resources and increased the likelihood of error.

FoodLogiQ, which provides software and solutions that meet the needs of the Produce Traceability Initiative, engaged LoBue Citrus with an automated system using Intermec Smart Printing solutions.

"The key benefit for us is having a real-time, automated inventory control system, vs. the manual system we've had in place, and being able to make decisions both in sales and production on what we have available to us in real time," says Operations Manager Tom Clark.

Labeling Made Smarter

Most intriguing to Clark's team was the stand-alone nature of Intermec PM4i industrial smart printers. That meant it didn't require an additional computer to print labels, which minimized the cost of the solution. The system was also easy to use, which simplified and sped up worker adoption.

"We always look at simple as being the best solution," Clark says. "With the [Intermec] Smart Printers, all you need is a small area on a desk or a rolling cart to make this system functional. It seems to be a very cost-effective, simple solution to satisfying the requirements that are being requested of us today."

Workers are able to scan a FoodLogiQ-generated barcode using an Intermec SR30 handheld scanner, which tells the Intermec PM4i industrial printer what label to print. The worker uses the PM4i printer's keypad to select a quantity on the display. Because the printer isn't tethered to a computer, workers can move the cart on which it is stationed directly to the boxes that require the tags. Once the boxes are wrapped, the workers use an Intermec PB50 mobile printer to generate a pallet tag. The box labels from the PM4i and pallet labels from the PB50 include a barcode that identifies the kind of orange, ship date, destination, farm source, and even the farm lot. This is a powerful tool should the company need to trace a shipment back to its origin.

"At any given moment, if we were to have a trace-back for some reason, it's simply a matter of getting notification from the consumer or buyer, and instantaneously, we can pull up all information associated to a certain lot," Clark says.

The Difference with Automation

The new system has made it possible for these trace backs to occur within a matter of minutes, whereas before the implementation it took roughly two hours. The inventory accuracy has improved as well. Every additional percentage point in accuracy helps a produce distributor stay competitive. Before the implementation, accuracy ranged from the high-80 to low-90 percent; accuracy is now between 98 and 99 percent. Because the system is automated, physical inventories have become a thing of the past, saving eight to 16 labor hours each day, which equates to approximately $96 to $240 saved in labor costs per day. Given the early improvements, Clark believes the system will pay for itself within two years, and all subsequent gains beyond that will further help the business.

Because FoodLogiQ presented an entire solution – incorporating its PTI solution with a full line-up of Intermec technology (a PM4i industrial printer, PB50 mobile printer, and SR30 handheld scanner) – LoBue Citrus was able to focus on its core business.

"The whole process with FoodLogiQ was hands-on," Clark says. "We didn't have to go out and try to piece together our own system. FoodLogiQ has been able to integrate the whole package of requirements that we need beyond just the G10 code identification number. [It has] incorporated food-safety programs, and you can actually keep your food-safety documentation in [its] system."

A Single Hardware Manufacturer

LoBue Citrus processes up to 1,200 packages an hour, and the system has held strong. During the day, the Intermec hardware sits on a warehouse loading dock that is open to the outside. Even in conditions such as these, the equipment works.

LoBue Citrus decided to go with a single hardware manufacture to simplify the complexity of the system. The system operators needed to be able to work with a handheld scanner, industrial printer, mobile computer and mobile printer. Hence, having a commonality in the interface was essential to avoid a lengthy training period.

"I find that once you find a system that you can rely on, it's much easier to have a single-source manufacturer, vs. trying to integrate pieces, especially pieces that have to communicate with one another," Clark says.

Adds Clark: "What they've done is develop a system that is not commodity-specific. And in that, they've incorporated all the aspects of traceability, food safety, sustainability, pesticide application documentation, and record keeping. I've been involved in the production management of produce for 25 years, and this so far has been the easiest one I've been involved with." IT

Tim Eusterman is senior director of industry marketing at Intermec (www.intermec.com).

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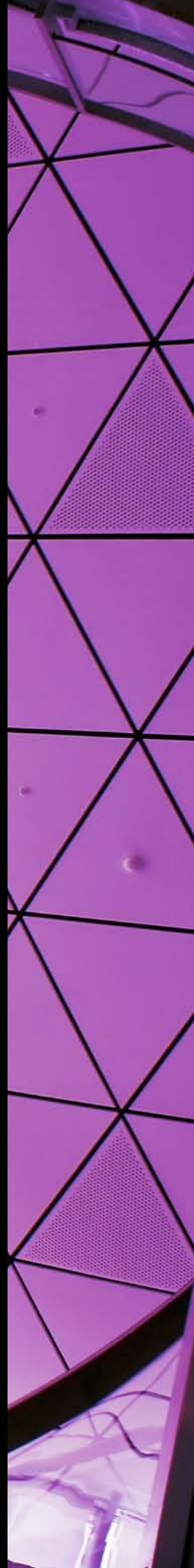
Conexiant Telecom POPs up Worldwide



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INTERNET TELEPHONY®

By Paula Bernier

Conexiant Telecom POPs up Worldwide

Conexiant Telecom has expanded to offer a complete range of wholesale carrier services including Private Label Hosted PBX and server hosting. New services include offerings provided in partnership with DTH VoIP Billing and E911 provider Multi-Alert911. INTERNET TELEPHONY recently spoke with CEO Gregory Giagnocavo about the company and its value proposition for customers.

