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INTERNET TELEPHONY® magazine is published monthly except February and August. Annual digital subscriptions are free to qualifying U.S., Canada and Foreign subscribers. Annual print subscriptions are free to U.S. qualifying readers; \$69.00 U.S. non-qualifying, \$99.00 Canada, \$119.00 foreign qualifying and non-qualifying. All orders are payable in advance in U.S. Dollars drawn against a U.S. Bank. Connecticut residents add applicable sales tax. For more information, contact our Web site at www.itmag.com or call 203-852-6800.

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

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Fog Builds Around M2M

We're all familiar with the rise of cloud computing. Now, a new layer of networking is developing in the form of fog computing.

Fog computing – a middle ground between devices and the cloud – leverages intelligence at the edge for more efficient data handling and faster, local decision making. It collects and aggregates data from multiple sensors, and can do simple data analysis at the edge.

"We think that's a real trend for the future," says John Canosa, chief strategist at ThingWorx, a provider of M2M platforms.

ThingWorx sees M2M not as a bunch of sensors sending data into the cloud, he adds, but rather as a distributed computing solution in which even the sensors have some intelligence that can be leveraged to make decisions.

Cisco Systems is generally credited with introducing the concept of fog computing, which it supports today via a technology called IOx that lives inside its Connected Grid Router products and will be expanded to other Cisco solutions in the future.

Todd Baker of Cisco explains that the value of fog computing in M2M scenarios is threefold. It acts as a data filter of sorts, making sure only the M2M sensor data that needs to be passed to the cloud is sent there. It serves as a simple control system at the network edge so if, for example, sensors detect an urgent need for adjustment on a remote oil pipeline, action can be taken locally for faster results. This can feature can also save valuable bandwidth. And it converts data sets, which may be based on specialized interfaces and protocols, at the edge so they are cloud ready once they ascend to that next network layer.

"It is getting very clear that the Internet of Things requires a different computing model, one that enables distributed processing of data with the level of resiliency, scale, speed, and mobility that is required to efficiently and effectively deliver the value that the data that is being generated can create when properly processed across the network," Roberto De La Mora, Cisco's senior director of Internet of Things products and solutions marketing, writes in the Cisco blog. "This distributed computing model is called fog."

Like cloud, he writes, fog provides data, compute, storage, and application services to end users.

"The distinguishing characteristics of fog are its proximity to end users, its dense geographical distribution, and its support for mobility," says De La Mora. "Services are hosted where they're used: at the network edge or even end devices such as set-top boxes or access points. By hosting services locally, the fog paradigm reduces service latency and improves QoS, resulting in superior user experience."

Paul Glynn, CEO of Davra Networks, which came out of stealth mode June 17, is also a proponent of fog computing for M2M. Davra provides the cloud-based RuBAN solution, an application enablement platform on which network VARS and system integrators can build services related to the Internet of Things. Cisco Senior Vice President Barry O'Sullivan joined the Davra board last summer.

"Our customers are using the cloud-based RuBAN platform to turn IoT raw data into usable everyday solutions that are as visual and easy to use as your smartphone," Glynn says. "We work with our partners to do all the heavy lifting and installing of Cisco IoS Integrated Services routers and sensors on location, then we manage information coming from the IoT environment as well as information from the network itself. We make sure to bring only the relevant raw data back to the customer. That's what makes fog computing so compelling, it's about decision-making at the ground level. Our VAR customers value our flexible solution because it can be used as easily in vehicle tracking or water meter usage as it can in smart cities and farms."

Glynn provides a specific example of where fog computing might come into play. Say there's a street with sensors for waste management, parking, and other purposes, on one street. Those sensors might connect over Wi-Fi to a router, and that router is their connection to the Internet. Fog computing sits in the router and makes local decisions about sensors, and sensors can talk to one another. A city Davra is working with in Europe has lots of underground rivers, which makes the streets icy when it gets cold, he says. So when the temperature drops and humidity is at a certain level, sensors know it, and the system sends an alert to the city council to deploy a truck to put sand or salt on the street. **IT**



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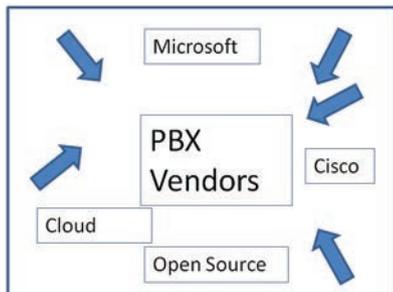
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The PBX Squeeze and How You'll Benefit

The following diagram is borrowed from the substantial cranial database of TMC partner in WebRTC Expo and UC University, Phil Edholm, who was a major tech driver at Nortel and Avaya for decades. It was modified a bit by me.



The state of the PBX market can be summed up by this chart, showing existing vendors getting squeezed between Microsoft coming from the OS down, Cisco coming from the router out, and

It is a tough time to be a PBX vendor.

cloud and open source coming from the bottom up in terms of pricing.

In short, it is a tough time to be a PBX vendor. This doesn't mean that these companies can't adapt – many are. ShoreTel is now a cloud provider, for example.

At last month's ITEXPO, which attracted an audience from around the globe, attendees saw everything of interest in communications and technology, and one of the areas of tremendous growth that has generated lots of interest is FreePBX World from Schmooze, which was collocated with ITEXPO in Las Vegas. This event had tremendous interest last year in Vegas, and we expected it to get bigger at the show held last month. (Press time for this issue was before ITEXPO in August.)

Why? As the diagram above shows, open source is putting pressure on PBX sales

from below – at a time when companies have tighter budgets. Linux familiarity is only growing, and success stories using this OS are everywhere.

Moreover, a system like FreePBX has taken an open source platform based on Asterisk and turned it into a unified communications solution. It also runs across endpoints ranging from hardware-based phones to mobile and even WebRTC-based clients.

But enough about the product – you can check the website for more. The conference provided a venue where attendees could come to learn about what the FreePBX ecosystem is capable of – and can do for your company.

The event touched on some of the most important topics in the industry right now – such as high-availability phone systems, software integration in small and large companies, localization for global customers, certification, hosting (cloud) pitfalls, and more.

The speakers included Mark Spencer from

Digium as well as Philippe Lindheimer of Schmooze. Mark, as you know, really popularized the open source PBX movement about a decade ago. We have come so far, so fast.

Here is the bottom line. There is major disruption happening in the PBX market. This means new opportunities for customers to take advantage of things they likely didn't have access to if their last PBX purchase was close to a decade ago or more. For example, open APIs, cloud-based access, SIP integration, WebRTC, mobile apps, HD voice, etc.

Open source may or may not be for you, but it is a smart thing to look at very seriously. It's worth mentioning that quite often the solutions you buy from traditional telecom and tech vendors are open source behind the scenes anyway. Amazing, huh? **IT**

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By Jonathan Dale



Mobile Apps Turn IT Departments into Purveyors of Productivity

IT staff were rocked in years past trying to play catch up with technology decisions being made directly by line of business. SaaS solutions and apps for smartphones and tablets were being adopted without their opinion or consent. For years, IT thought their influence and needs were steadily declining. Luckily, enterprise mobility and applications have changed their outlook.

Twenty-four months ago, most mobile employees were granted access to e-mail on their device of choice; however, access to resources beyond that were not common. Users were forced to find new ways to gain access to corporate data that proved problematic to internal security policies and industry regulations. A classic example of this was the unauthorized use of applications such as Dropbox. Over this period, IT was viewed as allowing basic access, and not much help beyond that.

IT finally got back into the driver's seat by taking the lead in implementing enterprise mobility management solutions. Practically overnight, EMM went from helping IT simply secure a device to providing a complete solution for employee enablement and productivity. IT is now fully onboard with mobile productivity, and is working directly with line of business to make impactful changes.

To understand how this is happening, we recently looked at the apps IT is directly distributing to end users devices. The data was obtained from IBM MaaS360 in a 14-month period, across 15,000 individual applications.

Here's what we found:

- 62 percent of organizations are distributing apps from public app stores and 38 percent are creating their own custom apps.
- Looking at just public apps, we found that 77 percent are iOS, 22 percent are Android, and 1 percent are Windows.
- Looking at just custom apps, we found that 69 percent are iOS, 31 percent are Android, and less than 1 percent are Windows.

- When it comes to verticals, we found the following industries accounting for app distribution: education, 33 percent; public sector, 15 percent; manufacturing, 14 percent; health care, 11 percent; retail, 10 percent; financial services, 10 percent; and others, 7 percent.

The data proves that IT is leveraging free apps, buying apps, and most importantly, building custom apps. Building apps is critical, as they can specifically access sensitive corporate information and impact business workflows the most. In addition, when building apps, IT is working to ensure it meets the usability users expect, while meeting compliance requirements.

We also see this in the different public apps they are distributing. Cisco AnyConnect is a clear example of IT enabling users to gain access to resources that sit behind the firewall; access to things like SharePoint, Intranet sites, and legacy application servers. In that same vein, we are seeing the rise of secure browsers and secure web gateways, which allow access to internal resources without the need for the user to manually launch and connect to a VPN.

We also see where IT has not allowed or encouraged specific apps. In health care and financial services where compliance and data security requirements are high, Dropbox does not make the top 10 list.

IT professionals are the driving force behind enterprise mobility, and apps have given them yet another tool to enable the workforce. The data provides an interesting snapshot of a trend that will continue to expand over the next several years, and have a profound impact on the way business is conducted. IT is at the front and center of mobility, and has become the true purveyor of productivity in the enterprise. **IT**

Jonathan Dale is director of marketing at Fiberlink, an IBM Company (www.maas360.com).

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Hosted PBX: Up Time is King

VoIP Logic provides hosted PBX platform solutions to more than 30 service providers and, by and large, they all have the same leading concern – up time. Keep services to business customers running and you are very likely to keep business customers. Become associated with outages or other forms of poor service quality – whether these are your fault or not – and businesses rapidly go shopping for alternatives.

So what causes disrupted services, and what can you do ahead of time to minimize these problems?

Here is a brief primer on the top four causes of service problems and some common sense considerations to engineer into how you deliver the services.

Security: There is an increasing list of vulnerabilities that can be exposed by technology. Telephones and other devices or software can be cloned, passwords can be attacked with brute force login attempts, servers can be bombarded with denial of service attacks, media and signaling can be hi-jacked with man-in-the-middle attacks. There are technical answers to mitigate each of these gaps, though tightening security on your network can cause users to encounter frustration as they login from a new location, misremember passwords, or otherwise end up locked out by the systems meant to protect them.

Suggestion: Buy protection for current problems – phones that allow secure HTTP (HTTPS) authentication, session controllers that shut down denial of service, fraud monitoring software to identify and limit toll fraud exposure. Create a working group that meets quarterly to determine new threats and responses. Communicate what you are doing and why to your business customers – security mitigation should be a competitive advantage for your customers, not an annoyance.

Redundancy: Every component you use to deliver hosted PBX services should have the technical option to be redundant, and you should always choose that option. Power does fail, servers stop working mysteriously and, as we are learning, catastrophic weather and other large scale natural (and man-made) phenomenon can impact your up time.

Suggestion: Buy three or four servers (or whatever type of equipment you are using) for every one that you want to use – one for primary live functionality, one for backup in the same geographic location, and one or two for failover to another geographic location. Operate dual power feeds, dual data center locations (geographic redundancy), and dual BGP Internet connections. Test that your redundancies work by performing

failover during maintenance intervals, confirming your dual power sources do not both feed from the same generator, and make sure phones on your network respond properly to failures by using the redundancies available.

Network: The most common point of interruption is the network. There are increasingly expensive ways to protect your network from the core all the way out to the premises of the business you are serving. In addition, the carriers you choose to handle toll call origination and termination can undermine your best efforts to keep prices low by providing high latency, jittery, or otherwise unacceptable-for-business voice quality.

Suggestion: Choose quality network providers as your vendors. Historical quality and transparency to issues that might occur are important to understand. Operators that tell you they have had 100 percent up time should be prepared to back it up with detailed empirical data. Managed network beats public Internet if your business customers can afford it. If not, make sure they understand the trade-off. Quality of service monitoring is crucial to identify and resolve network issues so they do not recur and leave you powerless. Multiple options for access and egress call routing will serve you well both in operating your network and when explaining it to your customers.

Maintenance: The single largest cause of outages is self inflicted during software upgrades, hardware maintenance, and other scheduled events necessary to keep your machinery and services running with optimal performance.

Suggestion: Run lab systems of all of the hardware/software that deliver your hosted PBX services so you can practice and identify problems before touching production systems. Use a thorough process – or standard operating procedure – that double and triple checks potential primary and ancillary issues that could occur. These are complex integrated systems that require checklists and meticulous attention to detail. Take it slowly as you plan and execute software and hardware changes. Do not do this work under duress or a compressed timeframe, if at all possible. Choose trusted vendors and experienced personnel to be in command during maintenance.

I use the word defensible often when I consider the hosted PBX platform decisions that we make to maximize up time. Are we taking every step possible to minimize expected technical problems, network problems, problems of malicious intent, and problems of human error? If all of us are essentially perfect in our preparation, execution, and delivery, 99.999 percent is the goal (not 100 percent). ■■

Micah Singer is CEO with VoIP Logic (www.voiplogic.com).

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By Karl Stahl

WebRTC Will Drive SIP Trunking of PBXs, UC and Call Center Solutions

WebRTC is high quality multimedia real-time communication in the web browser. Although the IETF and W3C standards still have to be completed, Google and Mozilla already support WebRTC in their Chrome and Firefox web browsers.

Using a WebRTC browser with the PBX or with UC solutions requires a SIP/WebRTC gateway that can bring very important features to the enterprise SIP-based infrastructure:

- You can get a voice/video telepresence quality SIP client in the web browser without any installation.
- That SIP client can be used remotely due to the built-in NAT/firewall traversal methods. Such a client is available to anyone, anywhere they can surf.
- A WebRTC-style invitation can be sent as an http link to a person you want to call you. When clicking that link, a browser window opens and he or she will be able to talk and videoconference with you.

With the SIP/WebRTC gateway, such links will go into the PBX infrastructure with forwards, auto attendants, queues, conference bridges, etc., instead of bypassing it as WebRTC by itself would do.

At the recent WebRTC conference, Avaya demonstrated the call center killer application. A logged-in customer could call the right call agent within his or her SIP UC infrastructure by clicking on a web page button, while all customer information was provided to the call agent.

Such web-based click-to-call applications will be widespread when WebRTC is available in the major browsers.

WebRTC is interfacing through the SIP gateway to the PBX or UC solution both as a client and via its SIP trunking interface. Thus, two important components for SIP trunking are already in place and used: The Internet connection and

the PBX SIP trunking interface, and it is thereby close to also move over from an old PSTN/TDM connection to the telephone network and instead use a SIP trunk from an ITSP – if that is not already in place. The third component required for SIP trunking, the E-SBC, may also be included with the SIP/WebRTC gateway, making your PBX ready to connect to an ITSP's SIP trunk, with lower telephony cost and other benefits.

Ingate Systems demonstrated such a SIP/WebRTC gateway at the recent ITEXPO, SIP Trunking, UC and WebRTC Seminars in Las Vegas. It allows UC vendors to add all WebRTC features with their products, also including the E-SBC for SIP trunking and the Q-TURN server for WebRTC. It can be tried out at <http://webrtc.ingate.com>. **IT**

Karl Stahl is chairman and CTO at Ingate Systems AB (www.ingate.com).

Enterprise View

Striking the Right Balance

Walking a tightrope looks easy from the spectator seats, and learning the basics of smart sales tools can also appear simple at first. However, as with any powerful set of tools, improper implementation can lead to negative results.

Successful selling is all about good time management and having the correct set of tools and skills. Statistically, sales should increase by 25 percent if you increase your working time by 25 percent, but by implementing smart cloud and communications solutions balanced with careful time management the same result is possible without the additional hours.

Tools were created to make specific tasks easier. Using a sledgehammer to cut glass would lead to a debacle. The same holds true for today's smart tools. For example, im-

proper implementation could result in excessive micromanagement, which can undermine employee morale rather than achieve the desired goal of creating an atmosphere infused with energy and innovation.

