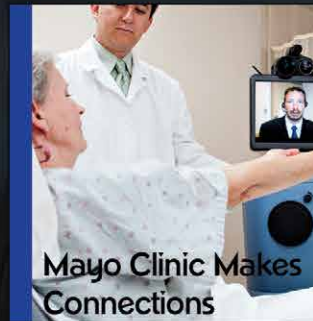# TMC

INTERNET TELEPHONY

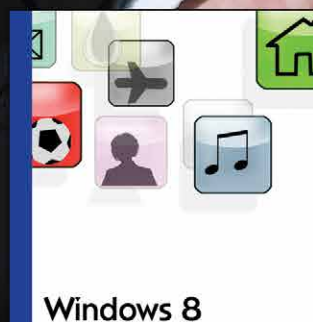## The IP Communications Authority Since 1998™

Cool, Organized & Under Control

Panduit Gets Physical with Data Centers, Enterprise Networks and Industrial Applications

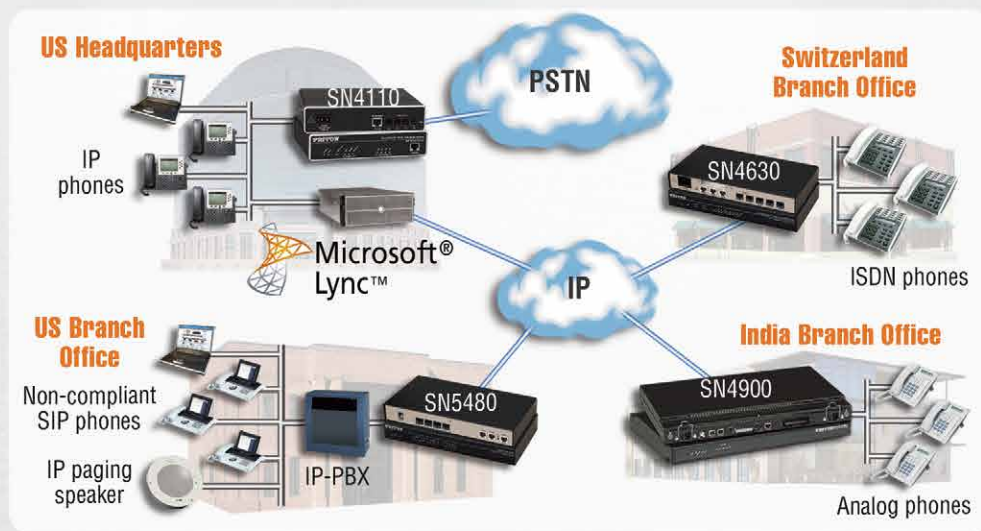**Mayo Clinic Makes Connections**

Mobile Web Apps with Native Apps

Windows 8

Top of Mind

Being Digital

Maybe it's just post-holiday malaise from an overdose of turkey-induced tryptophan, or maybe it's just that I wanted to avoid being repetitive, but in this – INTERNET TELEPHONY's January issue – you will notice a decided lack of year-ahead-type articles.

Let's be frank. Anybody reading this magazine is already extremely familiar with the fact that big data, BYOD, the cloud, ever-bigger bandwidth, mobile, network optimization, SIP, SIP trunk-ing, social media, video and (at least the idea of) unified communication are all the rage.

ogy spending. It will become almost 90 percent by the end of the decade, the research firm says. To respond to this reality – and to the fact that the cloud, social, mobile and information are changing the way people work and live, Gartner predicts 25 percent of organizations will by 2015 add the position of chief digital officer to their C-level lineups.

"The Chief Digital Officer will prove to be the most exciting strategic role in the decade ahead, and IT leaders have the opportunity to be the leaders who will define it," said David Wil-

> ## Gartner predicts 25 percent of organizations will by 2015 add the position of chief digital officer to their C-level lineups.

And, if you've really been paying at-tention, you may also know that gami-fication, HTML5, M2M and WebRTC seem to be gaining steam as well.

The bottom line is that while there may be ebbs and flows in business, consumer and service provider buying habits, and ups and downs in tech companies' finances and personnel numbers, communications technology has become a linchpin in the world economy and is now a central con-sideration for virtually every business and many consumers.

Gartner recently noted that 12 years ago technology spending outside of IT was 20 percent of total technol-

lis, vice president and distinguished analyst at Gartner. "The Chief Digital Officer plays in the place where the enterprise meets the customer, where the revenue is generated and the mis-sion accomplished. They're in charge of the digital business strategy. That's a long way from running back office IT, and it's full of opportunity."
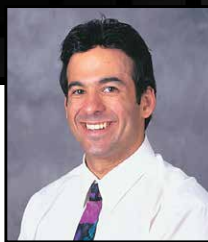
No longer does information technology define the rules, added Willis.

"Instead it is a key ingredient in achiev-ing personal and enterprise productivity and innovation – where technology is so natural and pervasive that we don't even need to hold it in our hands," he said. "It's just a part of our lives." **IT**

Brains, Gains, and Automobiles

Ford recently announced plans to update the software on some of its vehicles to fix a coolant problem that can cause fires. The 2013 Ford Escape SE and SEL models with the 1.6-liter engine and 2013 Ford Fusion SE and SEL models with the 1.6-liter engine are part of the voluntary recall which will modify the code that manages coolant pressure under certain overheating conditions – making it less likely that vehicles catch fire under the specified scenario.

In a more interconnected world it seems only a matter of time before automotive operating system software is updated over the Internet the way just about everything else is.

And so the excitement begins. Imagine if a criminal group or hostile nation figures out how to update the software governing coolant systems in cars of a specific manufacturer. They could target said vehicles and modify the algorithms for cooling, throttle response or anything else, which could wreak havoc. If you think traffic on the Long Island Expressway or 405 near Los Angeles is bad today, just wait till a rogue group starts making the vehicles around you start to catch fire.

This brings us back to the importance of protecting M2M from infiltration. Software security is now physical security and software controls not only the obvious things like power grids and other infrastructure-related areas of an economy but automobiles and subsequently transit systems. For more on M2M, look both in future issues of INTERNET TELEPHONY and to a new TMC magazine launching this month, called M2M Evolution. The new publication with provide readers with information and analysis on new technologies, case studies and discussions with M2M innovators.

Speaking of innovators, Michael Robertson is one of the most interesting people in the tech world, having burst onto the scene during the dotcom days with the launch of MP3.com, which allowed users to store their CD collection in the cloud. Now a commonplace concept, at the time the record labels weren't sure what to do about the company so they defaulted to what they do well, suing the startup into oblivion. Of course it didn't help that Napster was popular during the same time and brought major attention to how new technologies were robbing record labels and artists.

Talk about being a visionary.

He had a string of other startups as well, such as SIPphone, which was later purchased by Google, and another music-related company, MP3Tunes, which filed Chapter 7 bankruptcy.

I had a chance to meet him a few times as he was producing SIPphone – another vey novel business which showed how creative he could be.

More recently he has launched a novel service called Dar.fm, which allows you to record radio for later listening. Robertson has done it again. He has started a new business which makes you think, "Hey, why didn't I think of that?" and then after a few more moments you say to yourself, "Probably because I don't feel like dealing with lawyers for the next few years."

I wanted to use this space to touch on one other item.

About eight years ago I held up DiamondWare as a shining example of what communications should be – HD, stereo and 3-D. Nortel later purchased DiamondWare and integrated it into its Project Chainsaw initiative, which allowed avatar-based communications. Then these assets were sold to Avaya as part of the Nortel bankruptcy. However, people, it seems, weren't yet ready for avatar-based communications or stereo conferencing, so you can't blame Avaya for not pushing this technology.

Now there is an app that works on Android and iOS which enables much of what DiamondWare did, and it's called Voxeet. They need to work out the kinks, but to me this is how communications is meant to be – the way we naturally hear it, with both our ears and the ability to clearly discern where voices are coming from. On a busy conference call, the capability to drag participants to the left or right and front and rear could make the difference between understanding what is said and getting confused. **I**T

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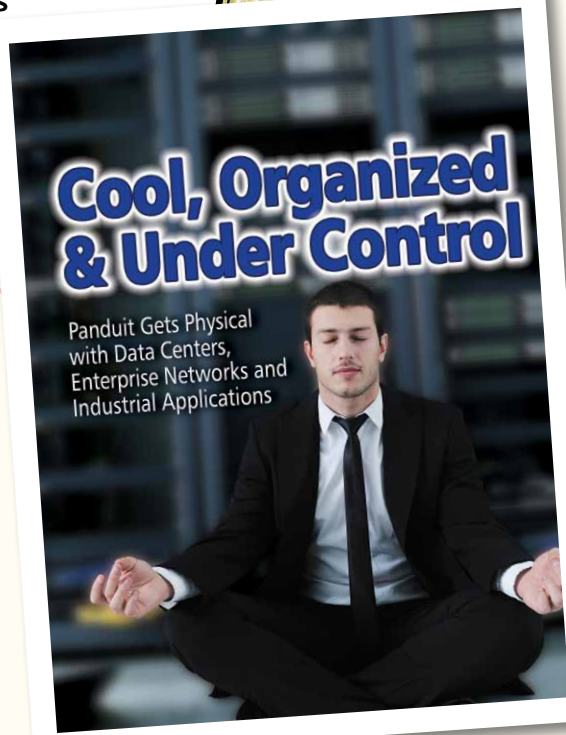
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By Hunter Newby

Strip Mining American Reliability

Reliability and the value associated with it have been stripped from America over the last several decades. This travesty afflicts us all, and it is all in the name of profit. Those profiting from this include corporations as well as the government. To be an American was a brand that was once associated with wealth and prosperity. It carried through to our infrastructure, schools and communications systems. Those things that made us who we were as a nation have become too "expensive" to maintain and have been conveniently gutted of their inherent value. This is a path we are all on whether we know it, like it, or not, and the results have widespread negative effects.

One of the most unknown thefts of American wealth has come in the form of the removal of all silver from our coins. The U.S. quarter once had real silver in it, until 1964. That is when the U.S. government realized that fiat currency has no real value and that ultimately the value of the silver in the coin would surpass that of the coin itself. Silver today is worth $32 per ounce and based on the amount of silver in pre-1964 quarters, which means that the silver in one of those quarters is worth far more than 25 cents. The silver is actually worth $5.89.

The value of copper in a penny has had an identical path in recent years as the value of copper as a base metal has increased. This is why there is no longer any copper in a penny, as there would be value for common people in converting the coins in to metal and selling the metal for a profit. Ironically, that profit comes in the way of more U.S. fiat currency returned to the seller and the reason why the U.S. government made it illegal to melt down U.S. coins.

The base metal copper has also provided real value to common people for more than 100 years in another form, plain old telephone service, or POTS, lines. The ingenious design of the public switched telephone network included the use of the copper wire to the home as not only the communications media, but also the conductor of electricity from the DC-powered central office voice switching equipment. This was based on the reality that most homes in the United States lacked electricity and the telephone required electricity to function. Without power there was no telephone service to sell. Necessity was again the mother of invention. This design, though, also meant in future years when power was brought to the home that in a general utility power outage the telephones would still work, and this meant continued communications to insure the safety and security of the common people. The Bell Telephone Central Office design, and the entire PSTN for that matter, were once revered worldwide as the best in the world for reliability and quality.

Verizon and AT&T recently have announced their plans to abandon the old copper plant and with it those old notions of inherent reliability and security in favor of fiber optic links to the home and wireless service that eventually fail after battery life is exhausted in a general power outage. This decision is being driven by the bottom line – profit, as the telephone companies no longer want to support the maintenance and repair expense of the copper, but also want to be able to sell new, higher revenue and high-margin, high-speed network services that the copper cannot support. Telephone service in the U.S. has moved from being a right of every citizen under Universal Service to a luxury where base-level operation can no longer be relied upon. Yet the less reliable service actually costs the end user more.

This irony has been a day in the making for a long time. Beyond the travesty of lifeline reliability being eliminated there is the issue of broadband relief from 2003 that gave the RBOCs protection of their investments in fiber in the form of not having to allow access to the fiber as they did the copper. With the elimination and abandonment of the copper plant and it being replaced with fiber, so goes the value to competitive carriers of being able to use that copper plant to access customers and the value to the customers of being able to use it to access competitively priced services.

With Hurricane Sandy having just passed through New York City and the surrounding suburbs, this aging base metal plant has reached a precious high-point in its reliability value to end users as copper line phones worked during the extended power outage while wireless and fiber-based phone services failed. It is not that mobility doesn't add value to productivity, or that fiber doesn't add value to increased capability, but reliability and its expense is now being pawned off on to the customers as they are being told to create their own back-up plans by having generators, secondary wireless phones, or other means to keep themselves connected during power outages. Even with all of that being placed on the customer there is no certainty, as it once existed, that the phones will still work when the power does not as it has for decades in this country. This is a major change to our society, the implications and impacts of which are yet to be fully known. One thing is fully known though, like the copper telephone plant, accountability for the American standard is being abandoned. **IT**

> **Telephone service in the U.S. has moved from being a right of every citizen to a luxury where base-level operation can no longer be relied upon. Yet the less reliable service actually costs the end user more.**

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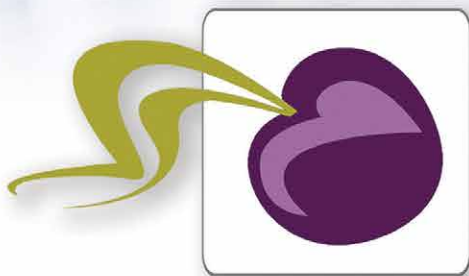
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By Max Schroeder

A Continuing Educational Series
Time to Protect Your Customers and Your Company

Hurricane Irene left a trail of destruction in the Mid-Atlantic and Northeastern States in August 2011. In October a major snowstorm shut down the northeast power grids. October 2012, brought the record-breaking hurricane/Nor'easter hybrid Sandy. It ripped into the area, destroying coastal communities and leaving heavy wet snow inland. Even Lower Manhattan in New York was flooded, causing massive damage. Nine days later, Nor'easter Athena dropped up to 12 inches of snow, triggering additional power outages. Gas was being rationed. Internet service was limited, and several mobile phone services failed. People were cold and miserable. Yet some organizations managed to operate quite well. How did they do it?

The organizations that fared best were those that had migrated to a cloud platform and had implemented a business continuity/disaster recovery plan. BC/DR plan basics are not complex and most resellers can provide guidance. Advanced designs may require a specialist. The key factor to keep in mind is that BC/DR plan components are readily available and affordable for organizations of all sizes.

My home and office were in the affected areas, so it may help if I share my experiences. Sandy triggered the third full implementation of my personal DR plan in 5 years. When the storm warnings were posted, I made reservations at hotels No. 1 and 2 on my DR plan list. Hotel No. 1 maintained power and Internet services during my past two emergency relocations. The storm struck in the late afternoon, and the power grids started failing shortly after sundown. Hotels No. 1 and 2 lost power. Fortunately, Hotel No. 3 retained power, so I immediately made reservations.

Surveying the devastation at daybreak and browsing for information on my Android phone, I knew immediately the power outage would be extensive. I have a small generator to cover the basics – lights, refrigerator, heat and cold running water – so I decided to wait it out. My 4G and copper landline services stayed live, but our Internet connection did not. I used my smartphone for calls, e-mail and emergency updates. During the day I would travel to the nearest Wi-Fi hotspot (the lobby of hotel No. 3) for full communication channels. The disaster situation continued to deteriorate as the week progressed, so I relocated to hotel No. 3 to devote as much time as possible to company business.

A key factor for my plan's success was the cloud computing and DR solutions my company had implemented: Microsoft Office 365 for all employees; Lync, CRM and other applications hosted in a first-class colo; and a cloud fax DR agreement with the etherFAX Hybrid Cloud Service. Fax can be a vital tool in emergency situations. All applications and services stayed live for the entire time.

Employees are an organization's most valuable resource. Therefore, priority No. 1 is to protect the staff and provide them with the necessary tools to continue working. Key employees must be available to manage operations and assist customers, particularly customers in the disaster zone. All employees should be encouraged to have a go bag ready when warnings are posted. After the power fails or mandatory evacuations are ordered, evacuation can turn into a mad scramble where medications, smart devices, laptops or other necessities are forgotten.

Resellers are obligated to advise customers that a BC/DR plan should be in place. Remember, they are depending on you to provide solid professional advice. This is why they engaged your company in the first place. With today's cloud and communications technologies, putting a plan in place is fairly straight forward. Organizations will also realize immediate benefits from the increased efficiency and cost savings of cloud solutions. Resellers will enjoy the additional revenue from these sales, plus have the satisfaction of knowing they did their best to protect their customers – a win-win situation all around.

Sample BC/DR Checklist

Cloud Hosting	Mobile Home Office
Hybrid Cloud Fax	Microsoft CRM (Colo)
Home Offices	Microsoft Lync (Colo)
Hosted Fax	Microsoft Office 365
Hosted VoIP	Mobile Smart Devices
Hosted UC	

Not all of the above applications and services have to be implemented at once. Nor does the list include all possibilities. The key is to create a solid BC/DR plan and begin the process of implementing it. Don't procrastinate – start working on this now.

For the latest news on cloud and communications solutions, don't forget ITEXPO Miami Jan. 29 – Feb. 1, 2013. **IT**

Max Schroeder is the senior vice president of FaxCore Inc. (www.faxcore.com).

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By Mike Sheridan

What the Music Industry Can Teach Companies about Customer Service

When people decry what's happened to the music industry, they generally focus on the artists: Will Justin Bieber, Katy Perry, or One Direction stand the test of time like Bruce Springsteen, Paul McCartney, or the Rolling Stones have? As much fun as these debates can be, they miss the larger point. The entire music industry has endured dramatic and costly changes in recent years, driven in part by evolving consumer tastes and emerging technologies. Its evolution offers a cautionary tale to companies struggling with how to meet rising customer expectations.