How did the idea for Conexiant come about?
GG: Several of us had worked together on various projects since 2005 when VoIP first really started to take off. We all know the VoIP space well, because the Conexiant founders include the founders of Dash911, and many of us had been involved with Vitelity.

Many resellers, VARs and VoIP companies have outgrown their original providers and they now will benefit from getting more services from one provider.

> "Conexiant wants to be the provider that everyone can always count on. That's the basis of our 100% uptime guarantee."

We figured that the market has matured in the last five years and that many VARs, MSPs, resellers and VoIP companies would be interested in better and consistent quality. Our proposition is that a failure could put a company out of business, so that provider has to be super solid.

Conexiant's tagline is "always-on telecom". What does that mean? Isn't telecom always on?
GG: Well in North America we think of telecom as always being available, that's for sure. But VoIP providers are certainly no strangers to outages, mistakes in routing, and various other gremlins that cause interruptions in service. At Conexiant we have developed ways to minimize these disruptions, to the point of where we advertise 'always-on telecom'. Conexiant wants to be the provider that everyone can always count on. That's the basis of our 100 percent uptime guarantee.

Conexiant advertises POPs in the U.S., Hong Kong and Germany. Do you have many customers outside the U.S.?
GG: We decided early on to plan for growth. And having POPs in other regions provides an easy on-ramp to our global VoIP network and to the carriers we are connected to in various countries. Conexiant and many of our suppliers use the Level 3 backbone around the world. So a call that hops on the Frankfurt POP can then travel anywhere it needs to go with a higher-quality experience.

It's not the least expensive way to do things, but it provides the highest quality. When you need something to work, price isn't the most important factor, quality is. We can install a Conexiant POP anywhere in the world in three days to meet any specific customer need or demand.

How did your experience as an original founder of Dash911 and other tech startups shape your approach to building Conexiant?
GG: We adopted the same philosophy at Conexiant that proved successful at Dash911 and other companies I've helped found. I start by hiring experienced and dedicated people, make sure we have plenty of financial resources, and insist that all infrastructure is redundant and world class from day one. Then we line up and commit to dozens of large-scale wholesale Tier 1 and CLEC providers, which gives us direct-connect quality for origination and termination at a lower cost structure.

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Who is Conexiant's target customer?
GG: We serve mid-to larger companies who need voice and VoIP services. We believe any reseller or high-volume user of VoIP services would benefit from a relationship with us.

How does Conexiant's DTH Billing in the cloud fit in with your overall VoIP services strategy?
GG: We've known DTH Software for years, and everyone in this market space respects DTH, its robust feature set, and its ability to really power a complete VoIP company. It's not just billing; it's more like an operational support system with billing features.

DTH Software until now has only been available for purchase with a price tag of around $20,000 to $200,000. Conexiant has partnered with DTH to create DTHcloudbilling.com, and we are hosting the software on a monthly subscription basis. We're pretty sure that this model will prove to be immensely popular. So far, every demo has resulted in a new customer.

"MultiAlert911.com works with any DID from any provider, with advanced security alerts and features."

Tell us about Conexiant's MultiAlert911 offering.
GG: MultiAlert911.com is a full-featured E911 emergency calling solution for VoIP. We have provisional patent status on some of the advanced features we've developed that will allow instant alerts to other emergency and security service providers with voice verification and voice recording. Yet, the price is less than what VoIP providers now pay for E911. We've succeeded in turning E911 from a commodity into a feature add-on for which VoIP providers can charge a large premium, especially in the business environment.

Founders

Our team has had extensive experience and is well-known in technology circles, having started with Internet and technology ventures in 1992. This 20-year history includes a rich history of founding or co-founding:

Supernet.com (1994) - Started as an ISP, went public and was later bought by Earthlink.

Classroom.com (1994) - Internet educational publishing, became the largest in the USA. Eventually bought by Harcourt, Brace.

Dash911.com (2005) - The first to provide E-911 for independent VoIP providers. Was merged and then eventually bought by bandwidth.com in 2011.

CarrierCloud.com (2010) - International termination marketplace.