The key is a proper balance of management supervision and team incentives. Each member of the team should be able to act independently and feel they own the process. Pride of ownership is always a great motivator for success. Try providing your sales and marketing teams with a solid direction, and then allow them to run with it. The often-used sink or swim moniker for this method does it an injustice. Experience has clearly demonstrated that implementing this approach attracts a higher quality employee and achieves better results. Plus, today's smart tools allow managers to monitor an employee's activity without being intrusive,

and if employees get in over their heads you can always throw them a life buoy.

Falling is not the problem for tightrope walkers – it is the sudden stop at the bottom. The same adage applies to sales and marketing managers. If sales begin to fall and the trend gains momentum, the results will not be pretty. Fortunately, today's smart cloud and communications solutions provide managers with a terrific safety net. They are easy to use and can help generate additional sales. However, they do not have a full autopilot option yet and still need human managers to administer operations, which if you think about it, is a good thing. You are still needed. **IT**

Max Schroeder is vice president emeritus of FaxCore Inc. (www.faxcore.com) and co-chair of the SIP Forum Fax-over-IP Task Group (www.sipforum.org).



By Max Schroeder



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The How To of FTTH

The need for voice, video and Internet access services, specifically high-speed Internet access, is nowhere more noticeable than within the local communities across the U.S. They know what they don't have and can very easily make the connection between the economic prosperity of the communities that have it and their own plight. The how to for these communities is always the biggest question.

Once the realization has been made there are a couple of primary ways to go about addressing the problem. The first is the do it yourself way to build a fiber network within the community and along with that build a triple-play service network to run on the fiber. This approach is typical for communities that have reached a breaking point with the incumbents and no longer wish to leave their fate in the hands of another service provider. It also brings them in to the network service providing business, which is also typically something they have never done before, although some have electric utility experience. Regardless, becoming a broadband service provider has its own set of challenges not the least of which is getting the ire of the incumbents up.

There is another way. Simply build, or have a neutral entity build, a community dark fiber network and lease the fiber to one or more service providers that offer triple-play services. This mitigates execution risk and introduces competition while generating high-margin, recurring revenue for the community.

The two approaches are well defined by two different entities: the Fiber To The Home Council and SiFi Networks.

"Communities across the Americas are discovering that their future economic development and quality of life is becoming

Building, or having a neutral entity build, a community dark fiber network and lease the fiber to one or more service providers that offer triple-play services mitigates execution risk and introduces competition while generating high-margin, recurring revenue for the community.

ing evermore dependent on the speed of the networks that their citizens can access," according to the Fiber To The Home Council, whose website www.ftthcouncil.org offers guidance on how to get there. "Gigabit-enabled networks are now possible and are beginning to appear in some communities, with expectations that these superfast, all-fiber services will become standard within a few short years."

Separately there is the SiFi Networks approach: "SiFi Networks' wish [is] to work with progressive communities that are keen to implement next generation fiber optic infrastructures, as they recognize such assets are crucial to economic development and growth strategies and are not merely an entertainment medium, with the initiative being led with full support from city council to allow private investors to utilize all available assets to fund and deliver such platforms. We understand that every community is diverse in its demographic makeup. Our overarching solution provides benefits for all involved in the deployment of a FiberCity."

As a result, SiFi Networks says:

- Citizens benefit from superfast gigabit Internet in the home and at work.
- Local businesses can exploit their increased bandwidth in a plethora of manners to improve efficiency or open new markets.
- Municipalities benefit from boosts to the economy, attracting new development to the city through commercial and residential construction and future proofing their city's communications network for decades to come, supporting their businesses and stimulating growth.
- ISP providers become the first entrants into a city to bring speeds up to a gigabit, giving them unbeatable opportunity to gain a previously unprecedented market share.
- Investors become the beneficiary of a future-proof fiber optic infrastructure.

"Finance has long been viewed as a major barrier to deployment of fiber to the home," says SiFi Networks, which says it "is able to bring blended investment structures and create attractive projects that create secure cash flow. We believe in having close working partnerships with all stakeholders, working together

to ensure the fiber network is not only a success but all stakeholders reap the benefits of delivering such a vital lifeline for the growth of the world's economy. Working in partnership with municipalities we can design, build and manage the fiber network, partnering with ISPs who wish to take advantage of supplying a community with ultra-high speed Internet access. "

The how to of FTTH clearly has many potential paths. Choosing which is the right one is a matter of preference as much as it is risk tolerance. In either situation above, the motivations remain the same for the communities. Boosting the local economy is a top priority and one that is sure to generate serious interest and momentum. **IT**

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

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Will Messaging Displace Voice?

You already know that landline telephony has lost its primacy in the communications ecosphere and how voice has more competition than ever before. While the installed base of PBXs and IP PBXs remains ubiquitous, there are forces pushing inward from the edges to change this equation. First we saw the rise of e-mail, a zero-cost alternative for everyday needs. The economics are great, and in many cases, near real-time communication is good enough. Not only that, but along with the pervasiveness of e-mail comes an acceptance of a less personal mode of communicating.

The double-whammy against landline telephony comes with the advent of mobile broadband. This is much more recent, but it signals a mass transition away from desk phones over to mobile devices. In many cases, this is a better way to do telephony, not to mention adding the forms of data that expedite the need to communicate quickly.

When you put all this together, it's not surprising to see how texting and messaging have become so popular in the business world lately. Think back to the early days of Skype and how this expanded the voice business. Of course, Skype siphoned paid minutes away from incumbent carriers, but it also got people talking more by virtue of being free. Not only did Skype open up the consumer voice market, but its appeal has also translated nicely to the business market. That pattern is repeating now in the messaging space, which is poised to amplify the impact of e-mail on another level. Voice definitely has its merits, but businesses still spend a lot of money on telephony. Applications like Skype are free or near free, but are complementary at best for businesses. There are too many issues around quality, reliability, features, and network access to be a replacement for existing phone systems.

Messaging is the new voice

Now, let's add to that the emergence of Millennials as a force in the business world. By 2025, it's expected that 75 percent of the workforce will be digital natives, and if you've been reading my column, you'll know this is a different demographic from the pre-Internet generation.

Not only has this audience moved away from the desk phone to mobility, but they're also moving away from voice to text. That's two big strikes against your phone system, and on top of that, messaging is free or near free. Some businesses have moved away from desk phones altogether, and this trend is only going to accelerate once Microsoft Lync converts more enterprises to their voice applications.

A recent study by BI Intelligence pulls together data from various sources showing the near-exponential rise of texting activity. Not only does this research show how the major messaging applications are adding users at 15 percent or more quarterly, but how end users are spending upwards of three hours per week doing messaging.

Major messaging applications are adding users at 15 percent or more quarterly, but how end users are spending upwards of three hours per week doing messaging.

To be clear, this data is consumer-driven and largely reflects Android usage, but the overall trend is undeniable. A common theme in my column is the idea that consumer experiences and expectations are finding their way into the business environment, and messaging is bound to follow the pattern. Just like the way Skype expanded the voice pie, messaging will expand the pie for text-based communication. Businesses like it because it's much cheaper than voice, and employees like messaging because it's quick.

As noted above, the speed of business is increasing, and messaging can bring a lot of business value when short and sweet does the job. When you look at it that way, Facebook's move to acquire WhatsApp makes more sense. I'm not saying it'll be a player in the business space any time soon, but the world is moving to shorter forms of communication, and clearly, Millennials don't mind that it lacks the warmth or personal touch of voice. Like anything else, there's a tradeoff to be made with innovation, and if messaging isn't part of your UC roadmap, don't blink or you might miss the next big thing. **IT**

Jon Arnold is the principal at J Arnold & Associates (www.jarnoldassociates.com).



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By Phil Edholm



WebRTC and Webification: Driving Feedback in the Contact Center

I have written a bit about how WebRTC enables a new paradigm in customer interaction, Interaction Experience 2.0. One major point of this discussion is that more than 70 percent of calls into a contact center are preceded by a website visit and, increasingly, customers are looking to resolve these issues on the website as self-service customers. In Interactive Experience 2.0, the concept of using the website contextual information to first get the right agent and then to optimize the resolution of the issue were primary factors of the value of web/contact center integration. As WebRTC enables this process to be intimately integrated to the website, context connections are easier.

However, the biggest value of integrating the real-time human interaction tightly to the website may be the use of feedback from the contact center to optimize the website experience. To understand how this changes customer service, we must look at the types of customers arriving to the typical contact center. There are three types of customers: Concierge Class (10-15 percent), Web Class (70-90 percent), and Loss Class (10-15 percent). Concierge customers

is critical, while the Loss or Low Value Class needs to be pushed to an IVR to enable business transaction at lowest cost. The goal for the larger Web Class self-service group is to complete the transaction on the website, and most of the users would prefer that as well; any transaction that results in the customer leaving the website to talk to an agent is a major issue. In Six Sigma terms, a self-service web customer opting to talk to an agent is a defect in the website, as the goal is to have 100 percent of the transactions completed on the website.

Contextual information is gathered on the website and continued in the contact center to identify and categorize the defects.

Data suggests that the Web Class is increasing as both the Concierge Class and Loss Class are shrinking. The Concierge Class is shrinking due to education and web awareness growth in the members as well as older members aging out. The Loss Class is shrinking as more members get access to the technology through new devices like smartphones as well as leaving for

easier places to do business. The result is that over the two to six years of webification, the Web Class will probably grow to more than 90 percent of the customers.

The combination of these factors can have a major impact on the number of calls that come to the contact center as well as the time required to resolve them. If context information from the website for the 70-90 percent of customers generates a 15 percent reduction in time to resolution,

and that 25 percent of the defects going to the contact center can be eliminated, the impact on the call volume in the contact center will be dramatic. The combination of all of these factors could be a 40 percent reduction in total agent time in a typical web integrated call center over the next six years.

While this journey will not be easy, the combination of WebRTC, the web contextual information, and Six Sigma analysis and feedback techniques can generate huge cost reductions, while

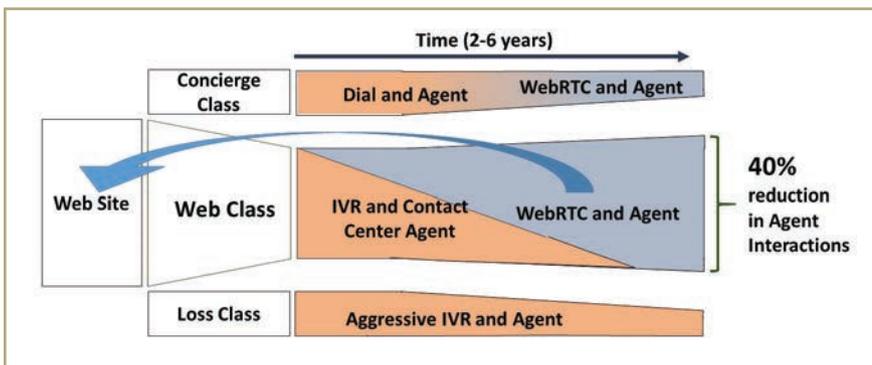
dramatically increasing customer satisfaction through rapid problem resolution on the website. The impact of Interaction Experience 2.0 is something that must be considered when evaluating your contact center investments going forward. **IT**

Phil Edholm is the president and founder of PKE Consulting LLC (www.pkeconsulting.com) and works with INTERNET TELEPHONY parent company, TMC, to stage the WebRTC Conference & Expo.

The biggest value of integrating the real-time human interaction tightly to the website may be the use of feedback from the contact center to optimize the website experience.

are those who would prefer to talk directly to an agent and have the economic business value to enable that. Self-service or Web Class customers would either prefer to use the website or are willing to if pushed by an economic incentive. Finally, Loss Class customers are those who do not have sufficient business value to enable going directly to an agent, but do not want to use the website.

The service goals are different for the three classes. For the Concierge Class, always having direct customer access to an agent



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WebRTC Disruption: Evaluating the 3GPP Study

WebRTC is starting to gain traction, and you can tell that for one reason.

It's not because we have trade shows dedicated to it now, or the steady increase of WebRTC-related press releases hitting the wires. It's not because we're seeing real-world deployments, such as the Amazon Mayday app. And it's not even because Dialogic announced at the Atlanta WebRTC Conference and Expo in June that it had more than 90 active engagements with its PowerMedia software-based media server product.

No, the main reason why we know that WebRTC is gaining traction is because the 3rd Generation Partnership Project has taken notice. This means that WebRTC now has enough support to impact IP multimedia subsystem environments.

IMS is humming along, and 2014 looks to be the year of voice-over LTE deployments. But beyond VoLTE, what about other applications on IMS? To be fair, there are rich communication services, but most of the apps running on LTE networks are over-the-top apps like WhatsApp. Carriers see WebRTC as a way to take back control of subscribers, possibly by offering OTT apps as value-added services that they provide.

With that kind of thinking in mind, the 3GPP has started to architect interoperability between IMS networks and WebRTC. This work is being documented in 3GPP's TR23.701 report, which outlines potential modifications to the IMS architecture, including, of course, a WebRTC-to-IMS gateway, described in the group's parlance as an eIMS-AGW. A basic use case for eIMS-AGW would be someone initiating a call from a WebRTC browser on his smartphone to either a feature phone or a smartphone. eIMS-AGW is required to ensure that the media from WebRTC, such as an Opus audio codec or a VP8/VP9 video codec, gets transcoded to an appropriate IMS codec. Obviously, since the whole communications world isn't yet a WebRTC world, connecting and transcoding to other than WebRTC is a big deal.

Beyond eIMS-AGW, 3GPP's report addresses several items

that will be critical to WebRTC-IMS interoperability, such as the WebRTC web server function, which is a web server that serves HTTP(s) and enables WebRTC "calls" to be launched from a URL. The study also takes a look at eP-CSCF, which is essentially an IMS policy routing engine in the form of a session border controller or IP-IP softswitch that includes WebRTC signaling. eP-CSCF also incorporates roaming, a factor that is rarely brought up in WebRTC conversations but deserves to be.

The ability to route and charge off of WebRTC information is important, but potentially controversial since future WebRTC endpoints could be SIM-less. Because WebRTC is more of a peer-to-peer play, it does not require a phone number or even a SIM. So if WebRTC takes off, the smartphones of the future may not even have phone numbers, which would bring up some interesting questions for carriers regarding roaming charges.

While the study nails it for the most part, one missing item is a WebRTC-enabled media server (let's call that the eMRF to keep the parlance). While media servers aren't required for basic peer-to-peer calls, they will be necessary for any kind of value-added service, be it a conference call, voice or video mail, text-to-speech, or digit detection. Additionally, if a carrier wanted to insert text to the media stream to obtain advertising revenue, a media server would be required.

More importantly, the future of value-added services is likely not in specific voice-based or text-based services, but in web-based services that include some aspects of real-time voice or video. A media server will be required here as well. Since carriers view WebRTC as a way to control value-added services, 3GPP needs to incorporate eMRF into its architecture.

The traction that WebRTC has obtained to date in the industry is substantial, but there is still a ways to go. To realize the full potential of WebRTC, interaction with other standards such as IMS will be crucial. ■

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

The main reason why we know that WebRTC is gaining traction is because the 3rd Generation Partnership Project has taken notice.

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The Wireless Incentive Auction: What Will It Deliver?

On June 2, 2014, the FCC released the 3-2 vote, 484-page Incentive Auction Report and Order. Three weeks later the FCC release the estimated timeline for the auction.

FCC Chairman Tom Wheeler is all business about getting the Congress-mandated auction approved. He is sending the message that he is working diligently to keep all the parties happy.

The forthcoming FCC Incentive Auction is reported to be the most complicated and risky spectrum auction ever attempted. The goal is to transfer 80 to 120MHz of TV spectrum (equal to 20 channels) from TV broadcasting to mobile use.