Forty years ago, the album was the preferred music delivery mode, and record executives were focused on artist development, distribution, sales and marketing, and the like. Although there were technological advances – the 8-track tape, cassettes – they didn't dramatically alter consumer habits. Even compact discs, which helped to sow the seeds of the industry's undoing, were perceived to be no more than a digital record. The resulting surge in CD sales in the mid 1980s lulled execs into a false sense of contentment.

Then came the MP3 player. Nothing turned the music industry on its head quite like digital file sharing and accompanying devices – namely, iTunes, the iPod and, later, the iPhone. Execs were so intent on trying to squash the Napsters of the world that they neglected to figure out how to harness the power of digital content. In short, they were blinded by emerging technology and channels and lost sight of the underlying shift in consumer behavior until it was too late. And this failure to adapt has cost the industry more than a few titans and mainstays, with retailers like Tower Records and Borders replaced by Spotify, iTunes, and YouTube – places where users can find any kind of music they want on any device they please.

So what can the customer service industry learn from the entertainment industry and its recent struggles? The main lesson: stay agile, adaptable, and aware of evolving consumer needs. Customer contact has shifted from a one-way, single-channel interaction to a true multichannel conversation. Advances in technology, the rise of mobility, and the ever-expanding availability of information have led to a boom in non-traditional channels – in the past two years, chat usage has increased by 18 percent, text by 20 percent, and Twitter by 19 percent.

Just as music consumers have gravitated toward portability, consumers at large have embraced mobility. This ever-present online connection means that the real-time resolution of issues – through the channels that customers choose – has taken on added importance.

Companies that wish to keep up with their customers must not only embrace the various channels of the present – voice, text, video, e-mail, social media, and others – but software and hardware solutions that are agile enough to adapt to new features and applications.

If you need additional incentive, just remember the record companies: They were able to maintain the quality of their product, but it was the combination of emerging technologies and shifting consumer behavior that sealed their fate. **IT**

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

Companies that wish to keep up with their customers must embrace various channels, and software and hardware solutions that are agile enough to adapt to new features and applications.

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By Jon Arnold

Collaboration – What it Means to Employees

In last month's column I talked about the business value of collaboration, and how today's IP-based technologies provide viable options for both large- and small-scale needs. Collaboration can take many forms, and for businesses that see this as a core competency, logic dictates a need to make these tools available to as many employees as possible. The thinking here is that nobody owns innovation, and great ideas can – and should – be free to come from any place across the organization.

Collaboration tools have never been more powerful and accessible, and companies must first get beyond legacy thinking to leverage what's readily available. Applications like video-conferencing and white boarding are no longer the domain of executives, and with UC, IT managers can now enable all employees to collaborate. This is very important, as businesses become more decentralized and virtualized – not only are teams geographically dispersed, but increasingly they are multi-cultural and cross-generational.

This brings us to the topic at hand – the value of collaboration from an employee's perspective. Generally speaking, collaboration is a top-down imperative – it's the desired behavior man-

Despite the outcomes management would like to see happen with collaboration, most employees take a more practical and pragmatic view. In many cases, collaboration is really about just getting the job done – nothing more, nothing less. Unless your company is renowned for daily genius breakthroughs, it's unrealistic to expect that UC will transform employees to channel Steve Jobs on future team engagements. Certainly, that may happen on occasion, but it won't be the norm.

On one level, collaboration tools will generally be used effectively by Millennials, but not because they're especially creative. This is largely a generational thing, where this demographic has grown up with the tools found in UC offerings – video, chat, IM, presence, file sharing, text, etc. Not only is this intuitive for them, but they have long been conditioned to use these tools in their personal lives. Savvy users of social media are attuned to collaborating in ways that many employees can't even envision.

Millennials also take a different view of work in terms of making few distinctions between personal and business-related activities. They are just as likely to work on a project during a vacation as they are to update their Facebook status at the office. Furthermore, the workforce is changing in our knowledge-based economy, and

Employers need to be conscious that expectations are getting higher among employees for the tools that make them productive.

agement wants to instill, based on the belief that teamwork produces the best results. I would contest that notion, but this is not the place. That said, teamwork is good because it brings the best ideas and talent to the table for a common goal, and is an effective way to address complex challenges.

One would think with these pieces in place that collaboration would just happen effortlessly, and teams would produce all kinds of breakthrough ideas. This is probably more the exception than the rule, as collaboration is essentially a very human process. UC applications can be great enablers for teamwork, but what are really needed are human inspiration and a culture that values innovative ideas.

So, how does this look to employees? At heart, we all want to feel special and make a difference, and companies like Google and Apple are well-known examples that foster this culture. Most of us aren't so lucky, and lack the wherewithal to come up with original ideas, not to mention work in environments where new thinking is welcome. I'm not trying to sound cynical, but do want to emphasize that UC tools can certainly facilitate collaboration, but make no claims on the quality of what teamwork produces.

Millennials tend to think of their careers as a series of projects rather than following a static path based on merit.

With these perspectives in mind, employers need to be conscious that expectations are getting higher among employees for the tools that make them productive. Increasingly, employees work from home or remote locations – often by choice – and they very much understand the need for UC tools. This particular case is a good example of how different objectives can find common ground via collaboration. Management likes home-based workers because of the cost savings, but employees want to be home to support a lifestyle choice.

As such, collaboration is a good thing, but the reasons and benefits will vary between these two groups. To get full value from UC, businesses must recognize that employees will likely view collaboration differently, but this doesn't mean their views are incompatible with management's objectives. **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.

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Interoperability Is Still an Issue

By Steven Johnson

The key to any successful SIP deployment is, and has always been, interoperability. It was a key issue driving the development of SIP: When the Internet Engineering Task Force first introduced SIP one goal was to create a streamlined protocol that would pave the way to seamless interoperability.

Vendors know this, and have been redesigning their solutions to incorporate all of the legacy PBX functionality in a PBX which is built on a full SIP implementation. Why, then, is interoperability still an important part of the VoIP network design?

When implementing SIP trunking, interoperability must work seamlessly between two sources: the IP PBX and the SIP trunking service provider. Even though the IP PBX may be a full SIP implementation, there can

still be a mismatch between that PBX and the SIP trunking service. The SIP standard, like many Internet protocols, is written to give the industry wide latitude in how various functions are performed. And there is no guarantee that both the IP PBX vendor and the SIP trunking service provider will have chosen the same methods. Without complete commonality of the methods chosen, the SIP trunking implementation will be difficult or impossible to complete, which is one of the roles that the enterprise session border controller can play.

An E-SBC is a tool that can make an IP PBX compatible with whatever SIP trunking service may be on the other side. Basically, the E-SBC can terminate the call from one side and reinitiate the call with modified header information to insure that it will be

recognized by the other party. By resolving these interoperability issues, E-SBCs simplify installations.

One other interoperability requirement occurs when another device requires encryption of either the signaling, media or both. In this situation the E-SBC can add the encryption necessary to interoperate with the other device.

With a good E-SBC not only can the customer count on seamless integration with the SIP trunking service provider, and a good source of diagnostics as we discussed last month, but in addition, and equally important, is security, which the E-SBC provides as an integral part of its functionality.   **IT**

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

Back to the Beginning

By Lori MacVittie

It's that time in the cloud hype cycle when we follow the profound advice given to Inigo Montoya in "The Princess Bride" to go back to the beginning. In the case of cloud, that means refocusing on the network and how to address the challenges arising from widespread virtualization and cloud computing adoption.

Virtualization and cloud computing, which have created more agile, fluid server infrastructures, have exposed the hard truth of brittle, inflexible underlying networks that, in order to handle the volatility in today's architectures, have been cobbled together with scripts and file-based configurations. Recognizing these techniques will likely not withstand the deluge of change and rate of growth putting pressure upon them (and their scripts and configuration files); the market is turning to virtualization to resolve the situation and create a network as fluid and flexible as the application infrastructure it must support.

These efforts are now – whether accurate or not – lumped together into a single movement called software-defined networks, or SDN for short. Like cloud, its definition is wispy

be enabled in order to fully execute on a network virtualization strategy. Conversely, while existing protocols are (for the most part) supported by network infrastructure, even in a single-vendor server virtualization scenario, there may be gaps in hypervisor and operating system support for existing protocols.

That leaves implementers in a bit of a bind, doesn't it?

Because the goal of SDN and nascent virtualization protocols is to create a virtual network decoupled from the underlying L2/L3 physical network, the case can be made that network infrastructure need not adapt at all in order to become more flexible. But such a view would be naïve and ignore the impact of virtual networking on the network regardless of native support for its protocols within the infrastructure. Changes in packet sizes due to insertion of virtual network-supporting identifiers and the reliance on such protocols on multicast support are merely two facets of virtual networking that will impact the network regardless of native support.

It's time to start formulating a strategy for implementing the next big thing: network virtualization.

and subject to interpretation, but in general its focus remains on imbuing the network with the agility necessary to bridge the widening gap between traditional network infrastructure and modern, agile application infrastructure.

One of the subsets of SDN focuses solely on the use of emerging and existing protocols to decouple networks from static, inflexible constructs such as the (now obviously poorly named) VLAN. Emerging tags and tunnels protocols from competing virtualization vendors – VXLAN and STT from VMware and NVGRE from Microsoft – are competing with existing protocols such as VPLS, Q-in-Q, and GRE for mindshare, all attempting to be the next big thing in virtualization.

At issue for many organizations leveraging a dual (or more) vendor strategy to server virtualization is support for these emerging SDN-related standards not only in competing vendor products but also in the network infrastructure, where support must also

And one could argue (convincingly, no doubt) that one of the roles of network infrastructure is to provide functions such as network protocol transition. The logical place to provide for transitioning between protocols is in the network, whether IPv4 to IPv6 or VXLAN to NVGRE. And if the network is going to need to transition between two protocols, that implies the network is going to have to support both protocols.

That ultimately means network infrastructure is going to end up natively supporting these new protocols and playing a part in SDN. Look this year for a spate of vendors announcing support for both – and likely more – pieces of the SDN puzzle. With the attention back on networking and in particular, network virtualization, it's time to start formulating a strategy for implementing the next big thing: network virtualization. **IT**

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

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By Max Katz

Mobile Web Apps vs. Native Apps

Web apps vs. native apps is a topic that still excites readers to this day, as if it were anticipated that one side will win and the other will lose.

Contrary to popular belief, the discussion doesn't need to produce a winner and a loser. Instead of classifying apps as web apps or as native apps, why not just call them mobile apps? I believe mobile app is a great name. Under this name there are simply two variations of mobile app that can be created: web app and native app. A web app is an HTML5, JavaScript, CSS app running in a mobile browser. Now, you might wonder, why not just call this a mobile site? This is a fair point, and I believe the term mobile site can also be used. However, it is common to distinguish a mobile web app by one important extra feature: that it is invoking some remote services, usually a REST API (instead of just loading a static mobile website). The second variation is the native app, one that is downloaded and installed on the mobile device.

It's important to note that a third variation of mobile app can also be created: a hybrid app. A hybrid mobile app takes an HTML mobile app and inserts it inside a native wrapper. So while the inside of this app is made with HTML, JavaScript and CSS, the outside is a native shell. This kind of app is also downloaded and installed on a device. Although there are differences in how hybrid apps are implemented compared to native apps, most consumers can't tell native apps apart from hybrid apps. Hybrid apps are distributed in the app stores, just like native apps.

There are a number of important factors to consider when deciding whether to go with a mobile web app or a mobile native app.

Skills
Building native apps requires strong knowledge of Objective C (iOS), Java (Android), and C# (Windows Phone). Finding developers with the necessary experience is still not easy. On the other hand, we have been building web applications for the past 20 years. Even though building a mobile web app requires more specialized skills, the foundation is still HTML, Java-Script, and CSS. Finding strong developers should be easier in this case.

Platforms
With native development, the number of apps you need to build directly relates to the number of platforms you need to support. Today, most companies must support at least iOS, Android, and probably Windows 8/Phone, followed distantly by BlackBerry. A mobile web app can be opened on any device with a browser, phone, tablet, or anything in between. Even though the notion of "build once, run anywhere" sounds very nice, differences in mobile browsers and their support for the latest HTML5 features will require extensive testing and possibly with workarounds (unless, of course, it's OK for your app not to support all the browsers.)

Features and Performance
Without a doubt, native apps have full access to the underlying mobile platform. Native apps are usually very fast and polished, making them great for high performance apps or games. Mobile web apps, on the other hand, have limited (but growing) access to device features and APIs. With JavaScript engines in the browsers getting faster, mobile web apps perform well but still fall behind native app performance.

The extra jolt of performance that dominates natively developed apps is not always necessary. Many business applications do not necessarily require such high levels of performance. In these cases, web and hybrid apps are more cost effective, efficient, and dynamic due to API adaptability. On the other hand, games that require more advanced performance features should utilize native development.

Publishing to App Stores and Updating Apps
Regardless of the platform, native and hybrid apps are published to an app store. Apple has the strictest rules for accepting apps into its store. It requires the app to run fast and follow some basic UI principles. It could take anywhere from one to two weeks for Apple to either accept or reject an app.

Apple's stringency in App Store acceptance is contended by Google's somewhat more lenient rules, which don't necessarily adhere to the same rigid standards, and therefore accept apps more readily into its Google Play marketplace. Windows, on the other hand, takes a more middle-of-the-road approach when it comes to app acceptance. For whichever platform, any updates to native apps would fall under the same rules and regulations.

A mobile web app doesn't need to be published to any store, because it is simply accessed by its URL in the browser or an app icon/bookmark on the phone home screen. App updates are very simple as well. Just push any changes, and the next time the app is opened, the user will get all the new features.

Summary
A native mobile app can produce the best user experience, can give you the best access to device features, and can be discovered in the app stores. On the other hand, building a native app on every major platform requires more socialized skills, a longer time to market, and a bigger budget to build and maintain. For this reason many apps get built as web apps or hybrid apps.

A mobile web app can produce a good user experience that is consistent across a broader range of platforms. As browser and JavaScript engines get faster with every release, the user experience gets better and better and the apps run faster and faster. Once created, this kind of app can be run on any platform, device, phone, or tablet with a browser. On the other hand, browsers on different platforms do not uniformly support all the latest HTML features and API, which can make developing and testing challenging.

A hybrid app offers many of the advantages of both approaches: discoverability in the app stores, access to the most common device APIs, and broad device coverage while not requiring the specialized skills, bigger budgets and longer time to market that are more typical of fully native apps. **IT**

Max Katz is a mobile developer strategist at Tiggzi (www.tiggzi.com), which offers a cloud-based online platform for building mobile apps for iOS, Android and tablets devices.

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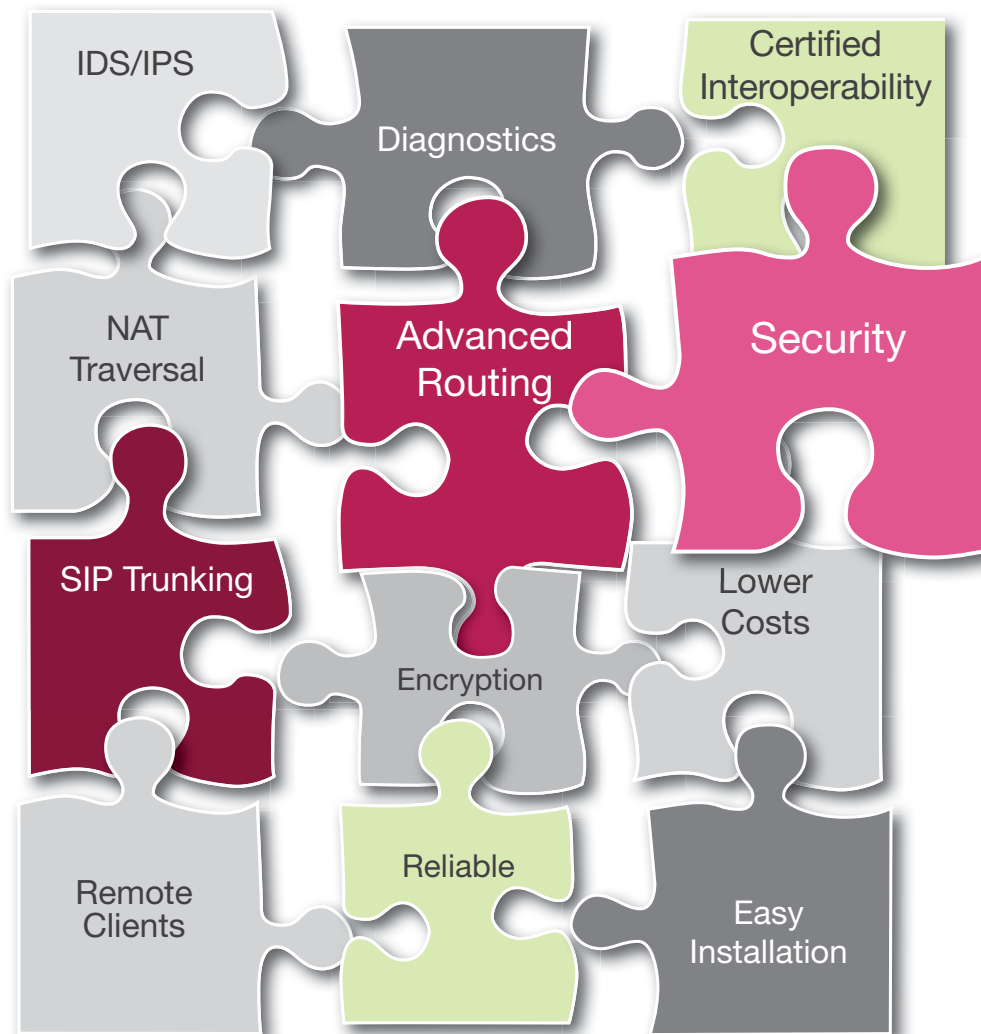
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BRINGING IT ALL TOGETHER

Cyber-Arms Race

By Michael Stanford

Denial of service attacks are a terrible nuisance, and they appeal to the news media, but they are a blunt instrument, impossible to go unnoticed, and rarely sustained for long.