What attracts customers to Conexiant and keeps them coming back?
GG: At every level, customers clearly feel the high touch of customer service when they deal with Conexiant. Many companies can sell plain minutes, but we provide confidence. Every corporate or reseller customer needs to be confident in our people and our services, and we strive to meet those expectations. We offer a wide range of services and because we own all our own software code, we can quickly add features and make changes as customers may require. IT

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Making the Most of Data to Increase Business Dexterity

By Erik Linask

Technology advances happen for many reasons but, typically, they either are useful to the user or they will generate revenue for the provider/vendor. The greatest chance for success, of course, comes with the combination of the two.

Frankly, when you look at the different versions of the iPhone and iPad, it's easy to make the case that Apple could have easily rolled several releases together, which would have been better for users, but would have resulted in lower sales for Apple and its carrier partners.

In fact, when it comes to most end user technology, vendors tend to roll them out more frequently than they need to. Largely, I believe that's as a result of eroding brand loyalty, where vendors and carriers need to put new products in front of their subscribers constantly, for fear of losing them to a competitor. So they try to lock subscribers into new two-year contracts, get a few bucks for a partially subsidized device, and get them to pay for more services that run on a network that is far from perfect.

Let's go back several years, to the supermarket, where inevitably you had to wait in line at the deli counter to get your cold cuts for the week, before you could move on to the rest of your shopping list. Then, one day, miraculously, a deli express terminal appeared, which allowed you to place your order using a touchscreen, then finish the rest of your shopping while your order got filled. It saved time and frustration for everyone.

The same company that first developed the deli kiosk, Dexter Systems (DEli eXpress TERminal), recognized the value of simplification through automation, far beyond the elimination of one interpersonal interaction in the case of the deli kiosk. It began writing automation software for NYNEX (now part of Verizon Communications), with a focus on customer back-end workflows and OSS software.

The key to automation is being able to create a system that eliminates human interaction without eliminating human value. In other words, the automation needs to deliver results that mirror human intervention – but produce the same results faster.

"It goes beyond basic number crunching and tracking – that's the easy stuff," says William Doyle, Dexter CEO. "The next step is emulating human reasoning and creating a rules-based system that mimics the human thought process."

He suggests that technician work assignments are an ideal opportunity for them, and Dexter is already working with hundreds of wireline systems, but he sees a major opportunity in the wireless arena as the mobile explosion continues.

It's not just about geography. Certainly, routing and assigning can be done manually in that way. But, with the data that's available, if a business is able to harness all that data – both internal and external – and use technology to logically sift through the data to reach logical conclusions, it can become much more lean and efficient in its operations.

Think about the potential of combining GPS data and telematics with customer data, problem characteristics, technician skill sets and specializations, traffic and weather information, and distilling it all in a logical manner to create the best possible service scenario for all service calls for the day.

The Dexter software isn't quite to that point yet, but Doyle says the company is working on creating learning software that can adapt to new situations and create new rules to enhance its capabilities. For now, it's built on a scoring system that compiles and processes available data to come up with the most efficient combination of assignments.

Think of it as a team of four golfers, where each team tries to shoot the lowest combined score possible. One option is to have each individual play four or five consecutive holes. Or, you can factor in each golfer's abilities and tendencies in certain situations. For instance, you might have a golfer with a great short game, but a tendency to slice drives on long par 5s. It might be beneficial to have that golfer play the par 3s and short par 4s, with perhaps one short par 5 he can play without hitting his driver, since it eliminates two players having to drive all the way from one end of the course to the other for one hole.

The payback, if businesses can achieve optimal efficiency in their processes, is significant, and the potential extends well beyond technicians, to delivery services, car services, packing and loading, emergency services and government, and much more.

Quite simply, automation is a way of creating process efficiencies. Interactive Intelligence showed with its IPA product how internal communications can be automated to enhance operations. Dexter is taking automation to a new level, tying in intelligence to enable variable decision making based upon multiple factors.

It may not be the most glamorous of technologies with flashing lights and bells and whistles, like the iPhone, but it provides a very real benefit to both customer and vendor, increasing a business' ability to act swiftly and precisely – it's DEXTERity, if you will – resulting in increased performance and greater satisfaction. IT

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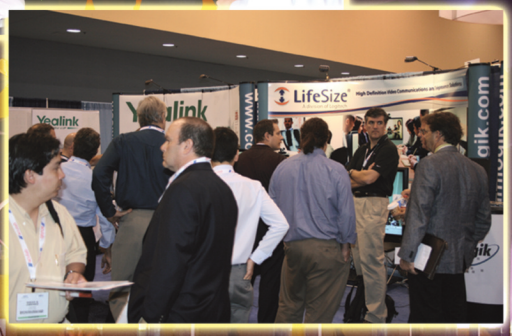

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