What will be accomplished in the process? An estimated \$20-\$25 billion will go to the government for various uses, including paying for FirstNet, a nationwide, public safety LTE data network. Mobile carriers will pay for and receive exclusive licenses to use prime spectrum. TV stations now scattered across channels 38-51 (614-698MHz) will either voluntarily go off the air or be moved down into VHF or lower UHF channels. And wireless broadband cloud-direct agile radios, also known as TV white spaces radios, will receive access to new unlicensed spectrum in urban areas like Los Angeles; New York City; Washington, D.C., and regulatory certainty in areas like Nashville.

The auction is a turning point in the TV industry and for America. Without TV stations selling out, the auction could fail. Chairman Wheeler, in his June 25, 2014, FCC blog encouraged TV stations to keep their chins up.

"Robust participation by broadcasters will be critical to the success of the auction," he wrote. "The auction is a risk-free, once-in-a-lifetime opportunity for broadcasters, but the decision of whether or not to participate is completely voluntary and confidential. We recognize that spectrum auctions are new for most broadcasters, and that we owe them additional information before the incentive auction."

Mobile carriers are now well into building out LTE located in the \$19 billion of spectrum purchased in the 2008 Auction 73 spectrum. The 2008 Auction 73 spectrum is just above the TV incentive auction spectrum in range of former TV UHF channels 52-69 or 698MHz-806MHz. The new TV incentive auction

600MHz spectrum will begin the uplink portion at 698MHz (Channel 51) and move down to a duplex gap or an unlicensed gap spectrum between the up and downlinks, the downlink portion which will vary based on TV station location and geography, and guard bands between the TV stations and the new 600MHz mobile spectrum.

The new 600MHz spectrum is valuable (worth \$20-\$25 billion) to mobile carriers for several reasons. It could help them address growing demand for mobile data. The 600MHz spectrum propagates well through buildings and foliage just like UHF TV and public safety two-way radios, allowing mobile services to reach inside buildings and homes and decreasing the infrastructure requirements. And it would mean the cost for base stations will decrease because by harmonizing the U.S. spectrum plan with similar plans in other countries equipment costs for U.S. deployment will gain volume efficiencies. Not only will the carriers spend \$18 billion on the new spectrum, but they will also spend an estimated \$30-\$50 billion building out the spectrum with new small cell base station infrastructure.

The auction will take place in 2015. In 2014, the FCC will determine starting prices (the highest price offered) for the TV reverse auction, how to determine TV market variations like population served, contours, and nearby interference. The TV White Space Part 15 order will be revised to allow cloud-directed agile broadband radios to operate in the repackaged TV spectrum alongside wireless microphones. In 2015, the FCC will finalize which stations can compete in the auction. In the meantime, many webinars, tutorials, and seminars will be delivered by the FCC to all parties explaining the issues and hearing from the participants.

The final days of TV broadcasting are upon us. TV stations are being shuffled and shuttered. Over-the-top video is slowly but steadily replacing over the air broadcasting. Selling based on the spectrum value, as opposed to business value (such as a multiple of revenue or earnings), will be a very tough decision to be made by the TV stations and the public servants of our communities. **IT**

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

**The final days of TV broadcasting
are upon us. TV stations are
being shuffled and shuttered.
Over-the-top video is slowly
but steadily replacing over
the air broadcasting.**

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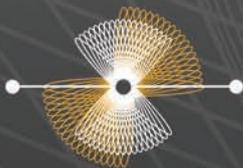


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Making Magic with M2M

Sprint Reveals the Special Sauce

Machine-to-Machine continues to emerge as a potent technology that improves nearly every facet of business, across many kinds of organizations. That's because M2M can allow for market and revenue growth, operational efficiency, safety, and security.

The use cases for M2M are broad. It can be employed to create savings and new revenue opportunities in a variety of applications such as asset management, business collaboration, enterprise mobility management, field force management, fleet management, retail, usage-based insurance, and much more.

To get the most out of an M2M deployment, however, you need to have the right ingredients and work with a partner that knows how to fold them all together to create the right mixture and balance. Sprint, says Mohamad Nasser, senior director of M2M products at the company, is uniquely positioned to be that partner.

"Sprint understands the complexity and challenges businesses face in developing and rolling out M2M solutions," says Nasser. "The growing impact of the Internet of Everything can bring advantages to companies' bottom lines, including increased revenue and reduced expenses, higher productivity, and an enhanced customer experience."

The network is, of course, a key part of the value Sprint brings to the table.

The company offers clients the ability to access wireless data service in more than 165 countries around the world through the Sprint Global IP network. Sprint's wireless network employs 2G, 3G, and 4G technologies. The company leverages CDMA both for 2G (1xRTT) and 3G wireless networks, and its 4G network is based on LTE.

While some network operators are sunsetting their 2G networks, Sprint continues to deliver 2G to provide customers



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with the flexibility to choose the connectivity that best meets their needs. That's because different verticals and businesses have different bandwidth needs. Take connected transportation, asset tracking, metering and monitoring applications.

"Most of the M2M applications are bursty and not thirsty for data," says Nasser.

At the same time, Sprint delivers higher-speed networks and connectivity to support customers with more bandwidth-intensive applications like advertising, digital signage, public safety, and video.

"The beauty of Sprint's widespread bandwidth offerings and network assets is that it has the ability to take a customer from

THE BENEFITS OF M2M

M2M helps managers expand market insights they need to create competitive advantage,

- adding intelligence to data by providing real-time insights to assist in quicker decisions and better solutions;
- enabling companies to do business more efficiently, with greater geographic scale through mobility;
- increasing the reach to monitor and manage by using cellular connectivity; and
- providing unique insight into the Internet of Everything by making networked connections more relevant and valuable.

low bandwidth and graduate them up as they're ready – the big emphasis is on the customer and helping them achieve the goal at hand," says Nasser.

With 55 million customers, and more than 90 percent of Fortune 500 companies, Sprint is a proven entity in the communications arena. It has long been a leader in networking and is a pioneer in wireless specifically. For example, Sprint was the first national carrier in the U.S. to introduce 4G service and was a leader in introducing international push-to-talk capabilities.

Sprint goes far beyond just the network piece in helping customers create M2M solutions, however. Given M2M is about solutions, and not just connectivity and devices, that's key. M2M requires a deeper understanding of customer needs and goals, and of the verticals in which those customers exist, Nasser notes.

Understanding those requirements, Sprint offers guidance on how M2M can be used to meet the specific goals of each business, providing insight on what data should be collected; the best tools to aggregate, analyze and propagate that information; and assistance to enable businesses to operationalize what's learned in the process. Sprint helps outfit M2M customers with the right mix of billing, customer care, data analytics, management tools (including self-service device management) – and a single portal through which they can use any device and connection to see their M2M network and devices.

In what many view as a fragmented ecosystem, Sprint brings together its own expertise, along with the experience and offerings of an ecosystem of partners, to provide comprehensive M2M solutions to organizations. That ecosystem includes a community of software vendors, system integrators, application platform providers, hardware manufacturers, wireless module providers, and mobile operators.

Its comprehensive approach to M2M has earned Sprint a position on Connected World's CW 100 list of the most important and influential providers of M2M services for nine consecutive years. Machina Research ranks Sprint among the top global players on its M2M Leaderboard.

M2M offers organizations a wealth of opportunities to save on costs and generate new revenues. Indeed, 94 percent of businesses see a return on M2M, with 36 percent seeing significant return.

With a partner like Sprint – which delivers long-term network choice and global reach, extensive support services, a global platform with managed service options, packaged and custom-made solutions designed to meet customer needs, and an expansive, diverse ecosystem – organizations are better positioned to get the full flavor of M2M by meeting and exceeding their goals. **IT**



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Panasonic SIP Phones

Feature-Rich Solutions in an Attractive, Durable Package

Panasonic is very serious about the business phone market, and its latest entries in the space show the company has put its considerable consumer expertise behind a pair of phones that leave little to be desired.

The KX-UTG200B and KX-UTG300B SIP phones are the latest additions to Panasonic's lineup of advanced UTG Series SIP-based telephones, and they are good looking additions to any desk. The G300B has a capacitive-touch screen, and both are extremely durable (we banged the handsets on a wooden desk to check for rattles and loose connections just to make sure).

Connectivity and features

Both devices are certified to work with BroadSoft, Digium, and Metaswitch solutions. They feature HD voice support; two-class two PoE Gigabit Ethernet ports; and 24 programmable keys with 1,000 phone book entries and 300 log entries for placed, received, and missed calls.

The company also touts the products' ability to support 36 additional extensions and their two-year warranty. There is also a low-power mode, which reduces networking speed but will save on electricity costs. This table includes some of the other important specs.

	KX-UTG200	KX-UTG300
Screen	3.5 inch 320/240	5-inch 800x480
Codecs	G.711, G.729AB, G.722, G.726	
Electronic Hook switch	RJ11 Jabra and Plantronics	
Expansion Module	No	Yes, KX-UTA336B
MSRP	\$269	\$379

Target market

The company is touting its phones as the perfect companions for hosted providers as well as the open source market. This is one of the reasons it launched the phones at the recent Metaswitch Connections event in New Orleans.

Education, health care, and hospitality are some of the vertical markets for which this phone was designed.

Connectivity

The phones were tested on a Fonality phone system, which is open source based and they were not preconfigured to work with such a system making the setup process more difficult. In addition, the device did not support DHCP and the web interface had to be enabled out of the box. Panasonic was nice enough

to send someone to help configure the phone, but it took two hours. My advice here is be sure your phone system is supported, or just get familiar with the process for your particular system, and be aware it may take time for your initial deployment. Bluetooth on the other hand was bulletproof – we were able to connect the system to a Plantronics Savi phone system on the second try and the quality of the connection was impeccable.

Sound quality

Panasonic is almost a legendary name in the home and small business phone market. The quality the phones delivered was exactly what we expected it to be based on the many decades of experience the company brings to the table. In addition, the speakerphone was excellent – vibrant and clear.

Controls

You have to love capacitive touch – it seems we have become so accustomed to it that when we don't have it, we get frustrated. Thankfully, the KX-UTG300B supports it. The interface is good, but has some interesting quirks. For example, when you have a full screen of menus and need to scroll, you can't swipe. Instead, you use the down-



▼ The Panasonic KX-UTG300

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Considering the heritage of the company, the features, functions, and solid construction of these devices, we feel these phones represent a solid value.



▼ The Panasonic KX-UTG200

arrow key on the pad below the screen. If you select a menu with the enter key, you would imagine the arrow key pointing to the left would move you backwards. This is not the case – instead you use the back button on the screen (the 200B has a dedicated back button). In a way this makes sense because Android and many car companies (Nissan, for example) use this system, but if you are using the arrows to go down, it may be just as intuitive to use the left arrow to go backwards.

Reliability

It is difficult to determine the long-term reliability of products without having hundreds or thousands of them to test for many months or years. Having said that, the company has done some impressive things to ensure reliability. Panasonic touts its manufacturing facility, which is accredited by quality management systems certification, ISO9001/14001, TL9000, and OHSAS 18001. There is the two-year warranty we mentioned, eight-hour burn-in testing, toll-free U.S.-based tech support, no charge for return shipping, etc.

Value

Considering the heritage of the company, the features, functions, and solid construction of these devices, we feel these phones represent a solid value. You can purchase a KX-UTG200B UTG for about \$214 as of this writing, representing a 20 percent discount.

Future roadmap

The company doesn't support video calling at the moment and plans to support Microsoft Lync going forward.

Room for improvement

Aside from minor UI improvements and support of the specific phone system we chose to test with, we can't recommend many improvements. Having said that, USB support across all phones and connectivity with mobile devices would be nice additions to the roadmap.

Conclusion

Panasonic wants to become more entrenched in the high-end business phone market, and these two devices do an admirable job of presenting the customer with a solid value. Frankly, we believe the company is very late to game with these new phones, but at the same time, for many customers they will be worth the wait. After all, you get the well-known Panasonic quality and durability and decades of experience with lots of features at a reasonable price. **IT**

RATINGS	MY SCORE
Installation	★ ★ ★
Documentation	★ ★ ★ ★ ★
Features	★ ★ ★ ★ ★
Usability	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ★
Value	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ★

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BSS & OSS Solutions

The global OSS BSS market is forecast to grow at a CAGR of 16.39 percent between 2012 and 2016, according to ResearchandMarkets, which says this space is seeing a shift from multiple platforms to a common platform.

The new model for communications service provider operations is a platform approach equipped with off-the-shelf software and pre-integrated OSS and BSS functions, according to Stratcast/Frost & Sullivan.

"In this platform approach, the burden of traditional systems integration and testing, not easily addressed in the past, is mostly eliminated," according to the firm. "Additionally, off-site hosted solutions address widening gaps in existing systems and processes due to new technology introductions, changing business models, and compelling, yet unanticipated, business opportunities.

"Today, most large OSS/BSS suppliers innovate around processes and platforms, while innovations from smaller suppliers tend to address specific functional or cross-domain inadequacies of previously installed systems," Stratcast/Frost & Sullivan said in a report. "The challenge for CSPs ... is that they need innovation in all areas. Compounding this challenge is that the number of large OSS/BSS suppliers is shrinking as the market consolidates to favor larger vendors that can deliver end-to-end OSS/BSS solutions."

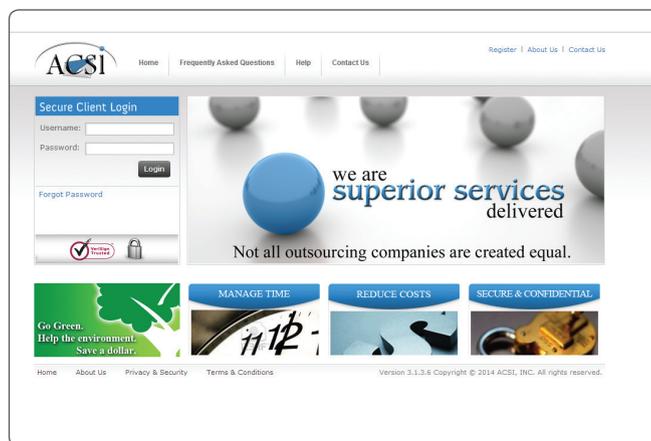
Here's a rundown of some of the offerings in the BSS and OSS space, as submitted by the vendors in this arena.