But security breaches that involve data theft can be a lot more subtle. Even worse than getting hacked, is getting hacked and not realizing as an attacker establishes a presence on your system, then quietly leaks valuable data out over months or years. This type of attack is termed an advanced persistent threat. The attacker strives to be as unobtrusive as possible, taking the data a little bit at a time so as not to set off any alarms.

There are two stages to such an attack. The first is getting a foothold in the target system; the second is staying there undetected while plundering the victim.

The advent of enterprise mobility has blurred the boundaries of the LAN, making it more vulnerable. Firewalls, virus checkers and other traditional defenses against the initial attack inevitably let some threats through, for example spear-phishing e-mails or compromised USB flash drives, so a second line of defense is essential.

The conventional tool for this is the intrusion detection system, which inspects network traffic and identifies malicious packets. IDSs compare each network packet to a list of signatures of known threats. They identify most malicious traffic, but unfortunately not 100 percent. IDSs suffer from a serious limitation: They only detect known threats.

This means that they can't recognize previously unobserved threats, or even known threats of the type that dynamically rearrange their own code to change their signatures. Even worse, the library of known threat signatures exceeds 30,000, and no IDS has the capacity to scan for more than 2,000 of these at once. So there is a good chance that the IDS will fail to detect even a known threat.

This deficiency in conventional IDSs has driven the development of a new technique for combating advanced persistent threats. It is called network behavioral analysis. The basic idea of network behavioral analysis is the opposite of detecting malicious traffic. Instead, it builds a predictive model of normal behavior on a network, and issues an alert when anything unexpected happens.

The challenge here is to avoid a profusion of false alarms, so the more sophisticated NBA systems maintain metadata about a large number of networks, so once an anomaly is determined to be harmless, it no longer causes an alert anywhere.

The cyber arms race continues, with the black-hats continuously upping the ante. There is currently no silver bullet for defense, but network behavioral analysis has become an essential element in the defensive repertoire. **IT**

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

SECURITY BRIEFS

In the last 5 to 6 years, cyberattacks in U.S. have expanded rapidly – from about 5,000 to 45,000-50,000 incidents per year – and many of those attacks relate to our critical infrastructure, Benga Erinle, president of 3eTI, tells INTERNET TELEPHONY. ICS CERT, part of Homeland Security, has issued many alerts asking utilities to monitor their customer-facing systems for compromises, he says. CERT also issues alerts to pipeline companies putting them on notice when it learns that hackers are trying to gain control of their pipelines, Benga adds. But while the Obama administration has talked a lot about cybersecurity over the past four years, and there were two bills floating around Congress for a while about what private companies that are responsible for the nation's key infrastructure need to do to protect it from hackers, the federal government has yet to implement any legislation relating to this issue. What will likely happen is that President Obama, who leaned toward the Liebermann bill, will issue an executive order requiring organizations that believe their key infrastructure is under attack to report that to the DHS, Benga says. He adds that would be consistent with similar key infrastructure requirements that the U.S. already has in place for the air traffic and maritime verticals.

SMBs and outpatient facilities experience the bulk of security breaches in the health care sector. That's just one of the many data points revealed in Verizon's annual Data Breach Investigations Report. Another is that many thefts of intellectual property go undetected for long periods of time and can be tough to address once they are uncovered. "Understanding what happens when a data breach occurs is critical to proactive prevention," says Wade Baker, Verizon's director of risk intelligence. "Through our more targeted analysis, we are hoping to provide answers to businesses around the globe that want to protect not only their data but their reputation."

Thrive Networks, a Staples Company, recently unveiled a solution that it says addresses the security headaches associated with the bring-your-own-device trend. It's a cloud solution called Cloud Workspace that enables people to view their work desktops from any device, anywhere, via an Internet connection. This solution is reportedly powered by Allentown, Pa.-based independenceIT's Cloud Workspace platform.

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By Peter Radizeski

Cross-Selling for Survival

The rumblings I hear inside the carriers are mainly that the agent channel just isn't moving the needle. In some cases, the inside sales have higher sales tickets. Note that some of this is due to the fact that direct salespeople do a better job of upselling than agents do.

Channel heads talk about agents needing to add value. What that means varies.

The one thing that agents need to understand is that the line item on the balance sheet for commissions keeps increasing – and has to be explained to not be wiped out.

Each carrier has a different service they want pushed. That service is the new metric that the C-suite examines.

Agents should start thinking of ways to sell that new service, especially for carriers that the agent has a lot of business with. Going forward – as cloud, apps, managed services take a bigger spotlight – less emphasis will be put on transport and T1.

Agents spend most of their days hunting, not worrying about carrier strategies. However, as this industry goes through the latest round of turbulence, agents need to be cognizant of how internal changes at carriers will likely affect their income.

We have seen TDM slowly slide off the compensated products addendum. We have seen long-time POTS CLECs transition to cloud. Take this as the warning it is: It is time to re-think and re-tool.

I am not saying you have to go cloud, but I am saying that for your own benefit you need to add more services to your catalog, more tools to your toolbox. Those services can be as simple as conferencing or as complex as VPS.

For the sake of your base, you need to go back in and cross-sell to your customers the services that are popping up on Wall Street's screen, like hosted Exchange, backup and collaboration. Many carriers offer these services – and many surveys cite that the SMB market is looking for these services and will buy them from you – if you just offer them!

In the end, adding some services will get you more revenue, a stickier customer, and a satisfied carrier. **IT**

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

By Paula Bernier

Cool, Organized & Under Control

Panduit Gets Physical with Data Centers, Enterprise Networks and Industrial Applications

Data centers and enterprise networks have become the center of the universe for many organizations in recent years. Ethernet-based communication has even made its way onto the factory floor. To help businesses and their partners efficiently house, interconnect, organize, power, and secure the gear that enables communications within data centers, enterprise networks, and at industrial plants, Panduit provides a broad array of solutions.

The 55-year-old, privately held company got its start providing electrical products for routing, termination and organization of physical assets, explains Panduit CTO Jack Tison. Years later, when Ethernet moved into the mainstream and token ring started to fade, Panduit expanded its portfolio to address Ethernet enterprise networking products. Since then, the company has worked to apply its product set to a broader range of applications involving Ethernet and to address the ever-growing transmission speeds required by today's communications.

Panduit understands that today's economic climate requires businesses to be flexible and scalable. But being able to address real-world changes or challenges in a quick and efficient manner can be problematic if the physical infrastructure runs on different systems that operate in silos.

That's why Panduit developed the Unified Physical Infrastructure, or UPI, approach.

The UPI approach takes typically disparate and segregated systems — communication, computing, control, power, and security — and aligns them into a single, agile unified physical infrastructure that minimizes risk, increases flexibility and delivers maximum performance throughout the network — and the business.

The solutions portfolio that Panduit provides is extensive, with offerings for data center, enterprise, and industrial applications. A wide range of Panduit product systems support these solutions, including cabinets, racks and cable management; fiber optic systems; copper transmission systems; electrical solutions; grounding systems; outlet systems; overhead/under floor cable routing; physical infrastructure management; power over Ethernet gear; power and environmental management solutions; safety and security products; surface raceway systems; terminals; toolkits; wiring duct; zone cabling systems; and more.

To help enterprise customers quickly and easily address data center best practices, Panduit has partnered with leading technology providers such as Cisco Systems, EMC, and VMware to deliver pre-configured solutions, which Tison calls the most highly engineered private cloud infrastructure offerings on the market. The various pre-configured solutions include compute, storage and networking infrastructure managed by a single orchestration platform – in a prepackaged format that can consist of a single or multiple cabinets.

"The breadth of our products is what allows us to understand the application a lot more in depth and much more broadly," says Tison, adding that Panduit was able

to put together the cabling, containment and interconnect portion of pre-configured solutions entirely from the company's own products and in a way that could scale.

Panduit is doing something similar in the industrial sector.

In collaboration with Rockwell Automation, which is the largest company in the world dedicated to industrial automation, Panduit has designed a pre-configured Micro Data Center (or MDC) to enable rapid installation of industrial-grade switching, server functionality, storage and a demilitarized zone (which offers integrated communications between a business's enterprise network and plant floor, while keeping data on both separate and secure).

Panduit and Rockwell Automation also recently demonstrated an upcoming solution based on Augmented Reality technology, which allows a user to point a camera-enabled device at a control panel to get readings on temperature, network traffic and other parameters from the gear inside the unit. This solution is slated for general availability toward the middle of 2013.

On the software front, Panduit is focused on providing businesses with solutions to allow for better visibility, asset management, efficiency and power management. Panduit's first software-based solution enables organizations to manage and authorize moves-and-changes related to physical interconnects remotely from a terminal.

More recently, Panduit has expanded into power management, so its customers no longer have to over-provision power and cooling. The August acquisition of Unite Technologies Ltd. helped further Panduit's power management strategy. Now Panduit delivers software tools to enable customers to do centralized tracking of IT infrastructure assets on a single platform; get power consumption and energy management reporting; see proactive capacity trend analysis; gain insight into capacity limitations and stranded capacity; conduct access control, security and environmental monitoring; process documentation of IT assets, moves, adds, and changes; get visibility into under-utilized assets and resources and unauthorized patch field changes; perform root cause analysis of physical network

Panduit's Leed Gold Certified World Headquarters Tinley Park, Ill.

problems; and achieve interoperability and integration with leading network, storage and power systems.

This data center power management space, known as data center infrastructure management, recently has become an important industry area of interest. Research and consulting firm MarketsandMarkets forecasts that the DCIM space will grow from $307 million in 2011 to $3.14 billion in 2017 as the global push for energy efficient data centers expands.

The connective thread that runs through many of Panduit's solutions addresses the fact that real estate is pricey, as is the cost to power equipment. So Panduit provides solutions that help customers make the most efficient use of the space and power in the data center and throughout the enterprise.

In fact, Panduit offers assessment and advisory services to help organizations get a better handle on their current physical infrastructure assets and how they can more closely align them with industry best practices for more efficiency and better reliability. Panduit points out that requirements related to physical infrastructure concerns

such as thermal management, power, telecommunications bonding, space utilization, cabling and cable management frequently change over time in light of company and technological consolidation, the introduction of new technologies like 40GBase-T and virtualization, and other factors.

Another connective thread that runs throughout Panduit, says Tison, has to do with the high performance and high-quality solutions it offers. Organizations can purchase and deploy Panduit solutions with "absolute confidence" – regardless of the size of the project or global location, he says. Panduit's global value chain combines manufacturing, distribution, technical support, and service in order to streamline procurement and delivery, as well as to ensure a consistently high level of quality and customer service worldwide.

"Our founder was an electrical engineer, and he set very, very high expectations for the company and for each person employed," says Tison, referring to Jack Caveney Sr. "His rigorous approach and his demand for the best-performing products at the highest quality level – we carry that forward today." **IT**

Network Infrastructure

Integra Telecom Aims to Take Growth to the Next Level

2013 truly will be a year of new beginnings for Integra Telecom. The Portland, Ore.-based competitive services provider has a new strategic investor and is readying to introduce a new brand and website to better reflect the company's strategy.

Like a lot of CLECs, Integra started life with a focus on small and medium businesses, to which it sold TDM-based voice and Internet access services. However, Integra is now focused on the execution of a strategy it set out about three years ago during its reorganization. That entails delivering a wider variety of networking and communications options, including cloud solutions, Ethernet and wavelength connectivity and managed services, to a broader customer target, which is a bit more up-market, explains Integra Telecom CEO Kevin O'Hara. In the past, he adds, Integra's customer base was dominated by single-location customers, but today 70 percent of its new sales involve multi-location deployments. And 61 percent of Integra's revenue now comes from customers billing more than $1,000.

The change in strategy has enabled Integra to achieve what O'Hara describes as modest revenue growth.

At the beginning of 2012, he says, Integra had a couple of financial objectives. In 2011 the company had significant cash burn due to investment, and EBITDA had started to decline. So it wanted to protect the downside by getting revenue growing, or at least stop the decline. It has been successful on that front. Integra's EBITDA expanded quarter over quarter in 2012 and will be greater in 2012 than it was in 2011, which hasn't happened at Integra in a few years, says O'Hara, who joined the company in October of 2011. Last year also saw Integra return to free cash flow on an unlevered basis.

The goal now is to realize greater growth.

O'Hara indicates that Integra's new investor Searchlight Capital Partners, L.P., which late last year bought out Goldman, Sachs & Co.'s stake in the service provider, will be an important ally in achieving that growth. Searchlight, he says, is interested in being involved with Integra in a more meaningful way than its investors have been in the past. Because Searchlight owns the largest block of Integra, he adds, it will be able to drive behaviors of other investors to help the company build out its network and grow its business.

Integra already has invested more than $2 billion in its network. That network includes 3,000 miles of metro network fiber and

The Integra Customer Targets

Enterprise: Primarily focused on mid-size businesses while opportunistically serving larger enterprises concentrated in our market area

Health care and professional services verticals

Wholesale: Traditional carriers, wireless providers, resellers, data centers, content providers

Government & education: Federal, state and county government, federal system integrators, research and higher education

Small business: Customers with fewer than 50 employees and less than $1,000 in MRR, with single to few locations

Indirect: Agent partners

5,000 miles of long-haul fiber. These assets are most effective for businesses on West Coast, which may have limited business outside the region. O'Hara adds that Integra is now putting more focus on its underlying fiber network, which he says has been underused to date. About 2,200 buildings are now on the Integra fiber network; that's up 11 percent year to date and up more than 50 percent since the beginning of 2011. About 16,000 additional buildings are within 2,500 feet of existing Integra fiber. That represents an addressable monthly revenue of approximately $245 million, according to the company. Because Integra's fiber footprint is not ubiquitous, even within its region, the company is using Ethernet over copper to reach additional buildings with connections at 50- to 60mbps speeds. Integra can reach more than 400,000 additional businesses with Ethernet over copper solutions.

SMBs, dominated by blue collar industries, are a dominant part of Integra's customer base. Wholesale is also an important focus for Integra. In 2012, the company made its largest sales in the government and health care verticals. However, O'Hara says that Integra remains underrepresented in education, government and health care arenas – spaces in which Integra sees the potential for substantial upside going forward.

Integra is taking a different tact in reaching customers these days. While the company used to have multiple people covering a particular territory (the Seattle area alone used to have 52 sales people), O'Hara says that each Integra sales representative now is assigned a particular territory. **IT**

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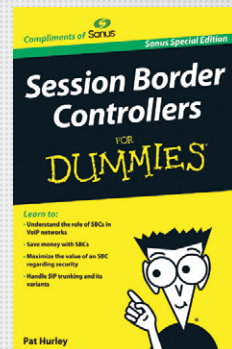
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Plugging in with Phone Power

Phone Power was recently recognized as a top growth company by Deloitte. INTERNET TELEPHONY recently touched base with Phone Power President Jim Murphy to learn more about him, his company and its recent designation.

What's your professional background?
From 1999 to 2005 I was co-founder and president of DSL Extreme, a nationwide broadband ISP. From 2006 to the present I've been co-founder of Phone Power, a nationwide VoIP provider.

How are you applying that background to what you're doing now?
Our specialty is growing a technology-based recurring revenue model. From that perspective this is not a huge stretch from running an ISP.

Tell us more about Phone Power. What does it sell to whom and where?
We have residential and small business products that offer unlimited calling for less than $9 a month. We market both a cloud PBX product and SIP trunk solutions for businesses. The majority of our customers are located all over the U.S., Canada, and Brazil. Our customer demographic ranges from single residential lines to Fortune 100 companies with thousands of lines deployed.

How does what you offer address customers' pain points?
The easy sell is the cost savings. Many customers come to us just for that. But other customers use us for our smartphone integration and advanced call routing features not offered by the traditional telcos.

Jim Murphy

What's unique about your company?
Twenty-five percent of our new sales come from word-of-mouth referrals. Customer service is extremely important to us.

Your company was recently given a designation by Deloitte. What was that designation, and how did Phone Power achieve it?
We were ranked 22nd in their 2012 Fast 500 fastest growing companies in North America with 7,642 percent growth between 2007 and 2011.

Where does your company see growth going forward?
As the residential segment matures, we see continued consolidation in that segment. We've completed three acquisitions in that space over the last three years. Hosted PBX is continuing to explode, as millions of premises-based PBXs become obsolete. Bundling both residential and business segments with a strong mobility offering will be the next growth space for us. **IT**

ActionPacked! Network Visualization Tool Now Supports 1M Flows Per Second
By Paula Bernier

The latest version of the LiveAction network visualization tool from ActionPacked! Networks – which is available now – supports 1 million flows per second.

"That flow rate, looking at other tools, is very much at the high end," CEO Dana Matsunaga said.

The typical flow rate offered by competing products is less than 100,000 flows per second (he said he can think of three products that offer performance in this range) or, more likely, less than 50,000 flows per second.

Larger enterprises and service providers are looking for solutions that address higher flow rates because of the large number of network elements they need to manage, said Matsunaga. Every element in the part of the network that an engineer wants to manage multiplies the flow rate. For example, if there are five routers in the core network being managed, that means the flow rate increases by a factor of five.

Other features introduced with release 2.6 of LiveAction – a software solution that manages, analyzes and configures routers, addressing NetFlow, QoS, Layer 2 LAN,

routing plane and IP SLA – include the ability to do spanning tree protocol. This release also offers additional QoS-related real-time statistics for the Cisco Catalyst 2000 and 3000 devices. Also new is MQC configuration support for the Cisco Catalyst 4500. Matsunaga said that's especially noteworthy because competing products are typically monitoring tools, so they don't do configuration. Improvements to Mediatrace; new ICMP echo in the real-time application wizard; and added VRF support for jitter, video and ICMP echo in the real-time application wizard are also among the new features available now.