Accenture **www.accenture.com**

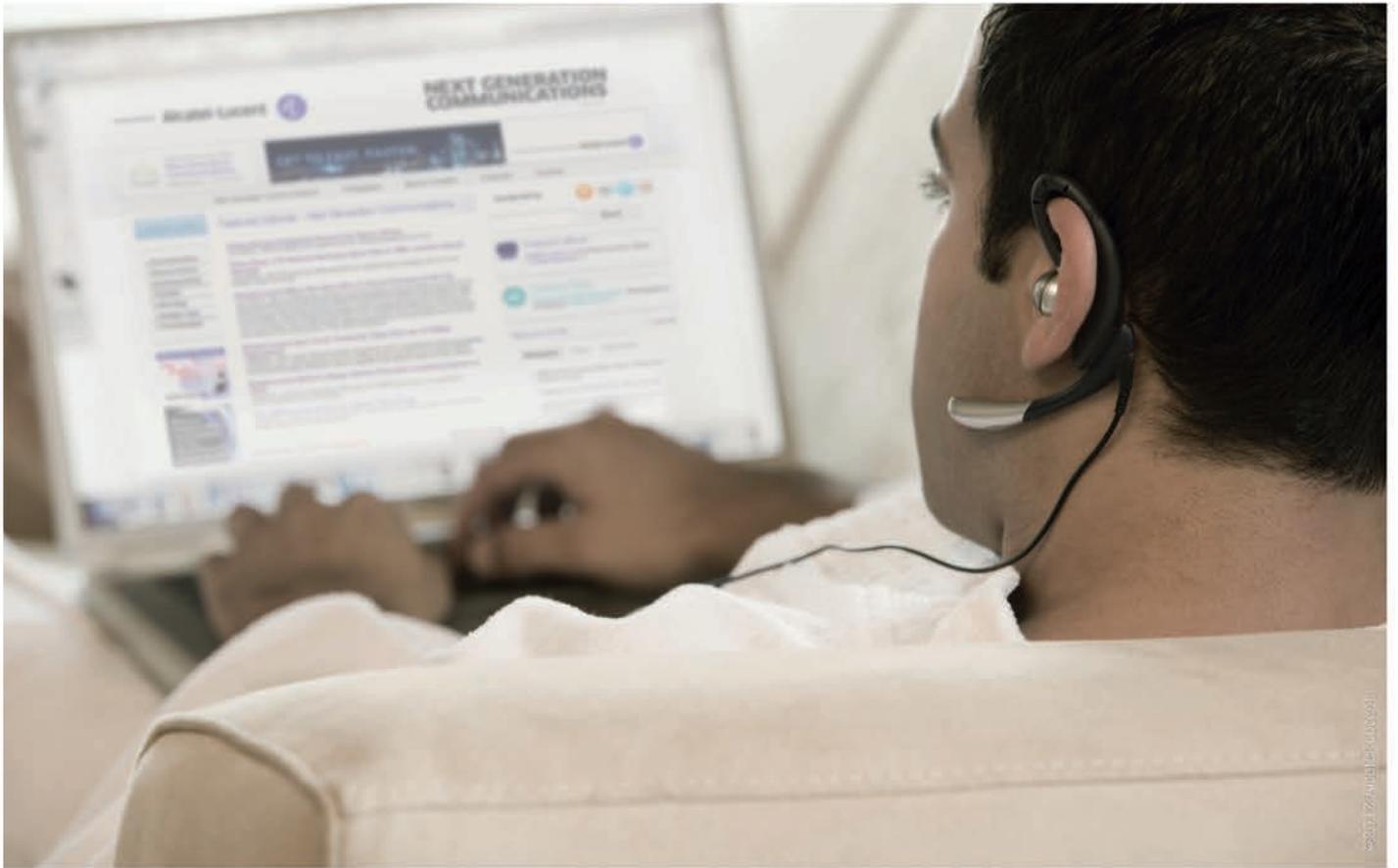
Accenture offers a comprehensive BSS and OSS portfolio. Its BSS offerings are focused on customer experience (such as online interactions, shop of the future, real-time decisioning, call center optimization, and social and knowledge management); customer analytics (including digital consumer analytics, churn protection, and ARPU-boosting analytics); digital marketing, data monetization, and marketing managed services; sales force operations (including sales enablement and spend optimization), product/customer and order management; intelligent command center powered by analytics; BSS

for partners (such as partner enablement and collaboration and ecosystem integration); and billing (including convergent billing and policy management). Accenture offers end-to-end OSS solutions and services, which enable communications service providers to transform and integrate capabilities in all their core processes: network planning, network deployment, inventory and data management, integrated real-time order management, provisioning and activation, device management, customer experience management, proactive and reactive assurance, and workforce management. In addition, Accenture is helping CSPs in exploiting the potential of network transformation, through a comprehensive approach for network cloud configuration and orchestration, network/OSS analytics, and OSS for digital.

ACSI-Automated Communications Services **www.weareacsi.com**



ACSI is a communications management and electronic payment solutions service. Its cloud-based software service in combination with its automated document factory allows for the delivery of statements, invoices, and bills through multiple channels including print, e-mail, SMS, and web hosting. Through this platform documents can be viewed, tracked, sorted, cleansed, and searched by job or item. The software comes with several reporting options that can be easily integrated with any accounting software. This solution also includes a secure electronic payment portal that is fully branded to clients and allows their customers to pay bills via ACH, credit, and debit. ACSI solutions are sold as a service, making them affordable and customizable. ACSI also specializes in trans-promo marketing, document design, and process consulting. Trans-promo services allow clients to reduce their communications and billing costs through advertising revenue or up-sales. The ACSI document design team creates professional invoices and statements that are specifically designed to drive end users toward cost saving e-delivery and DSO reducing e-payment.



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- How to leverage a high value network and Web 2.0 capabilities
- New ways to deliver a superior customer experience

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Amartus Inc. www.amartus.com

Chameleon SDS is a service delivery automation software solution that enables rapid roll out, provisioning, and operation of network services over existing carrier Ethernet, IP-MPLS and optical networks, and future SDN and NFV networks. Key benefits of the solution include dramatically accelerated time to market with the latest services and technologies, and full automation across the service delivery life cycle. Chameleon SDS is built on Amartus' Chameleon OS dynamic, model-driven orchestration platform and implements standards-based service and resource layer abstraction that is technology-, service-, and vendor-agnostic. Chameleon SDS includes service orchestration that provides full service lifecycle management including design, inventory, provisioning, and assurance for any type of network service via a generic service layer abstraction. Network orchestration includes inventory, configuration, fault, performance, and usage for all types of network resources via a generic resource layer abstraction. Chameleon SDS offers an open, RESTful API that is dynamically rendered from the comprehensive service and resource models integrated into the software, and exposes all of the orchestration capabilities without the need for separate interface development cycles.

BillingPlatform.com www.billingplatform.com

PRODUCT AND COMPONENT	RATE	MBR CHARGE	CUSTOM FORMULA
Colocation -J- COLO Internet 2 Dig - 1 Year Term	10	0	
Internet -J- Internet w/ Transport - Month to Month	50	0	
Taxes & Surcharges -J- NV Universal Service Fund	0	0	
Colocation Space -J- Half Rack	285	0	
Colocation Space -J- Full Rack	685	0	
Colocation -J- COLO Internet - 1 Year Term	12	0	
Colocation -J- COLO Internet - 5 Year Term	9	0	
Taxes & Surcharges -J- Local License Tax	0	0	
Colocation Access -J- Colo Internet Service - 1 Yr Term	7	0	
Internet -J- Internet w/ Transport CIR Rate - 5 Yr Term	65	0	
Internet -J- Internet w/ Transport CIR Rate - 3 Yr Term	50	0	
Taxes & Surcharges -J- Federal TRS Fund	1	0	
Taxes & Surcharges -J- Other - Property Surcharge	1	0	
Colocation Access -J- Colo Internet 2 Dig Min - 5 Yr Term	6	0	
Taxes & Surcharges -J- CA Teleconnect Fund	2.53	0	
Colocation Access -J- Colo Internet Bursable	4	0	
Internet -J- Internet w/ Transport - 5 Yr Term	45	0	
Colocation Access -J- Colo Internet Service - 5 Yr Term	85	0	

BillingPlatform.com offers a comprehensive, billing solution for enterprises of all sizes and industries – available in the cloud.

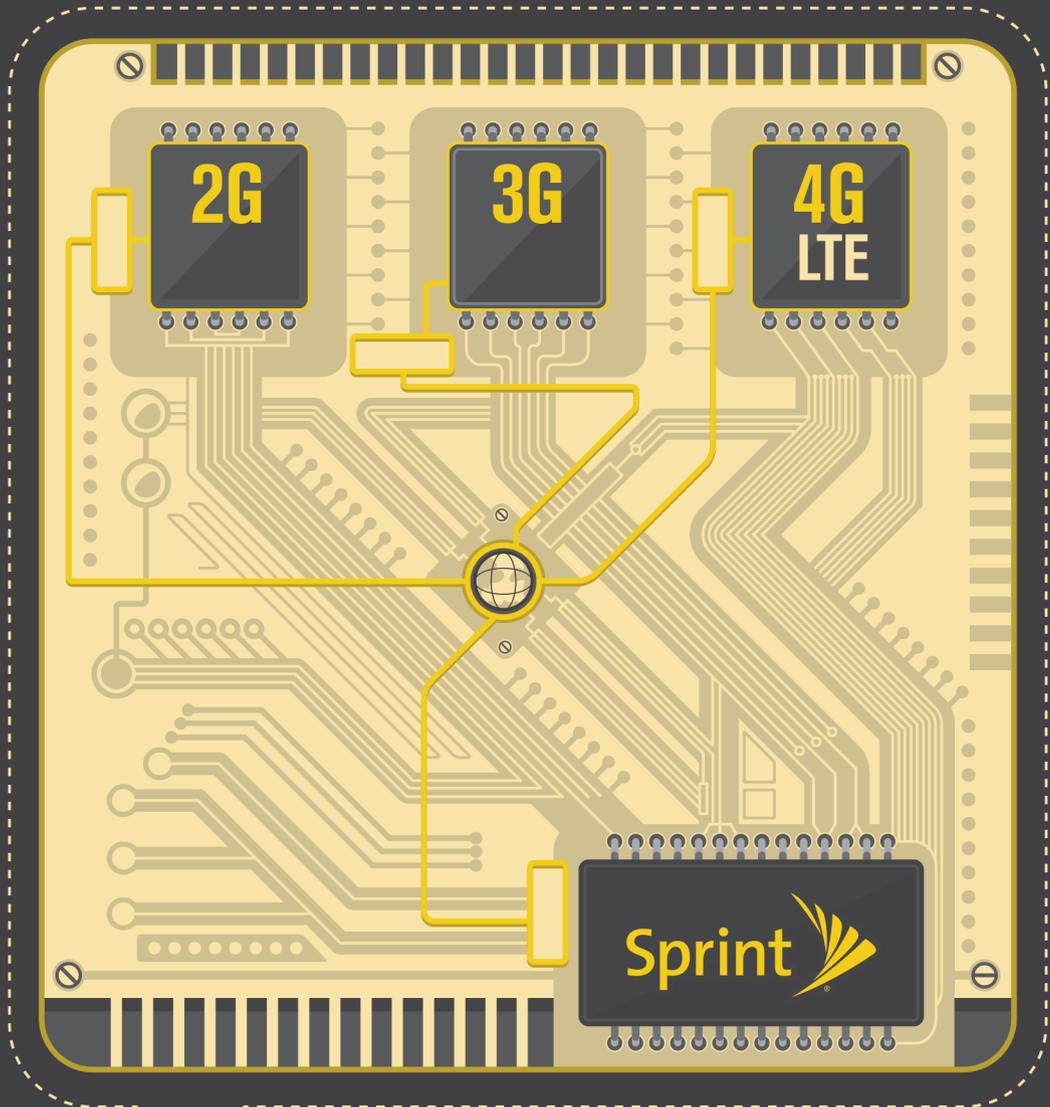
Its customer base is spread across a variety of different markets, many of which are in diverse sectors of the telecommunications space, including VoIP, cellular, satellite, and network backbone, among others. Its suite of features cover the full spectrum of convergent billing needs and can be rapidly customized to fit any business model or process and quickly adapted to reflect new product and service offerings. The application allows companies to create complex, competitive service bundles easily and on demand to help reduce product development cycles and speed time to market. The platform can also rate and mediate high-volume usage in any format as well as support blended rate, flat fees, and subscriptions with overage tiers. Its customer-centric invoicing, rating, and dunning allows for client-specific invoicing cycles as well as custom invoice layouts, flat-file feeds, dunning, and payment options. Like Salesforce.com, BillingPlatform.com offers a completely configurable user interface and data model that can be leveraged to seamlessly integrate related business processes like provisioning and sales into invoicing and rating via built-in, dynamic web service APIs or application front-end extensions.

Device Cloud Networks <http://devicecloudnetworks.com/>

Device Cloud Networks' Service Delivery Platform is a global end-to-end enablement all-inclusive platform for enterprise machine-to-machine solutions that includes wireless connectivity, service provisioning, device management, and application enablement. DCN simplifies the process of bringing wireless connectivity to devices of any type. With a unique global subscriber identity module from DCN, connectivity can be embedded into an M2M device at the point of manufacturing, to create a single product SKU (along with the required value-added services and web-based management for global deployment. The reduced complexity, simplified logistics, and highly flexible business processes, including back-end billing and OSS/BSS, make the DCN platform an ideal choice for enterprises, OEMs, and mobile operator partners. The platform contains a set of features that are built to deliver true application enablement, achieved through a storefront of web services APIs that are specifically designed for both the creation and support of M2M applications.

Ensim Corp. www.ensim.com

Ensim enables complete automation and orchestration of BSS/OSS functionalities, including marketplace, subscriptions, service catalog, provisioning, billing, and operations, for service providers and enterprises to commercialize offerings in cloud environments. There are four main modules of its core Ensim Automation Suite platform. Ensim Cloud Marketplace provides a turnkey sales, marketing, and ordering portal with customizable content management. Ensim Service Catalog Manager provides complete dashboard, storefront, ordering, approval workflows, subscription and contract management, service



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As a carrier committed to network choice, Sprint believes customers should be able to choose based on their custom need, whether it's 2G, 3G or 4G LTE. That's why we plan to maintain each—including 2G—for the long term as part of the overall Sprint Network Vision strategy.

In short, we're in this for the long haul.

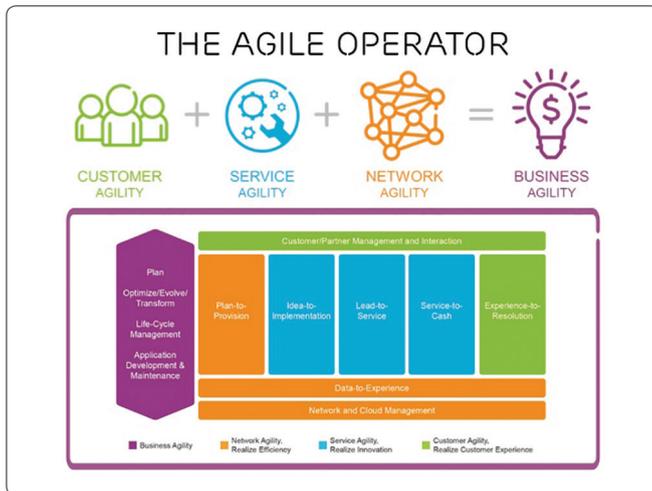
Visit m2m.sprint.com/sprint2g to learn more about Sprint's network commitment to 2G or to attend a seminar near you.



Roundup

catalog, product modeling, pricing, rating, billing with invoicing/charge-back, payment and reconciliation, and more. Ensim Service Operations Manager provides automated provisioning, activation, and element-level operational management of users and organizations in business applications, cloud services, and infrastructure with self-service role-based delegated administration, provisioning templates, granular entitlement and access control, change management, physical and logical resource management, metering and monitoring, usage collection, and reporting. Ensim Service & Application Connectors enable all of the automation functionality of the above platforms to be fully leveraged for fine-grain provisioning and element-level management for any application, service, or infrastructure system connected through standard web service APIs whether multi-tenant or single tenant, on premises or in the cloud.

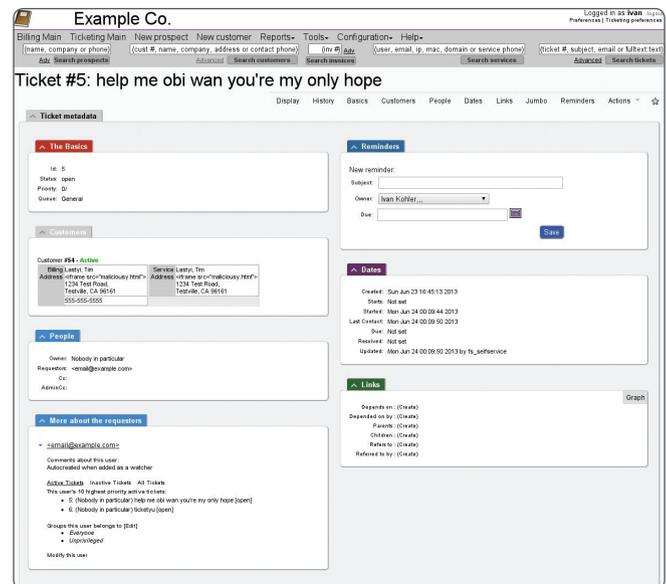
Ericsson
www.ericsson.com



Ericsson offers a comprehensive OSS/BSS product and services portfolio that helps operators achieve customer agility, service agility, and network agility. As a result, they are able to be fast, flexible, and in complete control. Ericsson's full spectrum of OSS/BSS solutions, known as the Ericsson Agility Suite, is based on a modern convergent architecture that is open, modular, and cloud-based. Cross-domain, cross-technology solutions allow agility in all major process areas, including Plan-to-Provision, Lead-to-Cash, Trouble-to-Resolution, Converged Billing, and Partner Interaction. Ericsson service enablement solutions deliver

customized subscriber offerings that create value for partners and monetize assets through agility, responsiveness, and unique user experiences. The company's convergent billing and revenue management solutions solve billing and charging challenges to increase revenues and customers. Ericsson revenue assurance solutions provide a structured approach to detect and prevent revenue leakage. Ericsson's fulfillment suite of products includes activation, configuration, and remote device management that speed time to market and enable accurate service fulfillment. Ericsson assurance solutions analyze and address customer experience, so operators can meet expectations and secure revenue. Ericsson domain management solutions enable successful service delivery through reliable network operation and control. The company's M-commerce platform enables operators to offer secure access to mobile money and create new revenue sources.

Freeside Internet Services Inc.
<http://freeside.biz/>



The Freeside billing platform is the premier open source billing, trouble Ticketing, and provisioning software for ISPs, VoIP providers, and other online businesses. Like Linux or Android, the platform is available under a royalty-free license and supported by a global community of developers from multiple companies. Since 1996, thousands of companies have used the software to bill millions of customers. The platform includes billing and converged invoicing for Internet, VoIP and telco services, including anniversary/pro-rating, usage-based billing, CDR rating, free minutes, caps, toll-free billing, minute pools, 1/6/30/60 second billing, 30/6 and other split billing, as well as real-time credit card and electronic check processing. The CRM module includes prospecting, quotations, and customer conversions. An extensive

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trouble ticketing system assists in support operations, and the customer portal allows customer self-care functionality such as signing up, changing plans, making payments, viewing usage, and more. The software supports retail and wholesale operation, and multiple companies or brands in a multi-tenant capacity. Freeside Internet Services offers turnkey billing appliances, implementation and training services, and customized billing solutions.

H2O Overgroup www.overgroup.com

H2O Overgroup provides cloud-based BSS/OSS solutions to acquire, support, analyze, and grow customers. H2O helps service providers grow beyond their legacy billing systems by reducing revenue leakage, billing inaccuracies, and system inefficiencies. H2O can be accessed on any web-enabled device, on any browser, at anytime. Service providers can be first to market by drastically reducing the time required to build new products and packages, which are accurately tax and billed. Real-time data reports offer valuable insight into customers and operations and enable more informed and effective business decisions. Custom reports can be created on the fly in a matter of minutes, not days. Also, H2O integrates with the top carriers and vendors, and the robust API allows clients to connect H2O with existing systems or sites. Key features include billing, commissions, CRM, customer self-care, enterprise customer portal, inventory management, rating, reporting, systems integration, and taxation.

JDSU www.jdsu.com/nse

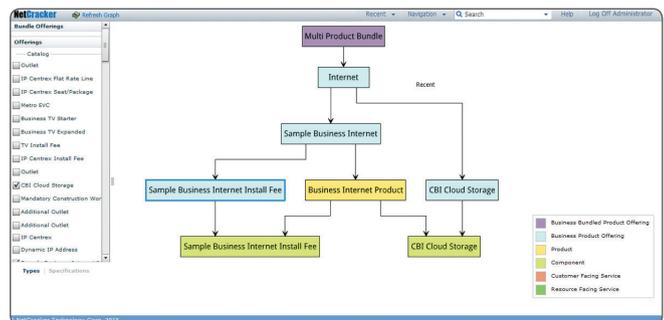
JDSU, a provider of network and service enablement solutions including testing, monitoring, assurance, and analytics, helps network operators overcome operational challenges associated with new technology and service introductions with broad B/OSS offerings. That includes xSIGHT Real-Time Intelligence and Analytics, a comprehensive portfolio for monitoring and assuring the performance of 2G, 3G, 4G/LTE networks and services including real-time data collection and mediation, customer experience assurance analytics, and open feeds to third-party applications for CEM and data monetization. PacketPortal is an intelligent platform using a new cloud approach to deliver intelligence collection and analysis. It is embedded deep into the network and provides visibility by empowering any monitoring, management, and business applications. EtherAssure is a suite of service assurance products for commissioning, troubleshooting, and managing Ethernet backhaul and Ethernet business services, including pre-qualification, turn-up,

acceptance, SLA/performance monitoring, and reporting. Video Service Assurance, meanwhile, is an end-to-end video monitoring solution to ensure and troubleshoot the performance of digital video, IPTV, and VoD applications. The solution includes the Video Stream Analyzer, RSAM Video probes, and PathTrak Video Monitoring System. Fixed Service Assurance is JDSU's product portfolio for assuring VoIP/IMS xDSL and TDM networks, including NetComplete xDSL, QT-200, and ONMSI. The company also offers a portfolio of Network Instruments products for monitoring and assuring application and network performance for enterprise business services.

LogiSense Corp. www.logisense.com

LogiSense is a global provider of usage rating and billing solutions to the telecom, hosted communications, cloud, machine-to-machine, and unified communications industries. To win in the connected world, service providers rely on LogiSense's flagship solution, EngageIP, to go to market quickly with new services, unique rating, bundles, tiering, and accurate rating for any service, any medium, any provider. Boasting field-proven scale, features, functionality, and performance, EngageIP addresses every aspect of network requirements – rating, mediation, billing, and customer self-care. For more than a decade, LogiSense has been providing solutions to solve some of the biggest challenges faced by today's service providers, empowering sales and marketing teams to win through advancing their usage billing models, react quickly to market demands, challenge the status quo, and position themselves to acquire new next-generation revenue streams.

NetCracker Technology Corp. www.netcracker.com



NetCracker 9 is the latest version of the NetCracker Telecom Operations and Management Solutions suite. To effectively consolidate and modernize the BSS/OSS environment, the NetCracker 9.x suite covers 11 critical areas of customer management, partner and channel management, product management, revenue management, end-user devices, service fulfillment and assurance, IT platforms, resource management, network

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Orga Systems GmbH www.orga-systems.com

Orga Systems is a software vendor for real-time products, with an international customer base in the telecommunications, utilities, and automotive markets. With Orga Systems' unified order and revenue management solutions, service providers benefit from a catalog-driven BSS for charging and billing, embedded policy, and customer order management. The GOLD product portfolio is designed to enhance service providers' capabilities to actively drive a new agenda for launching, selling, delivering and monetizing products faster and at lower TCO. GOLD Convergent Charging and Billing (GOLD CCB) is Orga Systems' end-to-end convergent online/offline charging, billing, and financial management product with embedded policy control for full monetization of any kind of voice, data, and content services with maximum flexibility. With Orga Systems' GOLD Catalog and Order Management (GOLD COM), new and innovative offerings can be launched and delivered faster and at lower total cost of ownership. Its central catalog drives multi-channel selling, order entry, customer order delivery, and billing. GOLD Smart Prepaid Utility Billing (GOLD Utility) is an end-to-end prepayment billing, energy vending, and customer communication with future-proof scalability and performance in smart grid infrastructures. Best-in-class consulting and implementation services guarantee immediate return on invest.

Redknee www.redknee.com

Established in 1999, Redknee is a provider of innovative software products, solutions, and services. Redknee's solutions enable service providers to monetize new services, business models, and content, and to deliver a connected customer experience – through SaaS or on-premises based solutions. Redknee's real-time monetization and subscriber management platform provides converged real-time, charging, billing, policy

management, and customer care solutions for more than 200 communications service providers and is supporting service providers to monetize the growing ecosystem of the Internet of Things. Redknee's modular product portfolio includes Redknee Unified, a modular product that provides real-time billing, charging, policy, and customer care capabilities across various industries; Redknee Unified Charging, a highly scalable and flexible solution delivering real-time, unified charging and billing of content such as calls and broadband access, SMS and video downloads, independent of the payment method; Redknee Unified Billing, a comprehensive billing and customer care solution that manages the entire customer lifecycle, from the retail experience, to activation and provisioning, to delivering advanced customer care and self-care, and manages any service across any access technology and supports any payment type; Redknee PCS, a highly scalable policy and charging rules function solution that provides the agility and flexibility to better manage data speeds, volumes, service quality and introduce new services quickly and cost-effectively such as cloud, M2M and OTT content and applications; and Redknee InBill, a complete wholesale billing and settlement solution providing cost-effective interconnect, content and partner billing capabilities.

Telinta Inc. www.telinta.com

Taxation	Abbreviated Dialing	Subscriptions	Notepad	Service Features	Permitted SIP Profiles
Address Info	Balance Adjustments	User Interface	Dialing Rules	Additional Info	Payment Info
Extensions	Huntgroups				

Service Type	Legal Intercept	Call Parking
Confferencing	No	No
Call Recording	No	No
Data Service	No	No
Callup Intercept	No	No
DID	No	No
Message/Service	No	No
Internet Access	No	No
Quantity Based	Use Default	No
Session Based	Use Default	No
Voice Calls	Use Default	No
Incoming Calls	Use Default	No
Outgoing Calls	Use Default	No
WiFi	Use Default	No

Telinta, a provider of white-label hosted solutions for telecom service providers, offers a cloud-based alternative to running your own BSS/OSS. TeliCore is Telinta's hosted platform, which fully integrates switching, billing, and customer management into a seamless solution. It's a single solution for flexible rating, billing, routing, reporting, self-care portals, and more. Customers can use it rather than having to piece together complex products from separate BSS/OSS vendors and hardware manufacturers. With TeliCore, telecom service providers can easily use multiple carriers and other third-party providers for DIDs, E911, taxation and other services directly from Telinta's hosted platform. VoIP service providers frequently rely on Telinta's 24x7 Technical Support team to help them whenever they need it, and from whatever time zone they are in.

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Roundup

TransNexus
www.transnexus.com

	Total Calls From Customer	Total Successful Calls	Call Success Ratio	Total Calls Completed	Customer Completed Call Ratio	Retires Per Call	Average Call Duration	Total Duration (minutes)	Post Dial Delay (seconds)	Call Detail Record
Day 2014-07-02 GMT+00:00+0000	6,432	9,284	98.4%	9,286	98.2%	0.1	0.37	5,726	2.0	
Customer-28	3,202	3,201	100.0%	3,195	99.8%	0.1	0.27	1,473	3.0	
Customer-41	3,142	2,995	95.4%	2,992	95.2%	0.1	0.40	2,031	2.5	
Hour:17	901	901	100.0%	901	100.0%	0.1	0.41	615	3.4	View C
86 China	8	8	100.0%	8	100.0%	2.0	0.41	5	1.4	View C
AL	17	17	100.0%	17	100.0%	1.6	0.41	11	37.9	View C
AZ	18	18	100.0%	18	100.0%	0.0	0.41	12	0.0	View C
CA	109	109	100.0%	109	100.0%	0.2	0.41	74	11.6	View C
CO	27	27	100.0%	27	100.0%	0.0	0.41	18	0.0	View C
CT	8	8	100.0%	8	100.0%	0.0	0.41	5	0.0	View C
FL	27	27	100.0%	27	100.0%	0.0	0.41	18	0.0	View C
GA	17	17	100.0%	17	100.0%	0.0	0.41	11	0.0	View C
IL	51	51	100.0%	51	100.0%	0.0	0.41	34	0.0	View C
IN	9	9	100.0%	9	100.0%	0.0	0.41	6	0.0	View C
NY	17	17	100.0%	17	100.0%	0.0	0.41	11	0.0	View C
LA	9	9	100.0%	9	100.0%	0.0	0.41	6	0.0	View C

The NexOSS VoIP Routing, Operations, and Billing Support System from TransNexus provides VoIP operators with an easy to use web interface for provisioning routes, rates, number translation rules, and monitoring traffic analysis and billing reports. It is the only solution on the market that is fully integrated with dynamic least cost routing and telecom fraud control. NexOSS features credit controls that allow users to set customized e-mail and SNMP alarm triggers based on hourly or daily spend rates per customer. This feature allows a service provider to receive real-time alerts and block or divert calls when customers are experiencing unusual or fraudulent activity, preventing future billing disputes. NexOSS also includes detailed call traffic and quality of service reporting, as well as multi-currency settlement billing features. The NexOSS CDRAnalyzer feature includes a simple, high performance application for archiving and locating call detail records. NexOSS is interoperable with most popular VoIP equipment including Oracle Acme Packet, BroadSoft, Cisco, Metaswitch, Taqua, and Sansay. **IT**

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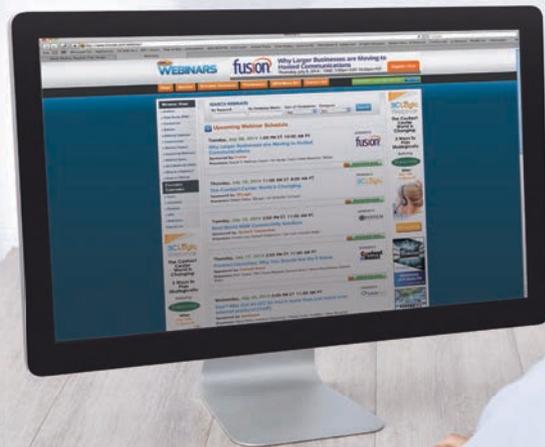
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INTERNET TELEPHONY Announces 2014 Channel Awards Winners

TMC and INTERNET TELEPHONY are proud to announce the winners of our newly established Channel Awards. As part of this effort, a variety of equipment and services providers were invited to submit applications for the awards. Those applications were then reviewed and analyzed by TMC staff in collaboration with INTERNET TELEPHONY columnist and channel expert Peter Radizeski of RAD-INFO Inc.

Here are TMC's Channel Awards winners for 2014.



Contact Center/CRM

WINNER: LiveOps

There seems to be little doubt that LiveOps is a unique company both in terms of its offerings and in the professionalism that runs across the organization. From our experience, the folks at LiveOps are all consistently on-message.

LiveOps provides cloud-based contact center and customer service solutions to more than 350 companies worldwide. The company also has been a leader in the WebRTC space, around which it has partnered with other notables, Google and Twilio.

"When we partnered with Twilio last year, our vision was to create a 'complete agent desktop in a box' – something that any organization could instantly deploy to replace the clunky combination of traditional agent software, computers, and desktop phones," LiveOps President and CEO Marty Beard said in announcing the Google partnership in June. "With LiveOps and Twilio CX for Chrome, we are once again transforming customer service by eliminating the last hardware barriers that exist in contact centers – namely a telephony infrastructure requiring traditional carrier circuits, phone systems, expensive desktop computers and real estate costs associated with housing on-premises technology and on-site agents. Now contact centers can finally hang up their physical phones for good and improve agent productivity with a single desktop for all communications."

Being able to differentiate your product in the marketplace is key for channel partners, and in this area LiveOps certainly delivers.

As for the LiveOps channel partner effort specifically, it's a world-wide program with a compensation schedule featuring a multi-tiered compensation package with discounts starting at 15 percent,

and increasing rapidly as MRR increases. Although the program is less than two years old, LiveOps notes that it is staffed by leadership who understands the channel. That includes Karl Gustafson, senior vice president of agent services, who managed marketing and sales teams for Apple, and Vasili Triant, senior vice president of cloud application sales, who came to LiveOps from ShoreTel. The program, LiveOps says, is also unique in the flexibility it offers partners.

"LiveOps is flexible with its service provider channel program to allow the partner to brand, market, and sell the product as if it was their own," according to the LiveOps application. "This allows service provider partners the ability to modify the LiveOps product to suit their specific needs. LiveOps will then help articulate their message, provide web-based quoting, and create a microsite that has the LiveOps platform embedded within. LiveOps even has the ability to update the site and social media accounts on behalf of the partner."

RUNNER UP: Calabrio

Another TMC Channel Awards applicant in the contact center space is Calabrio.

In 2007, when Calabrio was established as an independent company, its partner program was launched to enable the company to reach new markets, grow revenue, and gain market share faster.

"Our partners offer options sure to fit the varied requirements of any contact center, small and large alike," according to the Calabrio application. "Armed with a deep understanding of our products, our

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channel partners provide our customers with the experience and expertise they've come to expect. Our Partner Program continues to be a mutually beneficial and important sales avenue for Calabrio and our valued partners. In 2013 alone, Calabrio signed 30 new partners, and we've added 11 new partners already in 2014."