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Carrier VoIP & IMS Space Looking Good

The carrier VoIP and IMS market saw solid third quarter results and is on track for positive year-over-year growth, according to Diane Myers, a principal analyst at Infonetics Research. "First, we're entering the long-tail of the legacy softswitch and trunking gateway market, with opportunities for early equipment replacement and new deals that will help slow declines and provide stabilization. Second, IMS deployments continue to grow, and there are pockets of VoLTE and wireless spending. Given these factors, and based on our fourth quarter projections, we're anticipating that 2012 will provide the first annual growth in the carrier VoIP and IMS market in over four years." Key players in this space are Acme Packet, Ericsson, Huawei, Nokia Siemens Networks and Sonus.

Slow Optical Market Likely to Improve

The optical sector is seeing a shift in buying patterns, but growth of investment in the new gear does not yet surpass the losses in spending for legacy infrastructure. That's the word from Infonetics Research in its third quarter 2012 Optical Network Hardware vendor market share report. "Investment in new WDM gear is growing, but it isn't growing fast enough to offset the accelerated declines in SONET/SDH," notes Andrew Schmitt, principal analyst for optical at Infonetics Research. "SONET/SDH spending hit another all-time low in the third quarter, as architectural shifts in wireless backhaul quicken its transition into obsolescence. Carriers aren't allocating scarce capital to out-of-date equipment." The good news is that this year an investment cycle is set to begin in the core network. That will address 100G coherent technology and be supported by what Schmitt calls "the massive ramp in 100G prototyping and trialing activities that are already under way worldwide."

Router Market Growth Stalls

The worldwide carrier routing and switching markets reflected typical cyclical performance, remaining flat in the third quarter, according to ACG Research. The total market saw revenues of $2.75 billion in the quarter, decreasing 1.7 percent quarter over quarter and 2.5 percent year over year. Core routing revenues were down 1.9 percent quarter over quarter and 9.6 percent year over year. Edge routing and switching revenues were down 1.7 percent quarter over quarter and down 0.4 percent year over year. The firm says that ongoing economy uncertainty around the world and aggressive competition will continue to pressure vendors' pricing and margins. "Enterprise CEOs will, most likely, remain conservative and more focused in their IT spending

and hiring for the remainder of the year," states Ray Mota, managing partner. "These factors will continue to force vendors to innovate and develop technology that can deliver significant operational savings as well as address market demands for new and cutting-edge services that are application focused. Despite some vendors providing low guidance for the fourth quarter, AT&T announced a capex increase of $2.5 billion per year."

ALU May Sell Some Assets

Struggling Alcatel-Lucent is reportedly considering a sale of some of its assets to help improve its financial position. The company recently posted a loss and is running through more cash in light of relatively weak network equipment demand. A Nov. 2 Bloomberg story says ALU's "finances could deteriorate if asset sales end up diminishing cash flows, and appeasing debtholders may mean diluting shareholders." It is unclear what, if any, assets ALU may be looking to sell.

ADVA Brings ERP Switching to FSP 150

Ethernet Ring Protection Switching is now available on ADVA Optical Networking's FSP 150 family of products. The ITU-T standard, also known as G.8032v2, provides sub-50 millisecond protection and recovery switching. ADVA CTO Christoph Glingener says: "Our engineers have worked hard to ensure that our ERPS is simple to configure, robust and capable of multi-vendor interoperability. Carrier networks depend heavily on survivable ring topologies, and we have taken this functionality to the next level."

FTTH Design Tool Expedites Deployment

Ericsson is working with JT (formerly Jersey Telecom) in the U.K. to install mobile broadband and deploy FTTH across the island, which has 90,000 inhabitants in 33,000 homes, by 2016. The new fiber network, which is being built under the project name Gigabit Jersey, will deliver speeds of up to 1Gb, more than 50 times faster than the island's existing copper network. The telco is able to expedite the rollout of such services by leveraging a fiber design and automation solution called Ericsson Network Engineer and its Design Assistant module, Lynn Martin, executive director of product management, engineering and inventory at Ericsson recently told INTERNET TELEPHONY. The tool has enabled JT to streamline manual, paper-based network planning processes and eliminate outdated, labor-intensive manual systems.

By Tony Rizzo

Windows 8 – Many Flavors, One Cohesive State of the Art Ecosystem

When Steven Sinofsky (formerly the guy who ran the Windows team and now the latest guy out of Microsoft) and his teams set out to build the next version of Windows, Microsoft had some very ambitious plans on the table for the future, and one enormously pressing need: backwards compatibility with all things Windows 7. Lots of people speak about the decline of Windows from the perspective of units sold, but in fact Windows 7 has been a huge success for Microsoft. It is everywhere, and it is enormously stable.

Along with Windows 7 come all of the surrounding platforms that comprise the Microsoft empire – from core enterprise software (Exchange, SQLServer, SharePoint, etc.) to what is also core for both the enterprise and most consumers, Microsoft Office. Much as Microsoft knew that it could get users to switch to Windows 8, Microsoft also knew that it had to preserve the billions of dollars in Windows 7-based investments that enterprises and consumers have made on every other software platform Microsoft delivers.

The dual need to look ahead in a significant way while also looking backwards and remaining fully compatible – and on top of it adding a new and significant mobile platform to the mix as well as having to build out a thoroughly modern touch interface to accommodate today's emerging hardware mix – was a daunting challenge. The word non-trivial doesn't really get at the magnitude of that challenge.

Here is what we absolutely believe: Microsoft (and Sinofsky needs to get a lot of credit here) has delivered big time.

To achieve every one of these goals Microsoft had to take an umbrella approach to solving the many problems associated with the overall challenge – which resulted in three distinct versions of Windows:
• Windows 8 (which we like to think of as the mother ship)
• Windows 8 RT for ARM processor-based hardware
• Windows Phone 8

To understand the differences, let's look at four specific things: the processors, the operating systems themselves, the user interface and user experience, and the applications.

Processors up in Arms
Most tablets, including Microsoft's own Surface RT, run on 32-bit ARM processors. (ARM has announced a 64-bit processor that may appear in 2014, but for the foreseeable future we are talking 32-bit here.) The most important thing to know about ARM is that it is most emphatically not Intel, but it has an Intel-like presence in the world of mobile devices. When Microsoft first decided to go down the path of a unified Windows 8 ecosystem that would embrace "big iron" (PCs and laptops), tablets and smartphones, the company knew that it would necessarily need to add support for ARM processors.

For a long time the version of Windows that would run ARM-based tablets was known as WOA (Windows on ARM). Eventually WOA was dropped in favor of Windows RT. RT doesn't actually stand for anything. RISC technology, and real time – as in the anytime, anywhere nature of mobility – may have had some influence, but officially this isn't the case. That RT designation has also filtered down to Microsoft's ARM-based Surface tablet that overtly targets the consumer market. An important thing to know about the 32-bit ARM processor is that it will not support more than 4 GB of RAM. (ARM won't be able to support more memory until the 64-bit version emerges).

Microsoft's Surface Pro and every one of the new tablets, Ultrabooks and laptops that will emerge from Microsoft's hardware partners that directly target enterprise users, professionals and prosumers on the other hand, will all run on Intel's Ivy series multi-core processors. These Intel chips not only power the enterprise, but they also support huge amounts of RAM and deliver support for a number of key Intel hardware-assisted security features.

The Operating Systems, the UI and the Apps
The mother ship Windows 8 is the next major version of Windows. It has been built from the ground up with a new Start screen interface that focuses extensively on delivering a 21st century multi-touch- and gesture-based interface. All new Windows apps run from this interface, and all new Windows apps bring with them a different approach to how the user interfaces with applications. Interestingly, Microsoft has actually worked to remove Windows from Windows.

The new interface encourages users to stay within the app and doesn't allow you to have multiple resizable windows open (though a user can have two apps open on the screen if desired). This is a key change, but of course a user can continue to have as many apps open as might be desired. The touch interface (which also still supports traditional mouse point-and-click operations) makes it simple to move between apps, new Start capabilities that used to be handled through the old Start me, and other ca-

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pabilities (some of which Microsoft refers to as charms – options that are customizable by developers for their own specific apps, but which must retain a cohesive charms look and feel).

Win 8 also provides that critical full backwards compatibility with Windows 7 and all Windows 7 applications and enterprise backend software. When a user switches to desktop mode, lo and behold, that familiar Windows 7 UI (and for the most part the older Vista and Windows XP UI) suddenly takes over. With one exception – the old Start menu is no longer there.

We don't have the space to detail the Start menu here, or other issues surrounding the UI, but we've covered it elsewhere for those interested in a deeper dive. The new Windows UI and UX were collectively referred to for a long time as the Metro UI (and you will still hear the term used as such) but have since evolved into simply the Windows 8-style UI (we'll refer to is as W8UI) due to a copyright issue with a German company that already owns the term Metro.

Windows RT is an entirely new version of Windows that was written from the ground up to support ARM processors. Many in the media refer to it as a scaled down version of Win 8, but in fact it isn't a lite version of Win 8 but rather a very highly ARM-optimized version of Windows 8. It is designed to be a speed demon on ARM and to take advantage of what the ARM processor offers from a hardware architecture perspective. But – and this is critical – it behaves exactly the same as Windows 8 does on the version of Windows designed to run on Intel's big 64-bit multi-core processors. There is absolutely no difference between the two in terms of either the new user interface or the new user experience of W8UI.

There is one major difference, however – and this is the difference that will throw most people off (and don't be surprised if Microsoft Store employees

Microsoft's goal is to move all users forward to W8UI over time and to fully wean users away from any old versions of Windows.

aren't able to clearly articulate this) – Windows RT is not backwards compatible with Windows 7 apps or Win 7's desktop or how Win 7 apps and the OS generally behave. What this also means is that Windows RT – and any tablets built on it, including Microsoft's Surface RT – will only run new apps specifically written for Win 8, which must be purchased through the new Windows App Store.

Win RT will not run Win 7 apps today, and it never will. To ensure that users can continue to have access to Microsoft Office, Microsoft has taken the unusual step of including a Win 8 version of Office as part of Windows RT. The Surface Pro will run Win 8, not Win RT. This means, of course, that all backwards compatibility issues go away for the Surface Pro. Not only will the Surface Pro have the Win 7 style desktop available to it, but it will also support all existing Win 7 apps, such as the current versions of Office.

All Windows 8 apps – whether running on Win 8, Win 8 RT or Windows Phone 8, will use W8UI's interface, menu systems, and so on. W8UI is now central to every version of Windows going forward. It is the common denominator across every platform. Win 8 is able to fall back to the Win 7 UI, Win RT cannot – it is much more directly linked to Win Phone 8 in this respect. Microsoft's goal is to move all users forward to W8UI over time and to fully wean users away from any old versions of Windows.

Windows Phone 8 looks and feels and behaves exactly as the mother ship and RT versions of Windows do.

One Cohesive Ecosystem for Tomorrow, Today & Yesterday
That brings us to today. We have Google's Android, which will always remain an outlier as far as the enterprise is concerned, and in most cases will remain an outlier in the home as well. There is no connection whatsoever between Android, Apple's Mac OS or iOS, or any version of Windows, including Windows 8.

Apple has its own cross to bear on this front, as it still has two separate OS environments, neither of which can handle anything the other does. There is no connection between the Mac OS and iOS. Apple wants to get there, but the odds of it doing so are probably 3 and perhaps 5 years away.

All Microsoft has done is to have (uniquely, it can be said) pulled off an entirely cohesive operating system that spans all modern day devices and yesterday's software. Windows 8 works cohesively and it works well.

Bash Microsoft all you want, but when the company delivers, it should get the recognition for doing so. **IT**

Tony Rizzo is senior editor of Mobility-Techzone (www.mobilitytechzone.com), a TMCnet-powered content source offering news and views on 4G, LTE, Wi-Fi and other wireless topics.

By Paula Bernier

High-end Audio Outfit Lowers TCO with West's Hosted UC Solution

When it comes to audio, D+M Group knows its stuff. The $1 billion, Mahwah, N.J.-based company is a manufacturer and distributor of high-end audio equipment for use in commercial applications, the home, and in vehicles.

But when the company needed a new phone system for its own offices, D+M Group wasn't sure at first where to go. After some research, however, the company selected VoiceMaxxCE, a Cisco Hosted Collaboration Solution provided by West IP. As a result, the company was able to lower its total cost of ownership by about 70 percent, says John Jackson, vice president of global infrastructure and vendor management at D+M Group.

In looking for a new phone solution, Jackson says, he was seeking unified communications capabilities that lived in the cloud. That way, he adds, D+M Group wouldn't have to make a large upfront capital expenditure and build a team around the solution to support it.

Verizon was one obvious candidate for D+M Group to consider for the job, as it already had a large partnership with the service provider. But Jackson says Verizon was not ready to release its cloud-based IP PBX/UC solution when D+M Group wanted to make its move, so it looked elsewhere. In addition to Verizon, AT&T and West IP (with which D+M Group had a global agreement for voice and web conferencing) were on the short list. In the end, Jackson says, D+M Group chose the West IP solution based on price and functionality.

West IP's price per user was 15 to 20 percent less than that offered by Verizon, Jackson says.

"Since we have a much larger relationship with Verizon than we do with West, that meant they were serious about the opportunity," he adds.

D+M Group also liked the West IP option because it is based on a developed platform that was already proven with other customers. The platform also delivers call center functionality, which was something D+M Group wanted as well.

Integration was also a consideration for D+M Group. West IP already had integration between its IP PBX/UC solution and a CRM tool D+M Group was using. And when the company started talking with West IP, the supplier already was working on integrating its solution with Lync. That was important because D+M Group already was using Lync via a cloud-based deployment.

"What we want to do is make sure any investments we make, there's some integration between those solutions later on, even if there isn't today," he says.

But in the end the biggest benefit D+M Group got from selecting West IP was probably the support it has received during the implementation process, says Jackson.

> The biggest benefit D+M Group got from selecting West IP was probably the support it has received during the implementation process, says Jackson.

The project management team from West IP operated as an extension of the D+M Group team, he says, adding that his company has more high-level resources than technical ones. As a result, working with West was seamless and involved the same team over and over again.

"The hand-holding from them was great," he says.

As of late November, D+M Group – which has about 2,500 employees and about 30 offices worldwide – had rolled out VoiceMaxxCE at its offices in the Netherlands, the U.K., the U.S., and at new offices. And it was considering whether to bring its large office in Japan onto the cloud-based solution, or whether to integrate that office's legacy solution with VoiceMaxxCE to allow for lower-cost and more seamless communications among locations.

Virtually every location at which VoiceMaxxCE is now used had a different ERP and different phone system, given that D+M Group has expanded over the years via M&A. Of course, that means D+M Group no longer has to shoulder the expense of maintaining this wide array of different systems. **IT**

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By Paula Bernier

ShoreTel Lays Out its Plans for UC Domination

ShoreTel has seen a lot of change in the past few months. And, as they say, change is good. At least it seems to be in this case.

Armed with a new cloud strategy; a spate of recent high-level hires; and revved up marketing, sales and product release efforts, ShoreTel in November reminded its partners gathered in Orlando that it is working on something big. The company aims to make itself into a communications powerhouse. And, so far anyway, it seems to be doing a pretty decent job.

ShoreTel was highlighted in Synergy Research's market share summary report for the first quarter of 2012 as the fastest-growing player in the U.S. enterprise IP telephony market and No. 3 in terms of market share. ShoreTel grew its U.S. enterprise IP telephony revenue market share from 6.5 percent in fourth quarter 2011 to 7.7 percent in first quarter 2012, resulting in market share growth of 19 percent. In contrast, the Synergy report shows, Avaya and Mitel experienced declines in market share of 9 percent and 4 percent, respectively.

ShoreTel CEO Peter Blackmore at the ShoreTel Champion Partner Conference said the company's most recent financial year saw the company grow 15 percent in a market that was basically flat. In fiscal 2012, ShoreTel won 4,600 new customers, representing 46 percent of the business; nearly doubled the number of wins of over 1,000 seats; expanded vertical selling (winning five new state contracts); added sales presence in South Africa, India and the Philippines; implemented two-tier distribution in the U.S. and Canada; and increased overall partner satisfaction from 7.72 to 7.74.

In the fourth quarter, when the company made a lot of changes to help spur its growth, ShoreTel had the best quarter in its history. And ShoreTel's NetPromoter Score, which is now at 63, is the highest in the industry, said Blackmore, adding that Cisco is the next best in the industry at 40 and "it goes way down after that."

About a week following the November event in Orlando, ShoreTel came out with quarterly results for July through September 2012. In discussing these results, the company said its total revenues increased 39 percent from the first quarter of fiscal 2012 to $75 million. Revenue declined 4 percent; ShoreTel attributed this to seasonality. For the first quarter, total recurring revenues, including the monthly recurring revenue from the cloud division and the support revenues from premises customers, grew to 33 percent of ShoreTel's overall business. Service providers accounted for approximately 9 percent of the company's billings in the quarter. And the company's international revenues came in at $8 million for the quarter, meaning they were up 19 percent from the first quarter of fiscal 2012.

Peter Blackmore

ShoreTel's premises-based business added more than 1,100 new customers and generated revenue of $59.3 million, a 10 percent year-over-year increase in what is a seasonally lower first quarter. In the premises business, ShoreTel saw a 9 percent increase in product revenues to $45.8 million over the first quarter of fiscal 2012. Service and support revenues were up 16 percent from the year ago quarter to $13.5 million.

On the cloud front, ShoreTel increased the total number of seats deployed to 78,000 as of Sept. 30, representing a 36 percent increase over a year ago. Cloud bookings, the company added, were up 22 percent over the September quarter last year. And revenues were $15.7 million, up 27 percent over last year and up 10 percent from the fourth quarter.

David Petts, the company's new senior vice president of worldwide sales, said ShoreTel is growing rapidly and set to take on some of the giants in the industry. The closing slide of his presentation featured a ShoreTel logo feasting Pac-Man-style on Cisco.

Expanding from a premises-based provider of "brilliantly simple" IP phone solutions with built-in unified communications and contact center functionality, into a company that also offers these capabilities via the cloud and to mobile devices

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is a central tenet to the new strategy. Also key is increasing its name recognition; in an effort to make that happen, ShoreTel is spending 30 percent more on marketing than it spent last financial year, Blackmore said.

Faced with a build-vs.-buy decision on the cloud front, ShoreTel opted for the latter, purchasing M5 Networks in February. As TMCnet columnist Peter Radizeski of RAD-INFO Inc. reported at the time: "M5 Networks migrated off the BroadSoft M6 platform to its own softswitch in 2010. It is a good sign for the industry that a premise PBX maker sees the light and buys a hosted PBX provider."

Blackmore explained that "to really stand out, we bought a cloud company. That's the second company we bought in two years." The other acquisition was of enterprise mobility platform outfit Agito Networks, a $11.4 million deal announced in October 2010. (Expect new offers from ShoreTel on the mobility front in the not-too-distant future.)

M5 was the best of the 25 cloud candidates ShoreTel looked at, he explained, because it had the lowest churn, the highest ARPU and the highest customer satisfaction rate of any company in its category. In an October Q&A with Network World, Blackmore said ShoreTel just had its first full quarter (the June quarter) with M5 "and their bookings gross was 43 percent higher than the previous year, which is excellent."

The industry is changing, Blackmore said, and to be successful ShoreTel needed a premises business and a cloud business "and both of them live together." Blackmore during his ITEXPO Austin speech in October also emphasized the fact that ShoreTel sees cloud- and premises-based UC as two sides of the same coin, saying "there are two ways of providing a [UC]

> Superstorm Sandy in the Northeast knocked out service for ShoreTel Sky customers in the New York area just months before ShoreTel was able to put a failover plan in place.

service to a customer, but they are one market, not two markets."

However, it should be noted that sales of ShoreTel Sky, the name of the company's cloud-based offer, currently don't count against channel partner sales quotas. Responding to a question at the Orlando event about this matter, Petts said this is an improvement upon the previous cloud option ShoreTel had for prospects before it bought M5 – which was to lose the deal completely. But he added that ShoreTel is working to create more incentives around cloud sales.

During his speech at the ShoreTel Champion Partner Conference, Blackmore highlighted Gartner data indicating the cloud will be 42 percent of the market by 2015.

"There will be more change in our industry in next 48 months than there has been in the last 10 years," said Blackmore, who added that change will be driven by changes in technologies, business model changes, and external factors.

The quarter in which ShoreTel took on M5 and made other big moves – such as fundamentally changing the way it goes to market, its partner service structure and its approach to engineering so it can introduce more new products than ever before – was "amazing," according to Blackmore.

But ShoreTel's expansion into the cloud has not been without growing pains.

Superstorm Sandy in the Northeast knocked out service for ShoreTel Sky customers in the New York area just months before ShoreTel was able to put a failover plan in place. Blackmore said ShoreTel Sky will have complete failover by the first quarter of 2013, adding "I think we've managed the customers very well despite that."

In addition to the M5 acquisition and new cloud strategy, other recent changes at ShoreTel include the company's move to simplify the role of the direct interface to all gold and silver partners, Blackmore explained. Members of the ShoreTel channel partner team used to work with 30 to 50 partners, but now can focus on around 10 companies, he said. ShoreTel also created an independent sales team to cater to service providers, he said, and strengthened its support organization.

To head up the channel partner effort, ShoreTel brought Joe Vitalone back into the fold. Vitalone did a stint at LifeSize between his first and current gigs at ShoreTel.

Vitalone is just one of several recent new hires ShoreTel has made in an effort to expand growth.

"We're going to take this company, with your support, to brand new heights," Blackmore told the crowd of channel partners in Orlando. **IT**

By Paula Bernier

AdvaTel's UC Solution Gets New Traction with Top-Tier TEMs

Many advances in technology arise not from the companies' whose names appear on particular products, but from organizations that develop solutions that live under the hoods of those solutions. AdvaTel is one example of a company with technology you may have heard of, but whose name is not as familiar. After reading about other unified communications solutions in the market, however, AdvaTel Managing Director Michael Terry just couldn't help but crow a bit about what his company brings to the table.

Based in Australia, AdvaTel is an OEM supplier to such leading UC companies as Alcatel-Lucent and Avaya. It's also a supplier to other prominent networking companies, including ADTRAN, GENBAND and Metaswitch. In fact, AdvaTel supplied Alcatel-Lucent with some of the technology behind the My Instant Communicator Social Networks solution that ALU unveiled in December.

AdvaTel prides itself for having designed a UC solution aimed at SMBs.

"SMBs have up to 80 percent of their calls external, so to use a solution that looks just at internal calls is effective less than 80 percent of the time," says Terry.

That said, the interface of the AdvaTel solution, which is integrated with Outlook, includes a list of contacts along the right side of the screen and shows the status of both internal and external prime contacts as well as how to reach those individuals via Skype, chat, mobile number, work number – and which of those options will work at the moment in time at which the employee is viewing the screen.

"It won't let you go down a communications dead end," says Terry.

About 26 percent of calls finish with one person talking about what they will do to follow up based on that discussion. The AdvaTel-designed UC solution addresses that by enabling users of it to input a note about the planned follow up and pop that note on their computer screens when the time rolls around to deliver on the follow up. AdvaTel's own sales people use that feature quite a lot when they have a quote, says Terry, adding "I use it probably five or six times a day."

In the same window as prime contacts (aka buddy list), you can scroll down to see all your contacts listed alphabetically. You can also locate contacts by phone number, by part of a phone number, by company or name, or by part of a name.

In September, AdvaTel announced the release of a SIP variant of InTouch for the SIP PBX and hosted PBX market.

"SIP InTouch is especially well suited to the SMB/cloud market segment as it does not require a server or any additional IT infrastructure yet it provides presence to all of your internal and external contacts," says Terry. "Being a true Outlook plugin, it is always there when you need it and you do not have to go to separate applications to use all of its communications features."

AdvaTel's original go-to-market partner for its InTouch solution was Nortel, which released it in 2008. The product was on the market just 24 days before Nortel went into Chapter 11.

Terry says Avaya has had access to the AdvaTel solution, to which AdvaTel retains intellectual property, for the last 12 months, but that it hasn't done much it. However, the good news is that the solution is now part of Avaya's Select Partner Program, which means it has an Avaya part number so when a distributor is going through a screen to place an order it's in that same ordering system. It also means it's part of the Avaya sales structure.

"This is excellent, as some large resellers (carriers, etc.) cannot take on a number of minor suppliers for the required additional applications that they may need," says Terry. "Now products like InTouch can now be ordered via Avaya and their established channels."

Terry was also excited to report that Alcatel-Lucent is leveraging AdvaTel technology in its My IC Social Networks solution.

Katerina Cerny, SMB solutions manager at Alcatel-Lucent Enterprise, explains that My IC Social Networks merges Outlook directories and presence with internal and external contacts bridging interactions with Skype, Facebook, Yahoo and MSN with additional features and capabilities. It also offers telephony with OmniPCX Office Rich Communications Edition. My IC Social Networks is a feature update within Alcatel-Lucent Enterprise's OpenTouch Suite for SMB which includes various solutions with the OmniPCX Office Rich Communication Edition Release 9.0. The focus of the release is on delivering a range of new capabilities that facilitate information sharing and collaboration for on and off site workers to increase productivity and customer interactions. **IT**

UC is Bright Spot in Enterprise Telephony

While it's been a tough year for the enterprise telephony market, which has seen quarterly year-over-year declines, uptake for unified communications has been bright, according to Infonetics Research. Diane Myers, principal analyst for VoIP, UC, and IMS at Infonetics Research, says: "The demand for tools that aid employee productivity and flexibility is fueling growth in this segment, and Microsoft's Lync has been the primary beneficiary, enjoying over 40 percent sequential growth in the third quarter." In the third quarter of 2012 the global enterprise PBX market (TDM, hybrid, and pure IP PBXs) was up 2.8 percent from the previous quarter but down 5.6 percent from the year-ago third quarter, due to continued softness in EMEA. Revenue is declining at a faster rate than shipments: for the first time, the average revenue per PBX line slipped below $200.

Gartner: 8x8 Makes Magic

8x8 is listed as a market leader in Gartner Inc.'s 2012 Magic Quadrant for Unified Communications as a Service in North America. "Gartner analysts evaluate UCaaS service providers based on the breadth, quality and overall maturity of their applications, processes, tools and procedures that enhance individual, group and enterprise communications," Gartner analysts Daniel O'Connell and Bern Elliot wrote in the Magic Quadrant for Unified Communications as a Service, North America report. "Ultimately, UCaaS providers are judged on their ability and success in capitalizing on their vision." 8x8 Chairman and CEO Bryan Martin added: "With 85 patents granted and additional applications pending, 8x8 continues to innovate while delivering affordable solutions that minimize customers' upfront capex and ongoing opex and at the same time greatly enhance the functionality, flexibility and reach of their business communications."

Forrester has Low Expectations for Windows 8

In a recent blog with the headline "By The Numbers: Is Windows 8 Dead On Arrival In The Enterprise?", Forrester Research analyst David Johnson writes that only 5 percent of IT decision makers expect to adopt Windows 8 in the next year and notes that many of these folks are still working on the migration to Windows 7. "Windows 8 is seeing roughly half of the interest from IT hardware decision-makers that Windows 7 saw at the same point in its release cycle," he states. "Only 24 percent of firms expect to migrate to Windows 8 but have no specific plans to do so, versus 49 percent for Windows 7 back in 2009. Only 5 percent of firms have specific plans to migrate to Windows 8 in the next 12 months, versus 10 percent for Windows 7 in 2009." Forrester does not expect enterprises to adopt Windows 8 as their primary IT standard, he adds; however, he says employees will force IT to have a formal support policy for Windows 8 for employee-owned devices and that Windows 8 will accelerate BYOD demand.

BroadSoft, OAISYS Solutions Interoperable

The OAISYS Tracer and Talkument call recording solutions have successfully completed interoperability testing with the BroadSoft BroadWorks voice application platform. David Bukovsky, vice president of products at BroadSoft, says: "By completing interoperability testing with OAISYS Tracer and Talkument, service providers can quickly capitalize on the migration by enterprises from on-premises platforms to a virtual call center infrastructure with an offering that introduces new capabilities that can enhance operational efficiency." This interoperability effort is in direct response to the ever-expanding array of industry and government regulations that have prompted many businesses to become increasingly concerned with ensuring proper documentation and archival of their phone-based communications, the companies explain.

Toshiba, Jabra Certify Interoperability

The Jabra GO 6470 hands-free headset is interoperable with Toshiba's SoftIPT softphone and desk phones that work with Toshiba's IPedge and Strata CIX IP business telephone systems. Additionally, the Jabra GO 9470 is compatible with Toshiba's VIPedge cloud-based business telephone solutions. The Jabra GO 6470 can connect to three devices – desk, mobile and softphones – at the same time, enabling the use of one headset for all calls. The Jabra GO 6470 is part of the Jabra GO 6400 Series and features high-quality sound, Noise Blackout technology and three wearing styles.

Avistar Launches ConnectWare

Avistar ConnectWare is a cloud-based voice and videoconferencing solution designed for technology, OEM, service and business partners that want to make videoconferencing available anywhere, to anyone on any device. It is available on a branded or white labeled basis. "By leveraging the cloud to deliver an economical and scalable multiparty voice and videoconferencing solution, while targeting technology, OEM and service partners, the Avistar ConnectWare solution will fill important voice and videoconferencing requirements within a broad spectrum of industries," says Rob Arnold, Senior Analyst at Frost & Sullivan. "Avistar ConnectWare is an important solution for our industry as it leverages Avistar's proven all-software communication solutions and delivers this technology via the cloud to technology, OEM, service and business partners who need a flexible and branded communications infrastructure that is available everywhere, and is compatible with today's growing list of communications-enabled devices, unified communications platforms and videoconferencing solutions."

Avaya, GENBAND Extend Relationship

GENBAND and Avaya are working together to develop an advanced unified communications roadmap for enterprise users of the Avaya Communications Server 2100 (CS 2100) and Avaya SL-100. The plan is to enable customers of both companies to take advantage of multimedia applications powered by Avaya Aura and the GENBAND GENiUS platform. "The extension of this relationship will offer customers a unique combination of investment protection and graceful migration to advanced UC services," says Mark Monday, vice president of product management, collaboration platforms and endpoints at Avaya. "Our customers can reap the benefits of seamless UC solutions that are based on carrier class platforms and enhance mobility applications and services on any device."

Cisco to Acquire Cloupia

As part of its strategy to develop innovative data center, virtualization and cloud technologies, Cisco will buy Cloupia for $125 million. The Santa Clara, Calif.-based company makes software that automates converged data center infrastructure. As reported by Erin Harrison, a TMCnet contributor and editor of TMC's Cloud Computing magazine, Cloupia's infrastructure management software will enhance Cisco's Unified Computing System and Nexus switching portfolio and enterprises and service providers to manage pools of computing power, network services, storage and virtual machines as a unified whole. Cisco, which is based in San Jose, Calif., plans to integrate Cloupia's employees into its Data Center Group.

Newvem Unveils iOS App

As more organizations adopt cloud services, there is a need for increased awareness of the cloud's costs, utilization, security and availability on a 24/7 basis, as noted in a recent story by Erin Harrison, a TMCnet contributor and editor of TMC's Cloud Computing magazine. Aiming to meet this need, Newvem, a provider of cloud analytics for Amazon Web Services customers, recently unveiled the company's first iOS application, designed to provide a clear analysis of cost trends and usage improvement opportunities. "Our iPad and iPhone app allows CIOs and IT managers to easily and clearly see how much of their AWS is currently in use and subsequently use only what they need," Zev Laderman, co-founder and CEO of Newvem, explains. "Ultimately, AWS users win with a friendly and effective experience that helps them to always have what they want to know at any time and from any place, thus enabling a more profitable, scalable, and efficient cloud."

HP's Autonomy Acquisition Goes Bad

Tech giant HP in November announced that it will be incurring a massive $5-billion charge and blaming it on a raft of improprieties, misrepresentation and disclosure failures at software firm Autonomy, which it acquired last October for $11.1 billion. Management from Autonomy – which offers an algorithm that extracts meaning in real-time from all forms of information, regardless of format, source, or language in a development that some say is transforming the way companies use and interact with data – is denying the allegations. A whistleblower came forward to expose what HP is calling "serious accounting improprieties" and "a willful effort by Autonomy to mislead shareholders," Reuters reported. As TMCnet contributor Tracey E. Schelmetic noted: "This is one more very unneeded blow to HP, which has seen more than its share of problems as of late, including a virtual revolving door of CEOs, overall management turnover

and challenges in its core personal computer and printer businesses." In a separate TMCnet story, Tony Rizzo opined: "Everyone among us should be truly furious about what HP has done to itself over the last decade (dating back exactly to when HP acquired Compaq and Carly Fiorina entered the picture) for this key reason. It has not only harmed itself, but it has hugely harmed the world view of American business at the highest levels."

SMB Service Gets Major Update

A while back, Ipanema Technologies partnered with Ingram Micro to launch AppsWork, a new cloud-based service that allows small-to-mid-sized organizations to monitor, optimize and guarantee application performance over a network for a few dollars per user per month. On Nov. 26, the company announced a major new version of AppsWork with new features to enable users to accelerate traffic over the WAN while still guaranteeing critical application performance. The solution has seen uptake in various markets, including education, legal, architecture, financial services and health care.

Dallas Gets New Data Center

Alpheus Communications has opened a second data center in Dallas. The new facility is in the Dallas central business district and is served by a diverse fiber route with a connection to the Alpheus fiber backbone. Alpheus sells metro Ethernet, IP transit, regional long-haul and managed network services.

Utility's Telco Business Taps Fujitsu

SRP Telecom, a Phoenix-based business unit of the nation's third-largest public power utility, is deploying the Fujitsu FLASHWAVE 7420 Metro/Enterprise WDM Platform for data center interconnect and access services. The FLASHWAVE 7420 combines optical, Ethernet and certified storage solutions in a scalable platform that support multiple protocols, including Enterprise Systems Connection, Fiber Connection and Fibre Channel. Michael Sherman, director of SRP Telecom, says: "As communications service providers and enterprises look for a trusted source of bandwidth, we can tap our 1,600 route-mile fiber optic network. The bandwidth we provide comes with a 99.999 percent service level assurance, and the stability of Salt River, established in 1903 and now serving nearly one million customers. The FLASHWAVE 7420 platform from Fujitsu helps us provide leading carriers and Fortune 500 companies with the secure, reliable, state-of-the-art bandwidth services they need to be successful."

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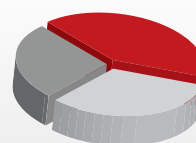**INTERCONNECTS**
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Security

Telecom Industry Taking Longer Than Expected to Implement DNS Security Measures

DNS security has been in the headlines a lot recently, and that's never a good thing. This typically means there has been a major security breach in DNS infrastructure that compromises IP-based networks, which often brings down companies' web-based communications in the process.

The telecom industry is always a central figure in discussions of DNS security because it is responsible for such a large portion of the world's DNS servers, which serve as the phone book of the Internet by mapping names to IP addresses. One of the most fundamental vulnerabilities of the DNS protocols is that one cannot necessarily trust the answers that the DNS provides, making it possible for attackers to redirect users to false web sites in order to conduct fraud.