The typical Calabrio Channel Partner is a certified Cisco and/or Avaya partner as well. These partners are large companies well known in the contact center space and focused on using technology to transform the way customers do business.

"Calabrio partners make it easy for companies to deliver faster, smarter, and more agile customer interactions," the company says. "Our partners have built practices around contact centers that include both hardware and software. The typical Calabrio partner has the pulse of the region and the industries they serve. Like Calabrio, our partners are not afraid to push the envelope and always go the extra mile on behalf of customers."

FINALIST: **CSG International**

Unified Communications

WINNER: PanTerra Networks

As INTERNET TELEPHONY reported in its May issue, PanTerra Networks is probably the most innovative unified communications and file sharing cloud-based service provider you've never heard of – until now.

PanTerra offers WorldSmart, a comprehensive suite of unified cloud services targeting mid-market enterprises. It delivers a highly secure unified service from the cloud with a wide range of features including SmartBox-Unified File Sharing Virtual Hosted PBX, Digital Fax Mobility Apps and Routing HD Multimedia Conferencing Video, Audio, Web Meeting Unified Messaging, Presence Call Queuing, Recording and Detailed Statistics Simplified Single Bill Service Multi-site Technology Unification Advanced Single, and Multiple Administrator Capabilities. All services are integrated into a single browser-based client as well as iOS and Android mobile clients and an administrative interface.

The company's channel program for WorldSmart, the original sales channel for all PanTerra services, remains a majority of its business.

"We felt unified cloud services were the future of communications, and partners, through their relationships and expertise, were the obvious avenue to reach customers," according to PanTerra's application. "Often our services are added to a partner's existing portfolio, easily allowing them to offer more solutions in the form of cloud communications either as replacement, or [to] augment

existing product offerings. Now with SmartBox, PanTerra's file, sync, and share service, partners have an offering with collaboration built in. SmartBox is provided as a complimentary feature-rich free trial offering, that has online ordering and tracking back to partners for future hands-off upgrade revenue potential."

Partners can leverage viral marketing by offering the free Smart-Box version, PanTerra explains, and are automatically credited when customers upgrade their service.

Radizeski of RAD-INFO Inc. says this strategy is ingenious and unique in the market.

PanTerra says its partner program also has a lucrative residual payment for all services, bounties for hardware and installation, and quarterly accelerators for performance objectives that multiply residuals into the mid 50 percent. It offers every partner a FastStart program with training and incentives, including bonuses on sales in the first 120 days. It enables partners a complete rebranding of color, name, and packaging and pricing of all PanTerra services. And all PanTerra wholesalers sell, support, and bill their customers, while the company remains their technology and service provider, and tier 3 support.

RUNNER UP: **Voxox**

Voxox is another company in the UC space whose channel program is worthy of note.

The company delivers mobile and desktop applications that integrate voice, video, messaging, fax, media sharing, and more. Its suite of business phone solutions include hosted IP PBX, SIP trunking, an array of wholesale services such as high volume SMS, and a new virtual PBX service called Cloud Phone.

"Cloud Phone is a solution that merges the best of the cloud with mobile devices, allowing a small business to have workers found by their customers via the device they rely on most," as mentioned by TMC CEO President Rich Tehrani in this magazine's previous issue. "Moreover, the solution is a great way to connect branch offices with CRM systems, as there is no remote software or hardware needed to make this a viable solution."

Part of what separates the Voxox channel program from the pack is that 50 percent of the provisioning fees it collects are paid to partners, and the fact that it doesn't require an annual revenue commitment minimum for agent and dealer partners.

Voxox provides 20 percent commissions on core products for all partner sales and up to 25 percent commissions on core products for qualified master agents.

The company, which recently hired a national channel sales manager to lead the charge, also gives channel partners access to a dedicated channel manager, support team, and an instant quote and contract creation tool. And the Voxox channel portal has downloadable marketing materials, sharable social media content, webinars, and information on current promotions.

HONORABLE MENTIONS: Phone.com, Telesphere

FINALISTS: Digium Inc., Estech Systems Inc., Fonality, Nextiva, RingCentral

People's Choice

WINNER: Toshiba America Information Systems, Telecom Div.

Loyalty is a word commonly associated with the channel program at Toshiba America Information Systems, Telecom Div. Given that this part of Toshiba sells exclusively through partners, that only makes sense.

"It's hard to find a more loyal channel program," says Radizeski of RAD-INFO Inc.

The company established its dealer channel back in 1978. Today it serves 350 partners with more than 700 locations.

"Toshiba is one of the only big players to not compete with its channel," according to the company's application. "Toshiba's migration philosophy of No Customer Gets Left Behind allows dealers to migrate existing Toshiba customers to newer platforms as they become available."

Toshiba's platforms, VIPedge, IPedge, and Strata CIX, can be mixed and matched to meet customer needs. The company's VIPedge cloud-based business telephone offering is available to channel partners and their customers as a standalone or add-on solution for customers' premises-based systems.

"For on-premises systems, Toshiba dealers buy the systems and mark them up accordingly to include installation, service, maintenance, etc.," the company explains. "For Toshiba's National Accounts, the originating and installing dealers receive

commission on hardware sales and are also paid for labor costs. For Toshiba's VIPedge cloud-based business telephone solution, Toshiba subsidizes the cost of the hardware and dealers get paid to do the installation. Dealers are also paid commission on their customers' monthly recurring revenue."

Toshiba's National Accounts Program uses regional dealers to install and maintain the systems, and Toshiba handles the coordination of installations and direct customer billing for all its dealers.

RUNNER UP: Star2Star

Another company that is recognized for its success in bonding with the channel is Star2Star, which bills itself as a scalable cloud communications solution provider. The company unifies customers' voice, video, fax, instant messaging, and presence management capabilities.

Having created its channel program at the company's inception in 2006, Star2Star is another organization that does not sell direct.

"Their channel loves them," says Radizeski of RAD-INFO Inc., "probably because it's easy to sell."

Star2Star says it is determined to provide its partners with any and all support they require to ensure that every deal is closed. To make that happen, the company offers inside sales support from its headquarters in Sarasota, Fla., and via representatives located throughout the United States. The company says it also "offers extensive support throughout the life of the contract, from pre-sales support to ongoing maintenance.

"Star2Star is very flexible in the support we offer, allowing every partner to pick and choose what support they want and need," the company says. "An example of this flexibility is our implementation services. Star2Star maintains a network of qualified installers who can install a StarSystem anywhere in North America for partners who prefer not to do installs themselves but does not require any partner to use them, which is ideal for those partners who earn substantial income from completing installs themselves."

The company offers various remuneration options for partners, and is willing to customize partnership payment structures. Star2Star also continues to enhance the program, having recently launched a website giving master agents and resellers access to their commission statements for each deal.

Other Categories

FINALISTS: Calix, MegaPath Corp.

By Peter Radizeski



Sales Meetings Can be a Waste of Time

Selling is primarily time management. The more efficient you are, the more sales you can make. The corollary is that we are always interrupting prospects and asking for their time. We need to respect their time and attention.

Recently, two separate companies wanted to have meetings with me. They wanted an hour or more of my time. I offered 30 minutes, but they said it wouldn't be enough time. They clearly didn't respect my time nor their own.

Why do I say that? What if I wasn't the decision maker or influencer? What if I didn't need or want their product? They did very little pre-qualification.

As sales professionals, there is a sales process. There are no short cuts in the sales process. After prospecting, you have to do qualification or what I call disqualification. I don't want to spend time on someone with no need, no money, no hurry, no desire, no trust. It comes back to time management. I want to spend my time with people who need my services, want my services, can afford my services, and will buy from me soon.

Disqualification is checking to make sure there is desire, budget, and need. Certainly, you should think that everyone should buy your services, but you should spend time with the best prospects (and the suspects who will become customers soonest). Maybe it is a priority thing. All too often we do the urgent and the busy,

but not the important or the right activity that will help us reach our goals.

Back to the sales process: That first meeting has a goal. Don't jump past it. For example, if your objective is to get an appointment, don't rush past that and try to make the sale – just appoint. These guys had gone further down the path than I, the prospect, was. I wasn't going to invest an hour of my time; it's just too valuable. They hadn't established any trust, rapport, or anything. Remember: There is a sales process, no short cuts. Selling is about time management, which means prioritize. Now go sell something! **IT**

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

Channel Briefs

Interactive Intelligence Goes West

Customer experience company Interactive Intelligence Group Inc. has signed West Interactive (a subsidiary of West Corp.) as an Elite Partner. The partnership agreement enables West to provide sales, service, and support nationwide for the entire suite of Interactive Intelligence communications solutions. The Interactive Intelligence solutions, which can be deployed in the cloud or on premises, offer contact center, unified communications, and business process automation functionality to organizations of all sizes. West delivers a range of services, from contact center infrastructure and network management, to application development, multichannel routing, IVR/speech automation, and mobility.

Vertical, Fulton Merge

Business communications software and solutions provider Vertical Communications has merged with Fulton Communications, a national systems integrator of voice, data and video communications technologies and one of the Inc. 5000 fastest growing companies in North America. The companies said the merger is in response to customers' desire to have a vendor-direct relationship. The combined company will offer business customers vendor-direct communications technology solutions, including cloud and premises-based enterprise telephony, unified communications, and vertical market voice applications, as well as a local presence for direct sales, support, and professional services in major markets across the United States. The new company will operate as Vertical Communications, with Fulton continuing to operate under its existing brand through an integration period. Vertical will continue to sell and support Fulton's existing multi-vendor product portfolio, while serving customers through direct, exclusive, and multi-partner channel sales and service strategies.

England Joins Telesphere

Amanda England has joined Telesphere, a provider of hosted VoIP and unified cloud communications services for businesses. She occupies the post of senior channel executive, and is based in Dallas. Prior to joining Telesphere, England was a national account manager and general sales manager with service providers UNSI and Airband.

Relayware Powers GENBAND Partner Portal

GENBAND recently announced enhancements to its Partner Advantage Program, including the launch of a new partner portal through which the company's channel partners can access discounts, marketing materials, sales tools, and training resources. Relayware is the company that powers the portal. Jim Somers, chief marketing officer at Relayware, explains that the company sells software that businesses like GENBAND use to do indirect channel management and enable collaboration that allows for increased partner productivity, which can generate more sales, better leverage marketing efforts to drive partner engagement, and show the C-suite the value of the channel. That's important, said Somers, who believes "there's a real blind spot in the partner process" at many companies. The Relayware SaaS-based solution enables companies to manage joint sales planning, business planning, lead management, deal registration, renewals, onboarding, recruitment, and incentive initiatives. It also supports collaboration with and among the channel via multiple modes, including e-mail, IM, and social networking. And businesses can use the platform to build portals and landing pages for various campaigns and extranets. The company even offers native mobile apps.

Connect First Offers 15 Percent Commission

Contact center platform resellers can now earn a 15 percent commission for two full years through the new Connect First Referral Partner program. Partners also have the flexibility to determine their own pricing when reselling the cloud-based contact center platform to end customers.

CounterPath, MegaPath Join Forces

Unified communications solutions provider CounterPath Corp. has aligned with managed and cloud services provider MegaPath, which will offer CounterPath Bria desktop, tablet and mobile UC solutions through its direct sales channel and partner channel.

Alcatel-Lucent Addresses the Personal Cloud

Ensuring Positive Business Outcomes in the Services-Centric World



Joseph Raccuglia ▲

Office walls and set hours traditionally delineated what most of us thought of as work. Those constructs are giving way to more flexible and far-flung work environments. Employees, once chained to their desktop phones and computers, today freely move around the office and the world, and the availability of broadband networks and mobile devices means they can do their jobs anytime and just about anywhere, and from any device.

Indeed, work is no longer a place you go, but what you do.

The Personal Cloud

Alcatel-Lucent refers to this new scenario as the personal cloud.

The personal cloud describes a mobile computing and communications environment in which individuals can seamlessly merge the personal and professional use of their various devices, leverage popular applications and services like Dropbox and Twitter for business and pleasure, and otherwise control how they communicate.

"While the old PC-centric environment usually involved a corporate-defined endpoint and set of services, personal cloud ushers in the services-centric model. In this new heterogeneous environment, users can leverage the devices of their choice to gain secure access to the network, and to voice, video and data capabilities delivered via the corporate infrastructure," explains Joseph Raccuglia, senior director of the product and solution marketing group for the Networks team at Alcatel-Lucent Enterprise.

The personal cloud describes a mobile computing and communications environment in which individuals can seamlessly merge the personal and professional use of their various devices, leverage popular applications and services, and otherwise control how they communicate.

"With the personal cloud comes the concept of having a user-centric approach of delivering services from the corporation to the employee," Raccuglia says. He adds, "that involves providing access both to corporate resources as well as to personal applications and services like popular social media platforms that workers can employ to forward business strategy."

"This new model is important both because it empowers users to select the devices and services with which they are most comfortable, and because, in the process, it drives productivity for users and their employers. Research has shown that employees are 5 to 30 percent more productive using the devices they prefer," notes Raccuglia. And he points out that individual employees may use different devices based on their location, the task at hand or other factors. The ability for employees to use the devices of their choice – like, for instance, a personal computer instead of a corporate-issued one – also means they can more easily work from home or other remote locations whenever it makes sense to do so.

IT Challenges

This new flexibility and productivity does not come without challenges, however. Those challenges come in the form of security, bandwidth, services, and network transformation.

Security is clearly a major and multifaceted challenge.

"Today most corporations rely on a hodge-podge of access security measures, for example," says Raccuglia. "Gaining access to the corporate wireless network may involve the end user navigating through multiple security screens," he explains, "whereas anybody could walk in off the street and physically plug into a port to gain access to the corporate LAN."

"A more consistent and secure approach is to apply consistent security measures across the network, regardless of

whether the connection is made via wireless or wireline," he says, and Alcatel-Lucent Enterprise offers solutions to do just that.

Quality of service is another important factor that enterprises need to address in the new services-centric world.

The first step in this effort involves understanding what applications are flowing on the network. Alcatel-Lucent Enterprise provides corporations with a set of network analytics tools that use deep packet inspection to see what applications are in use at any given time. That way, enterprises can more easily troubleshoot problems because they have more visibility into what is happening on the network, and they can create policies around how to handle traffic from various applications and users in an effort to make the best use of corporate network resources.

For example, a business may elect to block certain applications for which there is not a business benefit. Enterprises may also set policy to ensure that a videoconference from a corporate boardroom gets bandwidth priority over, say, a desktop-based videoconference or a video stream of the recent World Cup soccer matches.

Yet another IT challenge in the new environment in which employees are using a wide array of endpoints to connect to the corporate network involves services. By services, we're referring to the ability to deliver corporate capabilities to workers via the onboarding of their devices on the enterprise network.

Part of the challenge here is there are so many devices and so many different types of them. As a result, onboarding each device manually is no longer feasible.

To help enterprises scale the onboarding process, Alcatel-Lucent Enterprise offers solutions to enable endpoints – including laptops, smartphones and tablets from a variety of vendors and running different operating systems – to register themselves on the network.

"Automation means BYOD can happen with much less IT overhead than ever before," Raccuglia says.

In fact, Alcatel-Lucent Enterprise is working to automate its solutions across the board to help enterprises embrace network transformation in an effort to lower costs and become more agile. The latest technology allows network operators to both automate and streamline their network architectures to reduce capital and operational expenditures via savings in personnel, power and real estate.

Alcatel-Lucent Enterprise provides many of these new solutions as a service layered on top of its equipment so enterprises can protect their existing network investments, and move forward at their own pace based on their specific needs. "For example,"

says Raccuglia, "with Alcatel-Lucent Enterprise, businesses have the ability to upgrade their wireless LANs today and address their wireline LANs at a future date."