To address this vulnerability in the DNS, an international consortium of security experts developed a set of security protocols called Domain Name System Security Extensions, or DNSSEC, which adds critically-needed trust to the answers that DNS provides. There has been a chorus of calls for telecom companies and other organizations to implement DNSSEC, but a new progress report shows that the telecom industry has been slow to adopt the protocols – even slower than the industry's own projections about progress on this important security issue.

The progress report conducted by the technical team here at Secure64 is a follow-up to a 2010 study by Forrester Research titled, "DNSSEC Ready for Prime Time," which reported on organizations' plans to implement DNSSEC security. DNSSEC ensures that answers provided by the DNS came from an authorized server and have not been altered in transit – critical characteristics that provide the level of trust that the Internet needs.

DNSSEC protocols have been embraced and implemented by the U.S. government and many top level domains. The White House issued a directive that has prompted a significant portion of federal agencies to implement DNS-SEC, and the Department of Homeland Security has highlighted this as a critical initiative for all organizations with DNS infrastructure. Most importantly for the telecommunications industry, the FCC announced in 2012 that it was calling on major telecommunications companies to implement DNSSEC, and that quickly resulted in an agreement with the largest providers to follow through on that request.

That agreement with the FCC was a clear sign of the telecommunications industry's understanding of the importance of DNS security and its intention to implement the security protocols. The Forrester Research report corroborated that with a statistic that 52 percent of the telecom-focused companies interviewed for the study called DNS security an urgent issue. The report also highlighted the eye-catching statistic that more than half of the total participants in the survey had experienced a recent DNS attack on their networks.

The most intriguing statistic from the report, though, is this one: Forrester reported that 95 percent of the total organizations surveyed who were familiar with DNSSEC said they had either already implemented DNSSEC or planned to in the coming 12-18 months. That report was published in 2010, so an analysis of DNS systems today should show significant progress on this issue, particularly when the recent FCC agreement with major telcos is factored in. Our progress report shows a very different picture, though:

• None of the 60-plus largest telecom/ISP companies in the world have completed full deployment of DNSSEC.
• And none of these telecom/ISP companies show evidence of even having begun a trial deployment of DNSSEC, which would include basic steps such as signing DNS data.

None of the 60-plus largest telecom/ISP companies in the world have completed full deployment of DNSSEC.

Our technical team broadened our research to look at other organizations that manage DNS infrastructure, including the media/entertainment industry, which in many ways is a close cousin to the telecommunications industry based on the way media and telecom have come to overlap over the past decade:

• Of the largest 50 media and entertainment organizations, only one shows evidence of DNSSEC implementation.
• Comcast (which is categorized as media by Fortune) is the only company in this vertical that has fully deployed DNSSEC, including signing of DNS data and establishing a full chain of trust.

There is clearly a large gap between what telecom companies have publicly said they plan to do about DNS security and the reality of what they have done so far. The slow pace of adoption may be due to lingering perceptions of DNSSEC as difficult to deploy, but the reality today is that there is no technological barrier to implementing DNS security measures in a fast and inexpensive manner. **IT**

Mark Beckett is vice president at Secure64 (www.secure64.com).

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Don Van Doren
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Vanguard Communications

Sheila McGee-Smith
Founder
McGee-Smith Analytics, LLC

Contact center technology, as well as the dynamics of delivering a great customer experience, is changing at a rapid pace. The accelerated adoption of cloud-based solutions, the incorporation of social media into the multi-channel mix, the impact of smart phones and mobile tablets, the need to accurately capture the voice of the customer, new methods of measuring agent effectiveness...what changes are taking place in 2013 and how can you be ready? Join us for this live web event where Forrester Research principal analyst, Art Schoeller and Interactive Intelligence senior vice president, Joe Staples will discuss these topics and help you be ready to take the best advantage of the upcoming year and the contribution your contact center can make to the success of your business.

Following the web presentation, there will be an extensive Q&A, where Schoeller and Staples will be joined by industry veterans, Sheila McGee-Smith, Founder of McGee-Smith Analytics and Don Van Doren, Founder & President of Vanguard Communications, as the panel responds to audience questions.

Attendees of this Interactive Intelligence web event will receive four vendor comparison reports published by Gartner, Frost & Sullivan, Nemertes Research, and CRM.
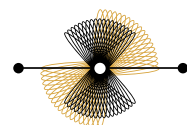
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Movie Studio Opens

DreamWorks has released its OpenVDB open source C++ library to the general public, meaning that the right programmer could find a way to copy the look and feel of all of the characters in DreamWorks' newest holiday hit, according to a recent TMCnet posting. This is a particularly interesting move by DreamWorks, considering that "Rise of the Guardians" is considered one of the most expensive animated movies to ever be produced. Now, the technology that made the main characters so lovable and lifelike has been opened up for free on the openvdb.org/ website. The homepage for this open source hosting site details the new program. "OpenVDB is an open source C++ library comprising a novel hierarchical data structure and a suite of tools for the efficient storage and manipulation of sparse volumetric data discretised on three-dimensional grids. It is developed and maintained by DreamWorks Animation for use in volumetric applications typically encountered in feature film production."

Hadapt, MapR Partner

MapR Technologies Inc. has announced a partnership with Hadapt, a data analytics platform natively integrating SQL with Apache Hadoop. The partnership enables customers to leverage the MapR Distribution for Hadoop in conjunction with Hadapt's Interactive Query capabilities to analyze all types of data, structured, semi-structured and unstructured, in a single, enterprise platform. "The MapR Distribution provides unrivaled enterprise-class Hadoop capabilities including high availability with self-healing, data protection and disaster recovery," says Scott Howser, vice president of marketing at Hadapt. "We have already brought interactive applications on Hadoop to market and now, through this partnership with MapR, we are providing customers additional ease of use, performance and reliability advantages." Hadapt's Adaptive Analytical Platform and MapR's Distribution for Hadoop enables business analysts to harness the power of the Hadoop ecosystem via SQL and conduct investigative analytics on a unified platform with no connectors, complexities or rigid structure. The combined solution alleviates the barriers to entry in the traditional enterprise environment with features like no single point of failure and disaster recovery.

Digium, Gentek Form Partnership

Gentek will distribute Digium's Asterisk telephony, Switchvox Unified Communications solutions and Digium IP phones to its resellers. Toronto, Canada-based Gentek has for 30 years provided products to the small and medium-sized business/small and medium-sized enterprise markets. Gentek will distribute Digium's full range of Switchvox UC and Asterisk VoIP products, including

IP phones and gateways, redundancy appliances and telephony cards certified for Asterisk installations. "We are continuously searching for innovative products that match the needs of resellers who are servicing the growing SMB market," says Jeffrey Freedman, vice president of sales for Gentek. "The Switchvox UC solution is an excellent fit for customers who require a feature-rich phone system that provides outstanding value. Gentek has formed very strong relationships with our manufacturing partners and we expect our partnership with Digium to be extremely successful. We believe that Digium's forward-thinking product lines and our expertise within the SMB market are a perfect combination. Together, we will be able to provide an excellent solution to enable our resellers to capitalize on the growth in the UC and VoIP markets."

Sencha Supports Windows Phone 8 Developers

HTML5 developers can now use use Sencha's HTML5 development tool to create and publish applications for the Windows Phone Store. In a recent survey of IT professionals, nearly 50 percent said they are planning to build apps for Windows Phone 8 devices in the next six to 12 months.

OpenERP Unleashes 7.0

Will OpenERP succeed where SAP failed? That's the headline of a blog that OpenERP published in mid December, just before OpenERP 7.0 was scheduled to launch on Dec. 21. Here's an excerpt: "As a company SAP is anything but a failure. It is a very large, successful and growing company. Yet there is one area where they failed; this is bringing the proper business tools to millions of small and medium-sized companies worldwide. According to the Census Bureau, companies with less than 100 employees account for 98 percent of the total number of companies and represent over 35 percent of the active workforce in the United States. This proportion is even higher in other regions of the world. The vast majority of these companies do not have access to the right software to manage their activities." The blog goes on to say that OpenERP 7.0 gives those businesses the option to deploy one application at a time, whichever application they prefer. "We have tested this latest version of OpenERP with customers who have never been exposed to it," according to the OpenERP blog. "They have been able to complete a simple flow (creating a sales order, invoicing a customer and registering the payment) in only a few minutes. Nobody has ever followed training to use Facebook, Linkedin or Gmail. Why should it be different for business software? We just think that the vast majority of the software used at the office are simply badly designed."

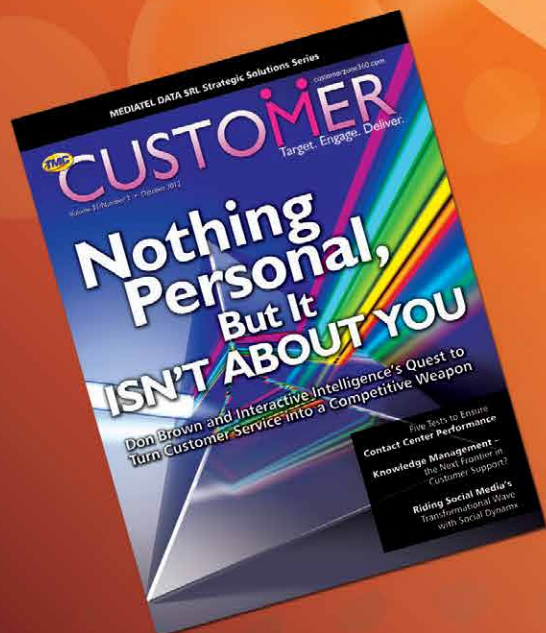# Examine the Best Ways to
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New Cameras Will Prompt Home Life Narrowcasting

We are about to enter a fascinating new period in the delivery of video content that will provide even more options for consumers.

Sixty years ago when television began entering nearly every home, the model was for a TV station or network to create content and push it to your TV for your entertainment. Your choice of what to watch on any given night was limited to a few stations. You were forced to watch what someone, most likely in Hollywood, had decided would entertain you. Most people watched the same shows as their neighbors, and if there was nothing on that they liked, they turned off their TVs.

This model lasted quite a long time until cable arrived. All of a sudden, it was possible to access hundreds of stations for a relatively small fee. In the quest for viewers, TV stations began to specialize, offering more and more stations to satisfy as many needs and interests as you could think of. Channels were now offering history, 24-hour news, 24-hour sports, courts of justice, movies, reality shows and more. The industry carved out as many special interests as it could to retain viewers.

Ultimately though, some entertainment industry executive was still deciding what content you would be allowed to access. The arrival of the Internet changed a lot of things, the most important of which was that each individual now had the power to seek out and choose the form of entertainment that interested him or her the most. In droves, people began to spend more time online than watching TV, because they can search for what they like on the Internet and view it whenever they like. The new norm is to come home and huddle around a laptop screen with your spouse and your kids and watch the latest video sensation on YouTube or elsewhere (Gangnam style?).

Being someone who does this frequently, even though I have a 50-inch TV in the basement, I find it very liberating that I no longer need to follow someone else's schedule to see something that interests me or my family. But I am still largely watching content produced by someone else. What if I could see content that I created myself? What if my family and I could create our own content and not necessarily share it with the world by uploading to the Internet, but share it privately in our own family TV network? What if I could create my own family content and seamlessly share it with my mother, who lives in Toledo, or my daughter, who is studying away at State College?

Right now we do this by taking family photos and maybe videos and sending them to one another using file sharing services like Facebook, Instagram, Dropbox, Picasa or Tumblr. We do this by actively and consciously picking up a phone or a camera and capturing content, then uploading it online; then we choose who we are going to share it with and invite them to view this video. This, of course, works very well when we have a phone or camera handy and we want to capture a specific event such as a birthday dinner, a party, rehearsing tricks with a dog, opening presents on Christmas morning, or snapping pictures of grandma when she comes over for dinner.

What currently isn't possible is for me to see my elderly mother who lives far away and how she is doing on a regular basis. I can't check into my house to see how my new puppy is behaving. Is he tearing up the new carpet or sleeping quietly in his crate? I also don't know at exactly what time my kids are showing up at home unless I am there in person. There are hundreds, if not thousands, of examples of things I would like to see about my daily life that currently are not available to me because I am not physically present when they happen.

That's about to change. There's a new type of consumer camera, called an IP camera, that is about to hit the stores. These are wireless cameras you install in your house that are permanently connected to the Internet. Pretty soon, you will be able to install these cameras at your home, small office, your mom's place and your vacation property at an affordable price. Together with these cameras, you'll be able to subscribe to an Internet-based service that will let you know what is happing in various locations whether you are present or not, essentially creating the ability for you to narrowcast video to the people and connected devices of your choosing.

Because the content that comes from these cameras can be sent automatically to the Internet, that content can also be sent to just about any connected device. So, for instance, you could securely see what is happening at your vacation home from your new smartphone or tablet. Your smart TV could tell you if someone is at the front door or even show you that your baby has just woken up in his crib upstairs. You'll even be able to film your daughter's soccer game and show it live on your smart TV to both your mother-in-law and your spouse back home.

Pretty soon, you will be able to know everything that is happening at all your properties, and you will be able to access all that content whenever you want. The new family TV network will not be controlled by someone you don't know at a distant TV studio. It will be configured by you to fit your exact needs. Using intelligence that can reside online, your family TV network will have the ability to record content when you want it to, or not. All of this will be accessible to you and you alone, unless you decide to share with someone. Your content will even be protected from others in a secure location to assure full privacy. Narrowcasting will create a new type of self-generated content that will enable us to connect and share information on new private family TV networks. Perhaps your next favorite reality show will take place on the school soccer field, or even in your own home. **IT**

Charles Black is president and CEO at iWatchLife (www.iwatchlife.com).

Wireless

Next Stop: Multi-mode Devices

Like never before, users are demanding uninterrupted voice coverage and data access both indoors and on the go; and operators have turned to small cells as a means to increase coverage for their user bases. As a result, the heterogeneous network, or hetnet, is a multi-layer network combining macrocells along with strategically placed small cells, Wi-Fi hotspots and more. The hetnet is now widely accepted as the future of wireless networks, and small cells have evolved into an answer for not only coverage, but the capacity crunch as well.

The turning point came when the number of deployed 3G femtocells surpassed the number of 3G macrocells. So what is next for small cells? Well, as the mobile industry transitions from legacy 2G/3G architectures to LTE, there is an immediate need for dual-mode or multi-mode small cell devices that enable operators to continue to deliver the best user experience as they support their existing 3G users while planning for an LTE rollout.

The small cells or femtocells deployed today started as a solution for indoor coverage in the form of residential and enterprise versions of small cells. These are now rapidly evolving into outdoor open access picocells providing coverage in public areas such as stadiums, hotels, shopping malls and so on. At the same time, Wi-Fi hotspots continue to provide license-exempt spectrum in indoor areas, and offer offload of cellular traffic in a cost-effective way.

This has led to the evolution of a complementary approach where Wi-Fi and small cells jointly address the coverage and capacity challenges for indoor and outdoor network areas.

Due to the lack of new site locations, the cost of new deployment and backhaul-related issues, operators are seeing value in placing these Wi-Fi hotspots and small cells under the same enclosure so that they can share location, backhaul and more. The optimal integration is a multi-mode access point that combines 3GPP (WCDMA and LTE) with the Wi-Fi hotspot, giving users the best of both worlds.

At its simplest form, a dual-mode or multi-mode device combines multiple radio access technologies while maintaining standard interfaces into the operator network. However,

there is a plethora of options to combine the logical functions within a small cell device. The obvious functions to support the multi-mode version of small cells include a common device management, provisioning interface, backhaul options and security. However, the synergies go beyond these basic commonalities. These multi-mode devices will also need enhanced scheduling for effective use of radio resources, SON techniques to support intelligent mobility management and neighbor relations, and all while accounting for the multiple available radio accesses.

Mobile operators can leverage multi-mode devices to manage the efficient utilization of all the available radio resources to handle user traffic. The multi-mode device solution can leverage software-defined radio techniques, solving coverage issues and offering an intelligent load balance among radio accesses.