Network Infrastructure

A leader in the service provider networking space in which it provides infrastructure and applications for many of the world's largest broadband operators, Alcatel-Lucent entered into the enterprise networking and communications solutions space more than 15 years ago. The company got its start in enterprise networking with the \$1.7 billion acquisition of switching company Xylan in 1999. That offering has evolved into what is now Alcatel-Lucent Enterprise's OmniSwitch product line.

Alcatel-Lucent Enterprise today also offers end-to-end wireless LAN, wireline infrastructure from access to core, data center switching technology, and branch office router gear. These infrastructure elements are integrated with a comprehensive BYOD services platform and managed using a unified management platform.

The company also has solutions designed for outdoor use. That includes hardened wireless switches for deployment in parking lots or near railway systems, as just two examples. Alcatel-Lucent Enterprise is also providing routers to enable AT&T's Connected Bus application. Connected Bus leverages 4G LTE to deliver Wi-Fi access to K-12 student bus riders, allows their schools to use the system to deliver real-time streaming video and broadcast announcements, and can do remote monitoring of driver and student behavior to limit the potential for accidents and bullying.

Applications

"The Alcatel-Lucent Enterprise solutions extend far beyond infrastructure and network element functionality, however," Raccuglia emphasizes. The company is also keenly focused on providing enterprises with application-related solutions that deliver the best possible end user experiences and business outcomes.

A key facet of that effort is Alcatel-Lucent Enterprise's Application Fluent Network strategy.

Application fluency means the ability to both understand what applications are resident on the network at any time and the means to map those applications to enterprise network policies. "For example, it's not enough to know a video call is taking place," says Raccuglia, "the network also needs to know there's a difference between a Skype call by a middle manager and a videoconference from the corporate boardroom so it can prioritize network assets appropriately."

OpenTouch, a unified communications and collaboration platform that enables users to move between wireline and wireless networks seamlessly, is another key component of Alcatel-Lucent Enterprise's stable of enterprise application solutions.

Building on the company's proven OmniPCX Enterprise Communications Server IP telephony solution, OpenTouch is a multidevice, multimedia and multiparty solution. It brings the call to whatever devices are available to the user at the time, and the user decides which one to answer. It also allows for seamless transfers between those devices. OpenTouch provides presence information to put context around a contact's availability. It delivers social knowledge and applications context, enabling users to tap into social networks to find contacts and link to outside sources. And it has more than 500 features and can support as many as 1,500 users.

Raccuglia adds that with its above-mentioned offerings, Alcatel-Lucent Enterprise can provide a full, end-to-end unified communications and collaboration solution for enterprises – including both the applications and all the related network infrastructure and controls. The company also offers professional services and support related to all this to ensure ease of deployment and management.

More on Security

Security is such an important aspect of networking that it warrants circling back on this subject to explore Alcatel-Lucent Enterprise's end-to-end security strategy.

"The company's offerings under the BYOD umbrella," Raccuglia explains, "include tools to help enterprise network operators understand users, devices and applications on the network so they can enforce network policies. A company might, for instance, elect to create and enforce time-of-day policies so shift workers have access to the network or certain applications only during their shift hours." Alcatel-Lucent Enterprise can also enable companies to leverage geofencing for security purposes.

Alcatel-Lucent Enterprise Solutions at Work

Moravian College is among the organizations benefitting today from Alcatel-Lucent Enterprise solutions.

The private liberal arts school in Bethlehem, Penn., decided to replace its aging wired and wireless networks that provided a low-quality experience and limited coverage, with an integrated infrastructure that would support a new initiative to equip all students with Apple iPad and MacBook Pro devices.

"We needed a network that could effectively handle the academic load that would be placed on it and easily support the social and entertainment load the students would generate," explains Scott Hughes, CIO of Moravian College. "We looked at other suppliers, but Alcatel-Lucent Enterprise was able to provide a solution that aligned perfectly with our vision and objectives. And it was the only supplier that was able to provide the dense coverage and capacity needed to create and maintain the high-quality experience students expect from a wireless network."

Alcatel-Lucent Enterprise, and its partner Advance 2000, worked with Hughes and his team to design the integrated network, which today provides students and faculty with secure access anywhere on campus, and was created to allow for future expansion.

The network consists of an Alcatel-Lucent OmniSwitch 6900 Core, OmniSwitch 6450 Gigabit Stackable LAN Switches and OmniSwitch 6850 Stable LAN Switches; campus-wide wireless network access provided by the Alcatel-Lucent OmniAccess 110 series and OmniAccess 220 series access points; Alcatel-Lucent OmniAccess 4550 Wireless LAN Controller; wireless management via the Alcatel-Lucent OmniVista 3600 Air Manager; and the ClearPass Policy Management System to allow the IT staff to do network management, govern access and maintain security of all traffic using a single set of usage policies.

Embrace the Cloud

"Every organization has its own unique application and network requirements, of course. Whatever the individual needs or existing infrastructure an organization might have, however, Alcatel-Lucent Enterprise can help it put together a scalable solution that delivers the best possible experience for the end user and the best possible business outcomes for the organization," Raccuglia says.

"Alcatel-Lucent Enterprise's approach is we allow our customers to leverage their existing infrastructure and add new technology only as needed to deliver unified access services," he says.

Welcome to the age of the personal cloud. **IT**

Pillars of the Alcatel-Lucent Application Fluent Network Strategy

- a resilient architecture which is streamlined, lower cost, lower latency, secure, and can do policy enforcement
- better controls, which allow the network to understand what devices, applications and users are on the network and enforce policies related to them
- simplified operations, which uses automation and policy to eliminate the complexities of network management and allow for networks that address the best end user and business outcomes

Bright Ideas for Energy Savings

Companies are needlessly wasting a lot of money and space in their central offices and data centers due to energy-inefficient architectures and keeping equipment they really don't need.

That's the word from Jakob Carnemark, CEO of Aligned Energy.

Most businesses today spend around \$1 per kiloWatt hour powering and cooling their equipment, Carnemark said. But with more efficient data center architectures, he said, they could bring it down to the 25 to 30 cents per kiloWatt hour range.

Given growing uptake in cloud services, which create greater variability in energy usage, now is a great time for network operators to take a look at how they can make their facilities more cost- and energy-efficient, said Carnemark. That's because

traditional chiller plants don't like variable loads, and Aligned Energy has developed a solution that is stable and efficient with variable loads.

Aligned Energy, which was established in 2010, has three divisions.

Its Energy Metrics Division provides software to enable businesses to look at their applications and correlate the energy required to support them. It provides all that information via a single pane of glass. Royal Bank of Canada is among the customers of Energy Metrics.

Aligned Energy's Inertech division is focused on new electrical and mechanical technologies. In 2010 the company patented Conductive Cooling, which lowers data center energy use for cooling by 90 percent and for water by 85 percent. Several large telcos, banks, and other organizations are now using this solution, which consists of a heat sync edge device at the rack, and a thermal hub that replaces a traditional thermal plant/chiller. Carnemark said users can deploy the chiller in a modular way as needed, adjusting for density rather than overbuilding or guessing about what they'll need.

Karbon is the name of Aligned Energy's professional services division. It does data center design to drive improvement based on feedback loop information Aligned Energy collects with its Energy Metric platform. That way, the company can design systems, see how they perform, and improve upon them.

Aligned Energy is working with GENBAND on a central office transformation initiative, which will allow telcos to install power and cooling so they end up with smaller footprints when they move from the PSTN to IP, Carnemark explained. Telcos as a result will realize significant savings both on energy use and on expensive real estate, he said. ■■



NTT Takes NFV/SDN Services Global

NTT Communications Group earlier this year announced that its Arcstar Universal One services, about which INTERNET TELEPHONY has reported previously, are now available in more than 190 countries. The global telco is breaking new ground with these services, which leverage NFV and SDN technologies to enable enterprise CIOs to use a portal to configure and pay for new network services on the fly – allowing these businesses to be more agile and potentially save big money.

“We are the first providers to really make these services available,” Takashi Ooi, vice president of enterprise network services of the network services division at NTT Communications Corp., said during a press conference from Japan.

Most other service providers are testing SDN, but NTT Communications is actually providing NFV and SDN services commercially, he said. And he added that NTT is many years ahead of other service providers on this front.

Presenting alongside Ooi was Vab Goel, founder and chairman of Virtela, the managed and cloud-based network services company that NTT Communications Corp. acquired in January. Goel said NTT Communications is using an in-house SDN/NFV solution, which includes the controller, to power Universal One. (Virtela was a niche VPN provider in the U.S., was investing in OSS/BSS and portal technology, and had talked about its NFV/SDN roadmap before being acquired.)

Goel said that with these new NTT Communications services, CIOs and other IT types will be able to activate and deacti-

vate services as needed, have access to those services within a few minutes of inputting the portal request, and pay for those services on a per-use basis rather than engaging with telcos on three- to five-year contract commitments.

“CIOs are facing the biggest challenge of their lifetime,” said Goel, who noted that businesses need to be able to be agile, to reach financial and product launch goals, and are being pushed by more tech-savvy employees to deliver higher level networking experiences. “I think the CIOs need to transform. They need to adopt a disruptive technology. ... It can’t be a back-end strategy.”

NTT Communications provided a firewall use case to demonstrate the benefits of Universal One.

Traditionally an enterprise would configure its network so branch offices would connect to the public Internet by first traversing the private network to the headquarters site. But that can degrade the end user experience by adding latency. It also adds complexity and cost at the branch office

sites, which as a result need local Internet access, specialized devices to make those connections, and dedicated IT staff. And it creates inconsistency in security policy, as local solutions are implemented individually, according to NTT Communications.

With Universal One, the CIO or IT staff at headquarters just uses the NTT customer portal to configure the firewall function, and then the branch office(s) Internet traffic can connect directly and securely to the Internet, allowing for an improved end user experience, savings due to the elimination of the need for investment and management in new branch appliances, and consistent security governance across the entire enterprise. NTT Communications said this could lead to a 50 percent reduction in costs, which includes both capital and operational savings.

During a press conference, NTT Communications aired a video in which CIO Senior Vice President Takanori Yukishige of All Nippon Airways Co. Ltd. read a prepared statement about how his company expects to realize \$4 million in annual savings from its ICT reform effort, which includes the adoption of Universal One.

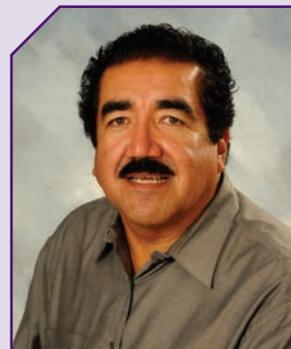
In addition to the benefits that NFV and SDN deliver to enterprises, Goel added that they also benefit service providers like NTT Communications, which have traditionally spent years on new service launches (now they can do them within months) and up to \$100 million in investments (now they can bankroll them with a few hundred thousand dollars). ■

Ovum’s Sapien Comments on NTT Com’s NFV, SDN News

By Paula Bernier

NTT Communications Group recently announced the global availability of NFV- and SDN-based services, offered under the name of Arcstar Universal One. During a midnight press conference from Japan, company management said the Virtela-powered services – which enable enterprise CIOs to use a portal to configure and pay for new network services on the fly, allowing these businesses to be more agile and potentially save big money – put NTT Communications years ahead of its competitors.

Ovum’s Mike Sapien commented to INTERNET TELEPHONY about his thoughts on that claim, on the NTT Communications news overall, and on the NFV and SDN space in general.



Ovum’s Mike Sapien ►

Network Infrastructure

On NTT Communications' assertion they are far ahead with NFV and SDN:

"I think they are dreaming if they really think they are 'many years ahead' of other service providers. Most service providers are already getting ready to provide IP VPN services using SDN/NFV, and it is only a matter of months and not years. It makes me think of Clearwire/Sprint announcing they had a two-year lead on 4G services in the U.S. What happened there?"

On what other service providers are doing in this vein:

"Many smaller providers are offering services now (Pacnet, Masergy) similar to these service, but they are not global. But the global players (BT, AT&T, Verizon, DT, and Telefonica) are not that far behind with a VPN service like this."

On what's powering the NTT Communications service:

"[It's] interesting that NTT Comms is

keeping a lid on the vendors involved [saying that it's using an] in-house SDN/NFV controller. I find it hard to believe that they are not using some vendors who they just don't want to name. I suspect NEC and Cisco are in the mix somewhere."

On the customer featured in the NTT Communications announcement of the Arcstar Universal One announcement recently:

Network Infrastructure Briefs

Telefonica Engages Cyan, Red Hat for Lab Work

Cyan, Red Hat, and Telefonica have joined forces to create a network functions virtualization architecture allowing for deterministic placement of virtualized network functions. The architecture will leverage Cyan's Blue Planet SDN platform, and Red Hat's Enterprise Linux OpenStack Platform. Blue Planet consists of an open SDN platform, an ecosystem of SDN apps, and a set of element adapter apps facilitating control over a wide range of third-party network devices – enabling service providers to virtualize their networks, flatten legacy cost structures, make more efficient use of network assets, and accelerate service delivery. "This is an engineering-level lab engagement where we are trying to solve a fundamental technology challenge required to make NFV successful for carriers," Nirav Modi, director of software innovations at Cyan, explained to INTERNET TELEPHONY. "Telefonica has been doing a lot of their own internal trials and R&D around NFV and has found that placement of VNFs greatly affects their performance. We are working in close collaboration with Telefonica and Red Hat toward solving this problem – that ensures VNFs perform to their peak, and consistently from one instance to another."

HP Focuses on NFV

HP is expanding its efforts around network functions virtualization, having recently moved Bethany Mayer to become the senior vice president and general manager of HP's new NFV business unit. HP, which is embracing OpenStack and leveraging the resources of its existing Cloud Business, already has virtualized its Home Location Register and Home Subscriber Service, and also offers a virtual service router. It's federated its SDN controller with that of NEC. And it has established an OpenNFV program, through which HP is offering its NFV Reference Architecture and its lab resources to NFV partners. The company is also claiming its stake in the SDN realm. Infonetics Research analyst Cliff Grossner, who talked to INTERNET TELEPHONY late last year, said HP is seen as the No. 2 player in the SDN vendor space, according to respondents to a recent study by the firm. About 27 percent of respondents polled picked HP as a top SDN vendor, with Cisco in the lead and IBM close behind.

ALU's New OSS Addresses NFV, SDN

Alcatel-Lucent plans to launch later this year a new operations support system portfolio as part of its larger Motive line. The Motive Dynamic Operations portfolio will allow network operators to identify and track all network resources; fulfill orders and assure services; and do automated recovery to predictive management. "After launching both an NFV platform in CloudBand, an SDN solution through Nuage Networks and a comprehensive virtualized packet core, IMS and wireless network functions, Alcatel-Lucent is now bringing innovation to the OSS space with the launch of Motive Dynamic Operation, which delivers the OSS agility required for operating networks in the cloud," said Andrew McDonald, Alcatel-Lucent, President, IP Platform Business Division. In other recent news from Alcatel-Lucent, the company announced that 19 new companies have joined its CloudBand Ecosystem Program.

Netsocket Introduces vApps

Netsocket recently launched a suite of virtualized applications, as well as automated application delivery, designed to help managed service providers grow revenue and deliver profitable new services. The Virtual Edge from Netsocket virtualizes such networking functions as firewall, routing, switching, and tunneling. It also can be used to deliver qualified third-party applications. Third-party applications, or vApps as Netsocket refers to them, available now include Cacti's open source performance visualization solution, FreePBX's open source IP PBX solution, Fortinet's FortiGate security solution, OpenVPN's open source VPN aggregator and client, Pandora's open source remote monitoring and management solution, QFlex's enterprise SBC from GENBAND, Snorby's open source firewall/IDS/IPS, Ubiquiti Networks' Unifi Wi-Fi controller, Windows Server 2012 Essentials software infrastructure from Microsoft, and the debian Linux VM for MSP-installed apps and tools. Virtual Edge is a cloud-based solution aimed at SMB and branch offices that also enables automated service creation, delivery, management, and orchestration for virtualized applications.

"Having one Japanese airline customer was good, but it was [a] totally scripted video pitch. It would be more interesting if there were more Virtela customers as the 'trophy' customers."