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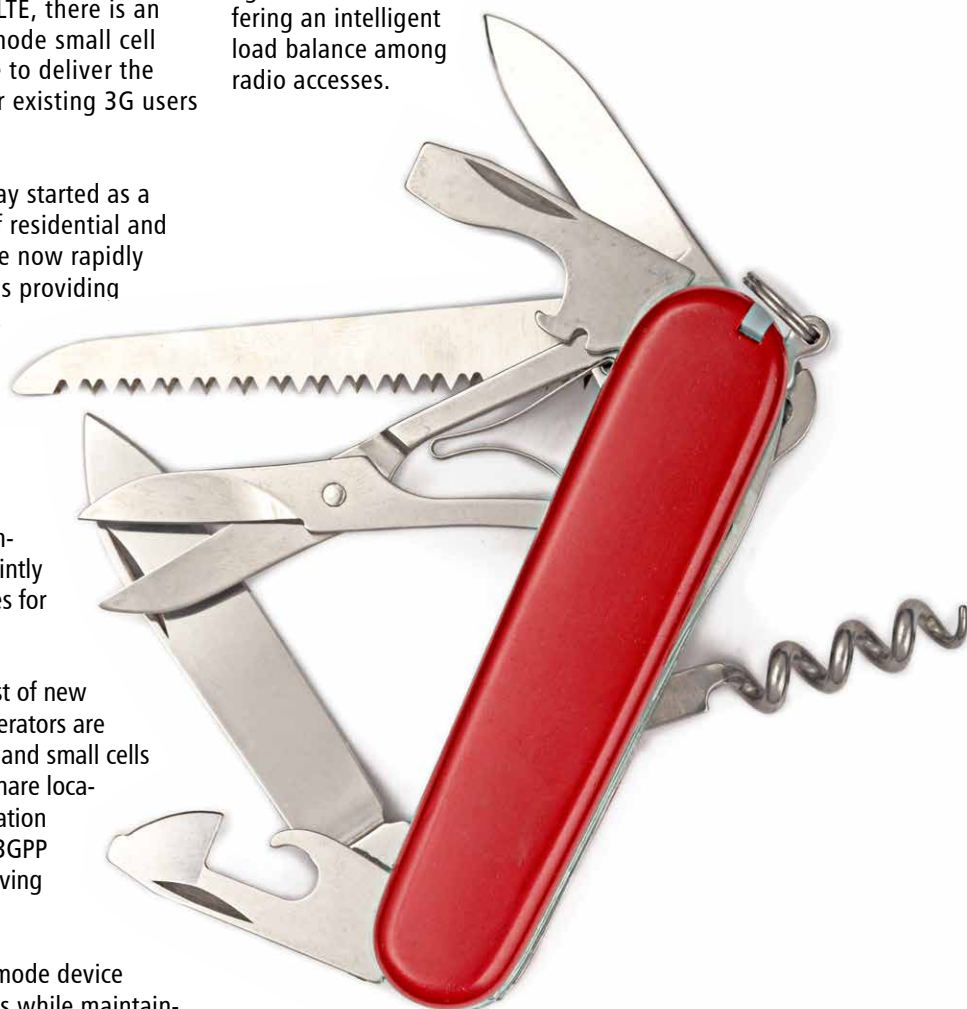
Optimizing dual-mode support for effective load balancing

By their nature, multi-mode small cell devices help operators increase the available coverage area for subscribers by extending the network and enabling subscribers to leverage the best radio. Going forward, both residential and open access settings will need to support LTE as well as legacy 3G handsets. Operators will need to implement a load balancing mechanism that enables the efficient usage of premium LTE resources by diverting the rest of the traffic to 3G as suitable. In addition, operators can also leverage Wi-Fi offloading for low priority users.

Today, smartphones can select which network they want their handset to use – whether their own cellular network or an in-range Wi-Fi network. As the multiple accesses for 3G, LTE and Wi-Fi are unified and made available to smartphone users as a single access point, there is a need to implement network side

Leverage SDR for effective multi-mode

Unlike traditional radio chips that leverage one wireless protocol such as cellular, Wi-Fi or Bluetooth, software-defined radio chips rely on the software to determine which applications to implement. This makes SDR devices extremely versatile, and a good fit for multi-mode devices, as SDR can enable these devices to use the best network available, and allow operators to manage their traffic on the network. In other words, SDR can create virtualized wireless networks that support today's hetnets combined with Wi-Fi.

Optimized SON techniques for multi-mode devices

A self-organizing network, or SON, offers operators a better way to manage their hetnet and multi-mode devices, providing effective coordination of RF resources suitable for multi-radio, multi-standard small cell networks with automated steps for:
- self-configuration;
- self-optimization;
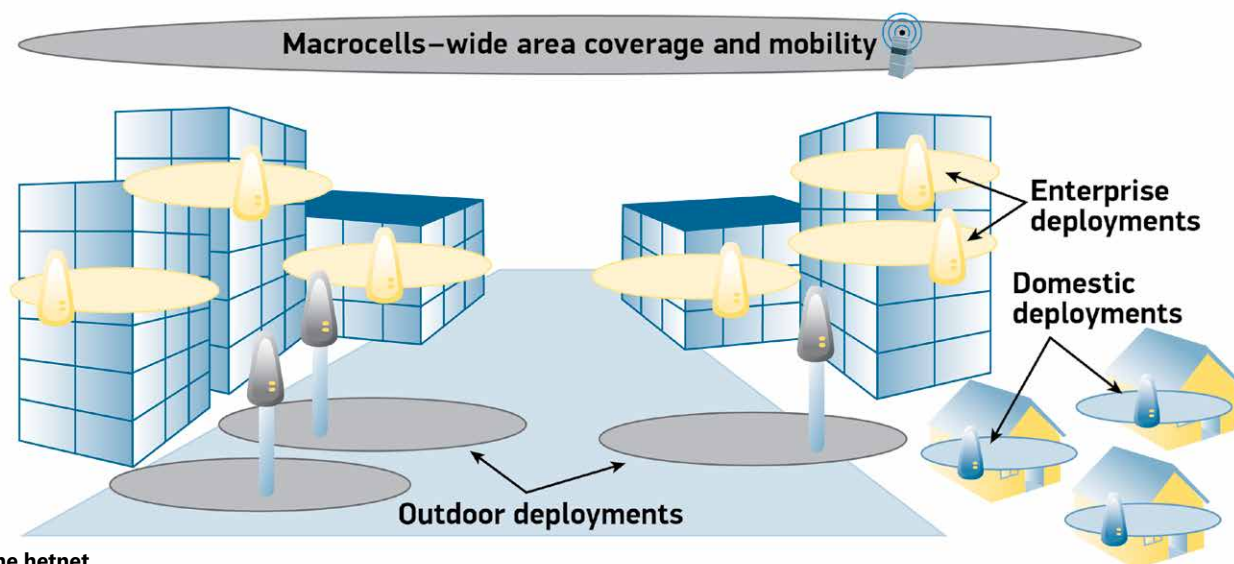
The hetnet

policy and management function; this will give control back to the operators to manage the available network resources while monetizing their deployments.

Operators can leverage several techniques to optimize their multi-mode devices. One key technique is to leverage policy management functionality on their multi-mode small cells, which enables them to prioritize traffic on their 3G/LTE and Wi-Fi networks.

Additionally, operators can define a quality of service solution for the backhaul transport that works across 3G/LTE and Wi-Fi services. A unified QoS scheme provides the flexibility to allow similar traffic classes on different technologies to share the same QoS marking. Thus synergies at different levels can improve the efficiency of the multi-mode devices significantly.

- self-healing; and
- enhanced O&M.

By automating these steps, mobile operators can lower deployment and operations costs, mitigate interference, and optimize their networks to boost capacity and throughput.

SON has evolved significantly since its initial introduction; it now acts as an umbrella over the entire coordination of the network. SON amasses information on base station feedback through sniffer functions, user equipment measurements and signaling over the X2 interface between two eNodeBs. It then leverages this combined information to provide insight on neighboring cells, interference levels, geographic locations and more.

In addition, coordination of a distributed SON application at the eNodeB and a centralized SON serve can optimize the network
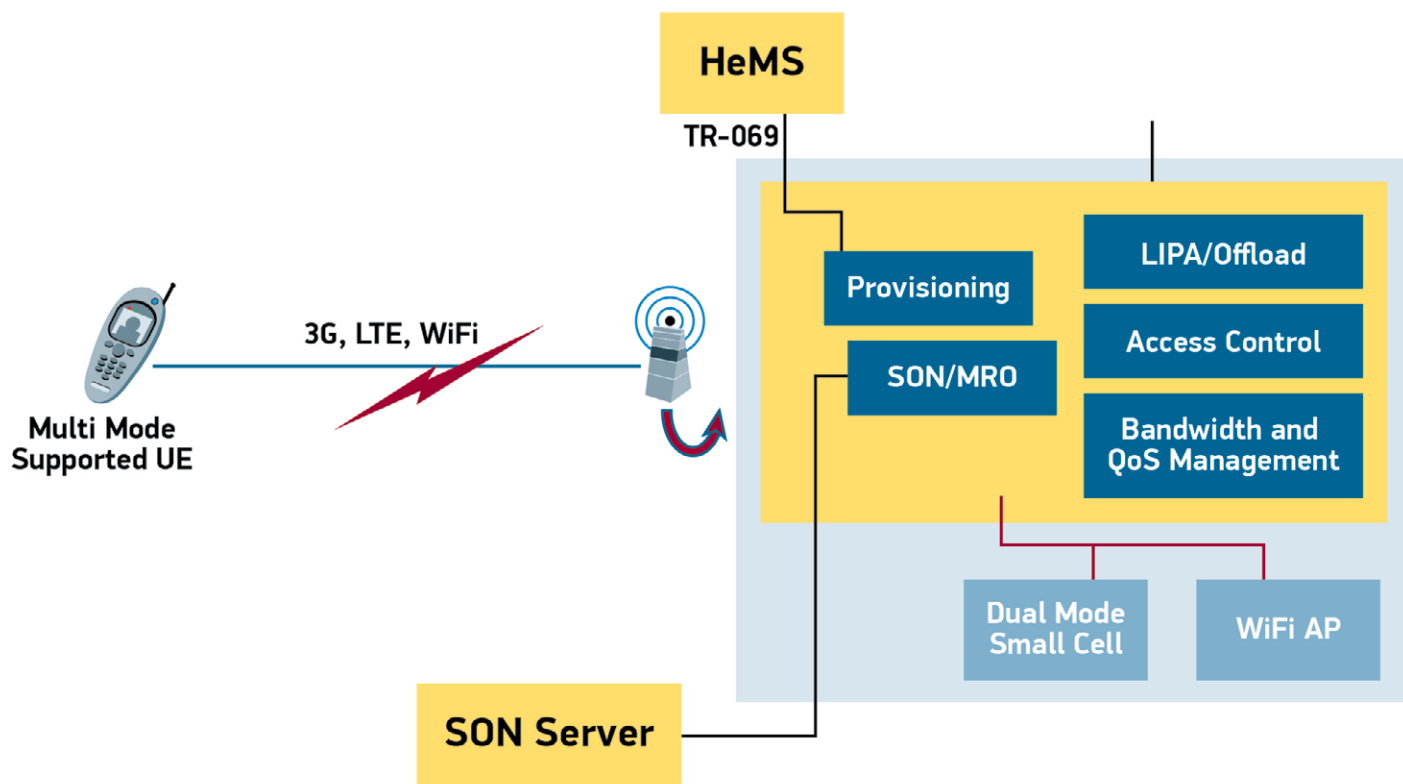
Small Cell Solution Integrated with Local Gateway/Router and Wi-Fi AP

performance for each of these network nodes. This optimization delivers effective cell coordination for better self-configuration and mobility handling, resulting in capex savings.

SON's range expansion techniques eliminate frequent handovers of traffic and promote stickiness to the small cells in the network. This provides an effective load balancing and traffic offload solution for the macro network, in addition to mitigating interference. Also, the more UEs served by the small cells, the more capacity there is in the macro network.

A multi-layer self-organizing network controller or network entity offers a multi-mode SON function that helps select the best suitable radio access and can also guide how traffic flows are routed and prioritized, and promotes network sharing.

Thus, SON is a vehicle enabling the effective coordination of time and frequency resources between macro and multi-

> **SON's range expansion techniques eliminate frequent handovers of traffic and promote stickiness to the small cells in the network.**

mode small cells to minimize interference and deliver dynamic optimizations, even with a complex hetnet topology and multi-mode small cells.

Multi-mode device availability

It is clear that multi-mode devices shall play a key role as mobile operators turn to them to help solve their capacity and coverage challenges. Multi-mode SoC platforms are now arriving on the market, supporting collocated RF for 3G/LTE. In addition, mobile devices are already well positioned to support this new multi-mode technology; smartphones and tablets on the market today come with multiple radio accesses including Wi-Fi and 3G, and now LTE. **IT**

Renuka Bhalerao is principal systems architect at RadiSys Corp. (www.radisys.com).

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AT&T Does an About Face

AT&T in November announced it would enable FaceTime over cellular at no extra charge for iOS 6 customers with an LTE device on any tiered plan, and that it would continue to support the application for customers with any AT&T Mobile Share plan as well as FaceTime over Wi-Fi. The new capability is expected to be available by early January at the latest, according to AT&T. The move is a change of direction for AT&T, which in August announced plans to block the FaceTime app over its network for all customers not on its Mobile Share data plan. Since then, the company has been in battle with Free Press, New America Foundation's Open Technology Institute, and Public Knowledge. The consumer advocacy groups argued that the restriction violates the FCC's net-neutrality rules.

Google Buys Wi-Fi Service Provider

Google has acquired Wi-Fi services provider ICOA at the bargain valuation of $400 million. ICOA has faced financial difficulties for some time. ICOA is a national provider of neutral-host wireless and wired broadband Internet networks in high-traffic public locations. It delivers 802.11x standard WLAN Wi-Fi hotspot and hot zone infrastructure throughout airport facilities, quick-service restaurants, universities, travel plazas, marinas, hospitality and municipal/hot zone locations.

Dishing on Spectrum Rules

DISH recently responded to the Federal Communications Commission's proposed order related to rules that would, once approved by the full commission, govern the 40mHz of broadband-ready AWS-4 wireless spectrum controlled by DISH Network Corp. "While the FCC's proposed order, based on reported accounts, does properly address some of the opportunities with this spectrum, it's significantly flawed by introducing serious limitations that impair its utility," said R. Stanton Dodge, DISH executive vice president and general counsel. "While the FCC would grant full terrestrial rights, its proposal to lower our power and emissions levels could cripple our ability to enter the business." In a press release, DISH also noted that it will launch its previously-announced wireless business, which it said would involvement the investment of billions of dollars and trigger tens of thousands of jobs, "assuming the FCC delivers rules making it economically and technically feasible to do so." And The company expects to invest billions and trigger tens of thousands of jobs to create a wireless broadband network that would power a variety of mobile and fixed devices, including smartphones, tablets and computers.

Storms Stall Communications

In addition to the lives lost and property damage, Hurricane Sandy and the storms that followed it did a number on communications infrastructure from the Northeast down to West Virginia. All major service providers experienced outages, and both wireless and wireline services were affected. According to the FCC, about a fourth of all cell sites in the 10 states hit by the storm experienced service outages. Emphasizing the challenges telcos were facing, pictures of a flooded Verizon hub in Manhattan, which continued operations using generators, were widely circulated in the mass media. A Google hub in Manhattan was also impacted.

Wii U Leverages Vidyo Technology

Vidyo software powers Wii U Chat, a point-to-point video service included with every Wii U console. "Vidyo provided Nintendo with a video solution that adapts to changing network conditions while being easy for consumers to use from the comfort of their living rooms," says Genyo Takeda, general manager of the integrated research and development division at Nintendo Co. Ltd. "Vidyo's software delivers both quality and performance and is easily integrated into Nintendo's technology." Vidyo is known for delivering a platform that has changed the economics and usage models for visual communications.

New API Allows for Embedded SMS
Clickatell's new Connect API allows software developers to easily embed short-message service, account creation and management functionality into their applications while keeping their customers in the application's user interface. Through the XML-based Connect API, developers are able to embed the ability for an end user to register for a new Clickatell account, activate the account, configure an API for the account, manage the account, purchase credits for the account, purchase two-way messaging capabilities and monitor account status. "It is our goal to provide a reliable, simple solution for application developers to work with any system to set up and send messages throughout the Americas region," says Bill Wolfe, Clickatell's chief strategy officer and executive vice president for small and medium business. "We believe these new APIs address some of the biggest concerns for software developers and we're excited to share this new offering with our customers."

Ericsson Offers Wireless Estimates

Approximately 40 percent of all phones sold in the third quarter of 2012 were smartphones.
Data traffic doubled between the third quarter of 2011 and the third quarter of 2012, and is expected to grow at a compound annual growth rate of around 50 percent between 2012 and 2018, driven mainly by video. All that is according to a new study from Ericsson. The company adds that total mobile subscriptions are expected to reach 6.6 billion by the end of 2012 and 9.3 billion by the end of 2018.

Yankee Provides Connected Device Forecast

The mobile and connected devices market is currently a $436 billion business globally, and Yankee Group expects the sector to hit $847 billion by 2016.

Getting Vertical

Mayo Clinic Makes Connections with Telestroke, Teleconcussion

When a person suffers a stroke or concussion, there's a narrow window of time during which doctors can act by administering clot-busting medications to minimize permanent injury to the brain. Now, mobile and videoconferencing technologies are making it possible for a larger segment of the patient population to have expedited access to neurologists and other health care professionals, making it possible for them to diagnose and, if needed, recommend treatment for such time-sensitive medical emergencies. The Mayo Clinic in Arizona, a state in which 40 percent of residents live outside areas with stroke expertise, is one organization that's putting these technologies to such use.

Mayo Clinic has created what it calls the Telestroke Network, which connects the Phoenix facility with 12 rural hospitals in Ari-

zona and Missouri. That includes facilities in Bisbee, Casa Grande, Cottonwood, Flagstaff, Globe, Kingman, Parker, Show Low, Tuba City, Phoenix, and Yuma, Ariz., as well as one in St. Joseph, Mo.

"This telestroke partnership between our physicians and Mayo Clinic means our Navajo and Hopi patients can now have immediate high-tech, state of the art stroke care," said Joseph Engelken, CEO of Tuba City Regional Health Care, a north central Arizona facility that was scheduled to come online toward the end of 2012.

"Urgent and immediate virtual care can be provided to patients – collaboration between stroke neurologists and physicians at the remote sites has resulted in 96 percent accuracy in diagnosing stroke," said Bart Demaerschalk, M.D., professor of neurology, and medical director of Mayo Clinic Telestroke.

Videoconferencing devices, including video-enabled robots, are used to connect patients and health care workers
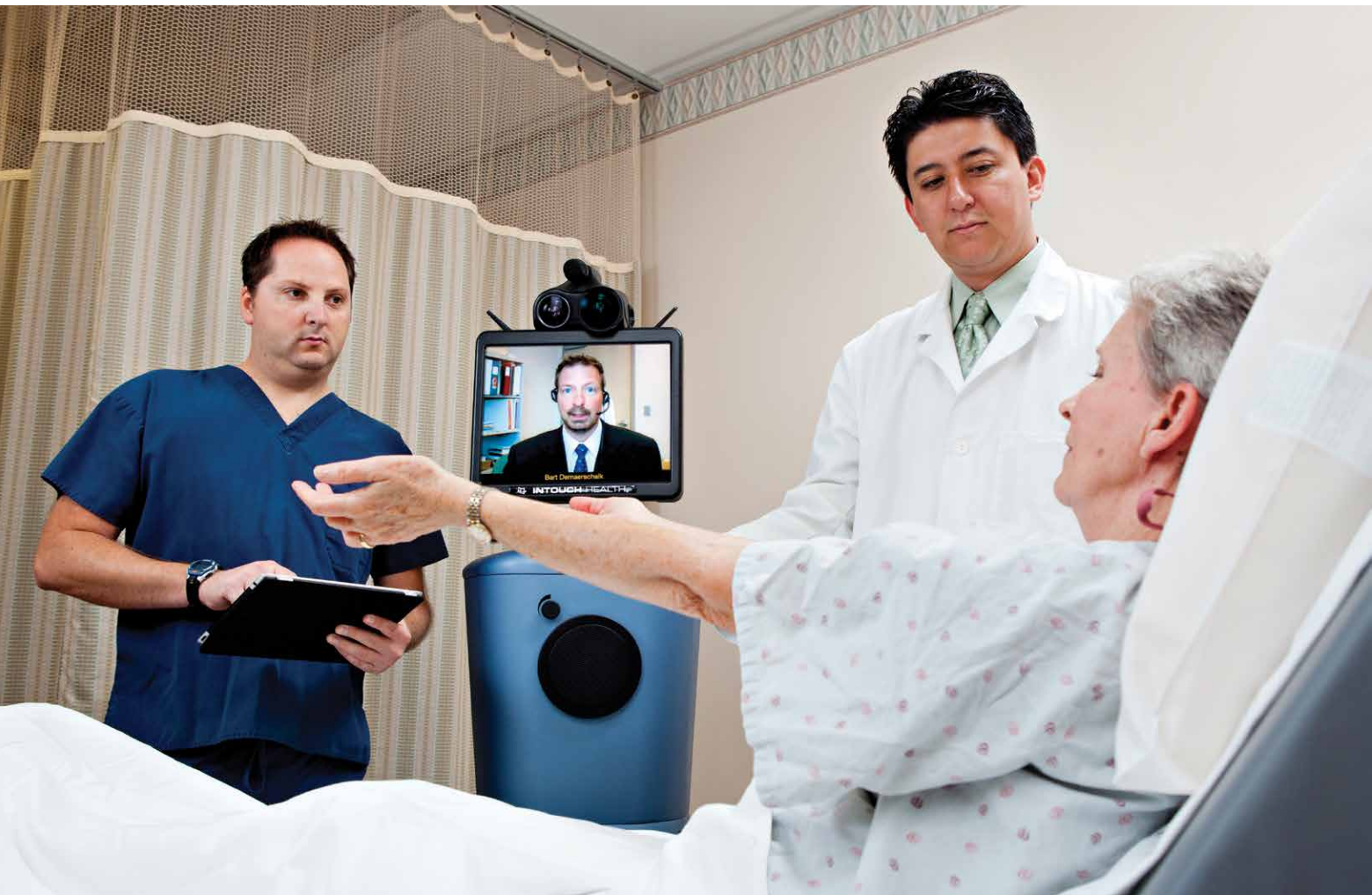
at remote hospitals with neurology specialists working from computers in Phoenix. To date, Mayo Clinic neurologists have done more than 1,000 online, face-to-face telestroke evaluations using this solution, and the program recently expanded to address other maladies, including concussions.

The telestroke solution also can be used for related types of interactions, some involving smartphones. For example, Mayo Clinic neurologists recently worked with emergency physicians and radiologists at Yuma Regional Medical Center to compare brain scan images from 53 stroke patients who visited the Yuma location. There was a high level of agreement on the interpretation of images and scans, whether viewed in person or via smartphone, according to a study funded by the Arizona Department of Health Services with technical assistance by Calgary Scientific, the maker of ResolutionMD.

"Smartphones are ubiquitous, they are everywhere," said Demaerschalk. "If we can transmit health information securely and simultaneously use the videoconferencing capabilities for clinical assessments, we can have telemedicine anywhere, which is essential in a state like Arizona where more than 40 percent of the population doesn't have access to immediate neurologic care."

However, while technology now makes it possible to connect far-flung medical professionals and patients, there are often significant barriers to the adoption of telemedicine, according to a study by researchers from Mayo Clinic in Arizona, C3O Medical Group in Ojai, Calif., and UCLA Medical Center in Los Angeles. Impediments to telemedicine deployments include licensing restrictions; the administrative burden of giving physicians privileges and credentials to engage in telemedicine and lining up malpractice insurance; and limitations in ability for billing and reimbursement, according to the study.

"Fortunately, the majority of respondents indicated that the technology itself, obtaining buy-in from health care administrators and the culture were not barriers to telemedicine," said Demaerschalk, who added that "the researchers in the study encourage those government and non-government insurers to more liberally reimburse for telemedicine consultations the same as they would for face-to-face care – particularly for acute robotic telemedicine consultations where there is proven reliability, validity, safety, clinical efficacy and cost-effectiveness."

Research published in the Sept. 14, 2011, online issue of Neurology, the medical journal of the American Academy of Neurology, indicates that telestroke is indeed cost-effective for rural hospitals that don't have an around-the-clock neurologist, or stroke expert, on staff. Again, Demaerschalk was involved in this research; in fact, he was the co-author of the study, which indicates that the incremental cost effectiveness ratio for telestroke over a person's lifetime is less than $2,500 per quality-adjusted life year. The threshold of $50,000 to $100,000 per quality-adjusted life year in the U.S. is commonly cited as the cut-off for cost-effectiveness, according to the study.

"The results convincingly demonstrate that telestroke is cost effective compared to the usual model of care," he said. "It's only a tiny amount of money ... comparatively, telestroke costs a couple thousand dollars more to save quality years of life – so it's a bargain really."

He added: "If the costs associated with the technology are reduced or if reimbursement opportunities increase we will recognize that this treatment modality may, in fact, save money,"

That's not to mention the life-saving and quality-of-life gains that both telestroke and teleconcussion capabilities can deliver for people of all ages.

Philip Johnson, M.D., the medical director and chair of emergency medicine at Summit Healthcare in Show Low, commented: "This is a lifesaving thing. To use this modality to reach out across the state to deal with concussions fulfills a great need. In our emergency room, I see one to three concussions a week, and I send the patients out with instructions to follow up with their doctors, and I know that without a neurologist in our little area here that follow up doesn't always happen as it should.

"During the evaluation with Mayo Clinic, it was really exciting to have this patient evaluated here locally," Johnson added, "and he will be able to go back to playing soccer when he really should." **IT**

Hadoop Targets Health Care

Health care modeling organization Archimedes Inc. has chosen Univa Grid Enginea distributed resource management platform, to operationalize a mission critical Hadoop application. Aggregator software developed by Archimedes uses publicly available clinical data to answer complex health care questions for researchers, pharmaceutical companies and government agencies to support clinical decisions. By using Univa software in this application, Archimedes reduced operating and deployment cost by 50 percent. And Archimedes was able to operate its Hadoop application on its current compute infrastructure, without the need to add additional resources or hardware. "Up until the time we had big data analytics, physicians were using guidelines based on broad population averages that were not tailored to any one person," said Katrina Montinola, vice president of engineering at Archimedes. "With Univa Grid Engine, Archimedes' technology is able to make connections between one event and another event in a way that one human brain wasn't able to do. It is able to compare a person's electronic health record with risk factors and all sorts of data. The computer is able to make connections on events and risk factors that would be overlooked by the average doctor – or even the best doctor."

Novo Introds HemaGo

Novo Nordisk has announced the introduction of a mobile application called HemaGo. It helps individuals with hemophilia, while also helping their caregivers monitor the details of treatment, including medications, dosing, bleed information and the impact of hemophilia on life events. HemaGo helps track multiple medications, and set reminders for treatment or doctor's appointments. It can be used to record factor usage and reason for infusion; the type, location and duration of bleeding events; and pain scores, including the impact of the bleeding episode on the individual's participation in work or school.

Doctors Keep Up with ClickClinica

Researchers at Liverpool University have launched ClickClinica, a free app for doctors that brings together authoritative guidelines for handling medical issues. Doctors also can use the app to record patient symptoms and treatment provided. Users of this app also can get real-time global disease surveillance from around the world. The app was developed by Benedict Michael, a National Institute for Health Research research fellow at the university's Institute of Infection and Global Health.
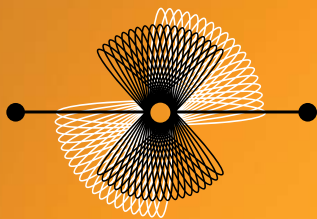
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By Paula Bernier

INTERNET TELEPHONY Reveals Product of the Year Award Winners

TMC is proud to announce the winners of the 2012 INTERNET TELEPHONY Product of the Year Awards. Recipients of the 15th Annual Product of the Year Awards represent the year's most innovative new products.

The editors of INTERNET TELEPHONY selected the companies that have demonstrated innovation, vision, leadership, thoroughness and a contribution to the growth of IP communications.

"The editors of INTERNET TELEPHONY have verified the selected products demonstrate quality and innovation plus provide real needs in the marketplace. These winners have exemplified excellence in IP communication technologies and I extend my congratulations to all," stated Rich Tehrani, CEO, TMC. **IT**

WINNERS

Company	Product	Company	Product
01 Communique Laboratory Inc.	I'm InTouch Meeting	Callture Inc	Callture Business Phone
		Concentric Cloud Solutions	Cloud Voice Solutions
4PSA - Rack-Soft Inc.	VoipNow 3, Service Provider Edition	CounterPath Corp.	Bria Android Edition
		CounterPath Corp.	Bria iPad edition
Acme Packet	Net-Net 6300	Denwa Technology Corp.	Denwa DECT IP Solution
ActionPacked! Networks	LiveAction	Dialogic	Dialogic BorderNet 2020 Session Border Controller
ADTRAN Inc.	NetVanta 1535P Gigabit Ethernet Switch with ActivReach	Digium	Digium IP Phones
		EarthLink Inc.	EarthLink CompleteTM Hosted Voice
ADTRAN Inc.	Mobile Data Offload		
AGNITY Inc.	AGNITY CareView	Ecessa	WaaS for VoIP
Angel	Lexee	En Pointe Technologies	ECS (En Pointe Collaboration Solutions)
AudioCodes	MEdiant 4000 E-SBC		
Auris LLC	Auris Wholesale Platform	Enterasys	identiFi
BillSoft Inc.	EZTax & EZGeo	Epygi Technologies	QX1000
		Esna Technologies	Cloudlink for Cisco
BroadSoft	BroadTouch Business Communicator	FaxCore Inc.	FaxCore Evolution eV5
Calabrio	Calabrio ONE	Fonality Inc.	Fonality Web Client
Calix	Calix 836GE Residential Service Gateway	FonAngle	MeshLINQ: Better Business Bandwidth TM

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Company	Product	Company	Product
Grandstream Networks	GXP2200 Enterprise Application Phone for Android	Phone.com	Phone.com Virtual Office
		Plxer International Inc.	Scrutinizer 10
Hughes Network Systems	Hughes Enterprise VoIP	PowerNet Global	NetDialer
iAreaNet	iArea Office	Radisys	Radisys RMS-220 Network Appliance (Patent Pending)
iDirect	Evolution X1 Satellite Router		
IntelePeer Inc.	IntelePeer CoreCloud Unified Communications (UC) Bundles for SIP Trunking services	Ring Central	RingCentral Office
		Sangoma Technologies	NetBorder Lync Express
		SAP	SAP Afaria
invoxia	NVX 610	ShoreTel's Cloud Division	ShoreTel Sky Mobility
IPitomy Communications	IPitomy Queue Manager	snom technology AG	snom 7xx series IP Phones
IPsmarx Technology Inc.	IPsmarx Rechargeable Calling Card Solution	Socialdial Inc.	CrowdCall
iQsim	mobile robot	Star2Star Communications	Star2Star Business Communications System
JDS Uniphase Corp.	PacketPortal	Tektronix Communications	Iris Suite
MegaPath Inc.	MegaPath Hosted Voice	TelePacific Communications	Nationwide SIP Service
MTS	TEM Suite	Telesphere	Telesphere WebConnect
MyTelepath Inc.	Annaware	Telovations	VocalQ
NBS	NBS Hosted V.o.I.C.E	Thinking Phone Networks	ThinkingSuite
NEC Corporation of America	UC for Enterprise	Tigerpaw Software	Tigerpaw 12R2
NEI	D-Series Rack Mount Servers	Toshiba America Information Systems Inc., Telecom Sys Div.	VIPedge
Nereus	Radisys T-Series 40G ATCA Platform	tw telecom	Dynamic Capacity & E-Access
NetScout Systems Inc.	nGenius Voice | Video Manager	Verint Systems Inc.	Impact 360 Quality Monitoring
NetSocket	Cloud Experience Manager		
Nextiva	Nextiva Office	Virtual PBX	Virtual PBX Complete with VoIP Anywhere
Ooma Inc.	Ooma Internet Phone System: Telo, HD2 Handset and Linx	Vocalocity	Call Monitoring
OpenVox Communication Co. Ltd.	IX130	VSS Monitoring	VSS Monitoring vBroker Series
PaloSanto Solutions	Elastix	Windstream Communications	IP Simple
Panasonic	Panasonic KX-UT248-B Executive SIP Phone	XO Communications	XO Hosted PBX
Patton Electronics Co.	SmartNode 4670 VoIP IAD with ADSL Interface	Yealink Network Technology Co., Ltd.	IP Video Phone VP530

Ten Tech Topics for 2013

By Erik Linask

As another year comes to a close, with a new one on the horizon as I write this, it seems only appropriate to look back on some of the excitement of 2012, and pull out the old crystal ball for a glimpse into what we can expect to see in 2013.

• Samsung/Apple – Samsung will continue to grow and be the competitor Apple refuses to acknowledge it has. Apple will continue to have its rabid loyalists, but Samsung and Android will continue to attract iPhonians into its following thanks to Samsung's neat factor and shrinking gap between Android Market and the App Store. MobilityTechZone.com and TechZone360.com will bring you the blow-by-blow as this battle continues.

• Windows 8 – Despite hearing some negative feedback from desktop users, I have seen the Windows 8 tablet experience. It has a serious coolness to it. With what developers have been able to do with input devices, the desktop/laptop experience will soon come close to the touchscreen. Mark Benioff is wrong about Windows 8.

• Video on the Desktop – Video consumption on the desktop will continue to grow. Two-way video communication will not. There simply isn't a compelling enough use case. In fact, it becomes more of a distraction than anything as users look to maximize productivity. Outside of conference calls, desktop video will continue to struggle. Conference rooms will continue to be full.

• Video Everywhere Else – Simply, video will thrive in consumer and mobile environments. Mobile devices and networks are being designed for higher quality video content and applications, social sharing of video will continue to grow, and integration of high-quality mobile video into conferencing platforms will allow tablet and smartphone users to fully participate in collaboration exercises. VideoWorldInsider is your online source for all things video – from videoconferencing to enterprise YouTube to the cable industry.

• WebRTC – The technology will not change the world, but it will significantly enhance communications as a ubiquitous endpoint. Its biggest benefit will be in mobile and customer service environments, where the ability to communicate with any browser-enabled endpoint will allow easy and immediate engagement in multiple modalities, and the single-click entry into conference environments will help increase mobile conferencing usage, including video. Follow WebRTCworld.com for the latest.

• Cloud – Adoption of cloud services will continue to grow, but at a much slower pace than it has. Users will become more security conscious, and will start to recognize that the cloud model is not always as cost effective in the long run as it has been promoted to be. Don't worry, I'm not raining on cloud – it's not going anywhere, it will just grow more deliberately.

Cloud Computing magazine will bring you all the latest information, trends, and advice.

• Social Media – Will we see a slow-down in the number of Facebook and Twitter wannabes? I don't think so. In fact, the more social becomes embedded in our daily lives, the more these Zuckerberg doppelgangers will try to feast on our need for popularity with an endless stream of oft-preposterous social apps. Check out @berniebernstein's article on Koozoo: http://tmcnet.com/59219.1 – this one belongs on ESPN's Monday Night Football C'mon man! segment.

• Verizon and AT&T – The two U.S. giants will continue to swing and miss when it comes to understanding customers, and will continue to charge more and under deliver, all the while claiming to have either the biggest or the fastest 4G network in the nation. The problem is Sprint doesn't have the resources or infrastructure to make major inroads. The operators that will shine in 2013 are the cable MSOs. They have the physical infrastructure to deliver, they are embedded in the home environment, and they play together much more nicely than the telco brats.

• M2M – Health care and automotive will drive the M2M market to new successes, though for different reasons. Health care is the market of never-ending opportunity – any opportunity to better and more efficient care will always be successful. Connected vehicles also offer a direct touchpoint to the consumer, the largest customer base available, and can be leveraged by multiple vertical markets, including insurance, entertainment, public safety/first responders, education, military, etc. It also has the benefit of much shorter life and sales cycles than the connected home market, which will grow, but at a much slower pace. Keep tabs on what's happening in M2M with TMC's newest publication, M2M Evolution magazine (http://www.m2mevolution.com/magazine/).

I could go on; there is so much more to talk about for 2013: How much big data is too much data, and who will own it, and should we trust them with it? Will anyone that hasn't had a security breach take security seriously before it happens to them? The same can be asked about BC/DR – will Sandy have an impact on how businesses outside the Northeast approach BC/DR, and how will the cloud computing industry benefit? What will happen to RIM (calling for the bell would be premature at this point)?

• ITEXPO – I have, however, saved the most exciting for last. In the fall of 2013, TMC's ITEXPO will be heading to Sin City. Indeed, the bright lights and buzz of the Las Vegas Strip will provide the backdrop for the best conversation and education around, and the latest and greatest innovation in business communications and technology. **IT**

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