On what resonated with him regarding the NTT Communications solution:

"I did like the 'asset-light' theme for the branch office, and [it] does align with my thoughts on [the] future view of [the] network and value-added services that come with SDN/NFV."

On what's missing:

"They seem to ignore the physical layer issues of local network access and the provisioning time and SLAs ... so the service can only be as good as their local network provider management."

On NTT Communications saying it's a global service provider:

"I am having a hard time seeing NTT Comms as a global player in networking

services. They are obviously very strong in Japan, and Virtela was a niche VPN provider here in [the] U.S. with a good base of U.S. customers with international requirements (like Masergy). I would not see NTT Comms as a global player, but I know they think they are. Also, Virtela was a very small player here, but they were investing in OSS/BSS technology.... [Virtela] is more a niche VPN player that has a potential global carrier funding it now." **IT**

Qosmos Joins TMF Catalyst Demo

Qosmos at TM Forum Live in June was part of a CloudNFV demonstration of dynamic, data-driven management and operations. Qosmos provided virtual deep packet inspection technology, which was deployed as a service infrastructure component by EnterpriseWeb, a company that sells an intelligent operations platform of the same name for managing, modeling, and running composite applications.

Active Broadband Helps SDN Converts Follow the ARC

A company called Active Broadband Networks that describes itself as a company that supplies software-defined networking solutions for controlling broadband service delivery has made available the Active Resource Controller. ARC is an SDN controller for deployment at the broadband service edge. It leverages SDN protocols for dynamic control of network function virtualization infrastructure; IP flow telemetry data for network, service, subscriber and application visibility; and big data technology to enable service personalization. "Network operators are seeking simpler and less costly ways to gain visibility into service and application usage at the broadband service edge," said Adam Dunstan, CEO of Active Broadband. "The Active Resource Controller is a software-based platform that leverages high-performance, in-line mediation, big data, and IP flow telemetry to enable operators to transform subscriber intelligence into real-time service control without having to employ deep packet inspection."

KEMP Uncages Condor NFV Solution

KEMP Technologies recently unveiled a multitenancy virtualized platform suitable for enterprises and service providers to do NFV service chaining of such capabilities services as load balancing, security, and WAN optimization. The solution, called KEMP Condor with HyperFlex Architecture, can run on bare metal platforms including Cisco UCS B and C series, HP

ProLiant DL, Oracle x86 and Dell PowerEdge R-Series servers. The software also allows for performance and versioning control on a per-instance basis.

Cellwize Promotes Cellco SON/NFV Solutions

A company named Cellwize that caters to mobile network operators says its SON-based solution is now NFV-ready. SON, which stands for self-optimizing network technology, allows different types of radios – whether they are from different vendors, rely on different types of technology, or whatever – to work together. NFV, meanwhile, is shorthand for network functions virtualization, which is about taking network resources that currently exist as specialized appliances and transforming them into software-only modules that can reside on standard industry hardware. Daniel Dribinski, co-founder and CTO of Cellwize, says SON solutions can help mobile operators develop value-added services. The company's elastic-SON solution can be automated with other network functions in the cloud, allowing mobile operators to do pay-as-you-grow rollouts so they can tailor optimization and performance to fit requirements – adding virtual machines with just a few clicks of the management interface.

SDN Continues to Slow Investments

Infonetics Research recently reconfirmed its assertion that the move to software-defined networking is indeed slowing investment in carrier router and switch spending, and provided evidence of that trend. According to the firm's Michael Howard, the first quarter of 2014 saw global service provider router and switch revenue increase a paltry 2 percent from the same quarter in 2013, and decrease 13 percent from the fourth quarter of last year. On the whole, the worldwide carrier router and switch market – which includes IP edge and core routers, and carrier Ethernet switches – was worth \$3.2 billion in the first quarter of this year. Revenue in this arena was down by double digit sequentially in this year's first quarter. **IT**

VoLTE Gets Real

But the Number of Devices Supporting It Is Really Limited

After years of talk about voice over LTE, cellular service providers in recent months have finally begun to roll out LTE services.

“VoLTE and HD voice will start to grow and play a larger and more important role in the wireless industry going forward,” says industry analyst Jeff Kagan. “This lets users place voice calls over the data portion of the wireless network.”

Not only does VoLTE enable cellular carriers to deliver HD voice, it also enables them to move away from their legacy networks, notes Doug Mohny, editor in chief of HD Voice News, and a TMC contributor.

“VoLTE is the last necessary piece before carriers start shutting down the legacy mess of 2G and 3G networks and refarming spectrum,” says Mohny. “Guaranteed quality of service is the edge VoLTE offers over OTT best effort solutions, along with the fallback ubiquitous voice solution when people disagree on what OTT clients they want to use.”

On May 15, AT&T introduced what it calls VoLTE-based High Definition Voice service to Samsung Galaxy S 4 mini users in select areas of Illinois, Indiana, Minnesota, and Wisconsin, adding more markets are to come. Hong Kong Telecom the same day announced its launch of VoLTE, which it is supporting via Huawei core infrastructure, and delivering to Samsung Note 3 users.

About a month later, T-Mobile revealed it had VoLTE live in 15 markets reaching more than 107 million people, and that it supports VoLTE on four devices – the most recently added being the Samsung Galaxy S 5. In a June 18 blog, T-Mobile CTO Neville Ray wrote that the company was the first to roll out VoLTE and that it expects to make VoLTE available nationwide by the end of the year. Ray also boasted about the HD voice capabilities T-Mobile can deliver via VoLTE.

“Because our network has been designed for data, we’re now able to nearly double the data that supports voice calls for superior, crystal-clear HD voice,” Ray wrote.

“In fact, we offer the highest fidelity HD voice possible – 23.85kbps voice codec rate. VoLTE also offers faster call set-up times than a non-VoLTE call, and customers are able to access our LTE network during a voice call.”

Bouygues Telecom in France and Verizon in the U.S. also plan to roll out VoLTE and related HD voice services this year. In announcing its selection of Ericsson as its VoLTE vendor, Bouygues Telecom said its LTE network will deliver the first VoLTE calls later this year and will go commercial in 2015. Verizon, meanwhile, said VoLTE is slated to roll out on its nationwide network later this year. Verizon didn’t specify what handsets on its network would support VoLTE functionality.

But a May 20 Verizon blog said this: “... more and more customers across the country will be able to use VoLTE as select handsets will be VoLTE-enabled through a software update leading up to the roll out of the service, with new devices VoLTE-enabled at the time of purchase later this year. For a customer to make or receive a VoLTE call, both parties must have VoLTE-enabled devices and be in an area where VoLTE is available.

“Verizon’s VoLTE will also offer video calling options, including making and receiving video calls directly from contact lists. As part of the VoLTE video calling experience, customers have the ability to change their calls instantly from voice-only to voice and video. The rollout also sets the stage for future enhancements through Rich Communications Services, which enable things like including large file transfer, more robust group messaging, and more location sharing.”

These rollouts and announcements come after years of debate on how best to support voice on LTE networks, and work on VoLTE by the major cellular carriers and their suppliers.



▲ The Samsung Galaxy S 4 mini

The long time to implement VoLTE is due to its huge technical complexity, the need for excellent LTE radio coverage and enough backhaul, the need for devices supporting VoLTE, and the lack of a clear business model around this technology, among other issues, says Dean Bubley, director and founder of London-based research and consulting firm Disruptive Analysis.

“[VoLTE] is complex and expensive, and does not obviously generate any new revenues,” Bubley says. “As such, the business case is highly questionable – and with the additional network complexity, testing, etc., may actually increase risks significantly.” IT

Amazon Intros Smartphone

There seems to be no aspect of communications of which Amazon doesn't want to play. The bookseller come online retail giant come cloud services provider in June unveiled a smartphone called Fire. At release July 25, the Fire was available exclusively on the AT&T 4G LTE network and could be obtained through AT&T's NEXT program with no money down, and no activation or upgrade fees of annual contract. Amazon founder and CEO Jeff Bezos said: "We've been working with AT&T on Kindle for over 5 years, and we're incredibly excited to offer Fire exclusively with AT&T. Fire puts everything you love about Amazon in the palm of your hand – Amazon's vast content ecosystem, exclusive features like Mayday and Fire's two new breakthrough technologies – Firefly and Dynamic Perspective. We can hardly wait for you to have a chance to experience it for yourself."

Nokia Buys SAC Wireless

SAC Wireless is being purchased by Nokia Networks, the companies announced recently. The value of the deal was not disclosed. The former company offers service providers like the telcos deployment-related services. That includes The SAC Wireless Engine Room for managing site development, architectural and engineering, regulatory and compliance activities for national network programs; implementation of indoor and outdoor small cells and distributed antenna systems, RF engineering and design, and the like; and turnkey program management of large scale network deployments.

Microsoft Offers Device Update

Tony Prophet, Microsoft's corporate vice president of Windows Marketing, at the recent Computex event said that recent Windows enhancements including \$0 Windows for devices smaller than 9 inches, relaxed certification requirements, the release of Windows 8.1 Update, Windows Phone 8.1, and Windows universal apps, which the company said make building Windows devices easier for a broader ecosystem of hardware partners and more valuable and affordable for customers.

Samsung Has Connected Health Ambitions

Samsung is working to carve out a space in the developing connected health solutions space, according to Dr. Dave Rhew, chief medical officer and vice president of global healthcare for Samsung SDS, who met with INTERNET

TELEPHONY recently. Bringing to bear the IT and other solutions initially developed by Samsung SDS for the company's internal use, as well as assets from the other divisions at Samsung, the company is just in the formative stages of its effort to create connected health solutions, Rhew explained. At this point, said Rhew, who joined Samsung a year ago, the company is working with hospitals and partners to understand what needs to be developed in terms of devices, applications, interfaces, analytics, tools to integrate into electronic health records, and feedback loops.

Threesome Addresses SON-Ready Small Cells

AirHop Communications, Broadcom Corp., and Radisys Corp. have come together to integrate their solutions to enable mobile operators to quickly deploy interference management functionality for LTE-based small cells across a broad customer base. The effort involves AirHop's eSON, a cloud-based client-server architecture enabling coordinated optimization across small cell layers as well as between small cells and macrocells; Broadcom's BCM617xx Series small cell silicon; and Radisys' Trillium LTE TOTALeNodeB solution. Trial deployments of the solution are under way with leading mobile operators.

Ericsson Report Offers Cellular Outlook

The number of active cellular M2M devices will increase three to four times by 2019, from 200 million at the end of 2013, according to a new report from Ericsson. While the majority of cellular M2M devices today are still GSM-only, that is expected to shift by 2016 when 3G/4G will represent the majority of active cellular M2M subscriptions. The report also notes that next year the total number of mobile subscriptions will exceed the world's population. Mobile subscriptions have grown by 7 percent year-over-year, with 120 million net additions in the first quarter alone. Mobile broadband subscriptions will reach 7.6 billion by the end of 2019, representing more than 80 percent of total mobile subscriptions. In 2019, LTE population coverage in Europe will be around 80 percent, but Europe will only see LTE subscription penetration of 30 percent compared to 85 percent in North America the same year. Even within Europe there will be large differences between Western Europe and Central and Eastern Europe. Population coverage for LTE in North East Asia is expected to be 95 percent by 2019, with LTE penetration levels at 45 percent. By the same year, China is expected to reach over 700 million LTE subscriptions, representing more than 25 percent of total global subscriptions for LTE.

TMC Announces IT Excellence Award Winners

TM C, the parent of INTERNET TELEPHONY and a global, integrated media company helping clients build communities in print, in person, and online, is proud to announce the winners of the 2014 INTERNET TELEPHONY Excellence Awards.



These awards recognize the creators of technology that demonstrate leadership and innovation to the global industry. As part of this awards effort, INTERNET TELEPHONY recognizes companies whose products have shown improvements in their clients' business and honors the best IP communications solutions in the world.

COMPANY	WEB SITE	PRODUCT
ADTRAN Inc.	www.adtran.com	ADTRAN Bluesocket vWLAN
Alteva	www.altevatel.com	Hosted VoIP
ANPI	www.anpi.com	ANPI Managed SIP Trunking
BullsEye Telecom	www.bullseyetelecom.com	Hosted PBX
Calix	www.calix.com	Consumer Connect
Crexendo Inc.	www.crexendo.com	Crexendo's Cloud Telephony Solution
Elastix	www.elastix.org	Elastix
Fortinet	www.fortinet.com	FortiVoice FVC-40S
iAreaNet	www.iareanet.com	iAreaOffice 5.0
MegaPath	www.megapath.com	MegaPath Hosted Voice
Narus Inc.	www.narus.com	Narus nSystem
One Source Networks	www.onesourcenetworks.com	Cloud PBX
Plixer International Inc.	www.plixer.com	Scrutinizer 10
Radware, Inc.	www.radware.com	Alteon 5224
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Coming Next Issue...

- Small Cells
- Videoconferencing Roundup
- WebRTC



Sonus Creates UC Growth Opportunity with SBC Upgrades

As unified communications adoption continues to grow – often more rapidly within enterprises than IT teams can anticipate – the need to accommodate future growth without sacrificing service quality or reliability is paramount to success. With the 3.2 release of its SBC 1000 and SBC 2000 enterprise session border controllers, Sonus has effectively delivered future-proofed hardware for its customers by combining its hardware appliance with software-upgradeable licenses.

Once the decision has been made to move to a UC platform – whether Lync, which is becoming the dominant choice, or an alternative solution – the recommendation is to also deploy an SBC to help mitigate risk related to security issues, interoperability, and reliability. But what is becoming an oft-occurring situation is under-subscription of UC services and features.

Despite engagement with the integrator or reseller, IT managers often fail to properly anticipate the rate of adoption of UC within the enterprise. It might be a question of cost, a poor previous experience, or even an assumption the sales rep is keen on maximizing his sales; whatever the reason, David Tipping, vice president and general manager of Sonus' SBC Business, says nine of 10 enterprises initially opt for less capacity than is recommended and find, instead, that adoption rates quickly exceed acquired capacity.

Capacity could mean additional PRIs to connect to PBXs or key systems, more analog ports for fax connectivity, or increased sessions for SIP sessions. The need might be driven by the convenience of click-to-call, or the benefits of video collaboration, or the cost savings from bringing conferencing in house rather than using a third-party provider. Again, whatever the cause, the result is more users than have been planned for.

The result is a potentially frustrating period of waiting – waiting for new hardware to be delivered, then waiting for the scheduled downtime (which is never desirable),

and then waiting for the actual installation to take place and system to be restarted.

"It could take several weeks, and it can add lots of friction in order to do something as simple as adding capacity," says Tipping.

With its latest release, Sonus eliminates the friction and the barriers to rapid scalability with what is perhaps best described as a hybrid between traditional and cloud SBCs.

Gambling that enterprise adoption of UC is going to grow even faster than it has, Sonus has incorporated maximum hardware into the appliance, addressing capacity through software licensing. The result: All that is needed to upgrade capacity of any sort is a new software key, which is obtained by the partner through a web-based portal and installed remotely without any downtime or delay.

"The nice thing is that, between the customer and the partner, the transaction happens quickly," says Tipping. "The customer is back to running the business without having to worry about downtime, and the partner can have a higher productivity level. This is a change for the industry that we think is going to be readily adopted by our partners."

Initial feedback, as should be expected, is highly positive, as soon as partners realize the implications of software-only upgrades to an appliance-based platform. In fact, it's the same model Sonus offers with its SWE edition (its virtual SBC), using a software key to unlock features, functionality, and capacity. That's without requiring a full-blown move to all-IP, which, while a future target, is hardly reality for most enterprises today, which still have a need to support TDM connectivity, which requires hardware. This offers a taste of the license model, and it creates a path by which enterprises can grow and enhance their UC capabilities easily and as needed, until they reach the all-IP pinnacle, at which point they'll have the option to go virtual with the SBC as well. **IT**

Sonus has effectively delivered future-proofed hardware for its customers by combining its hardware appliance with software-upgradeable licenses.

Your Communications Solution



New GXP2140



UCM6100 series
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New GXP2160



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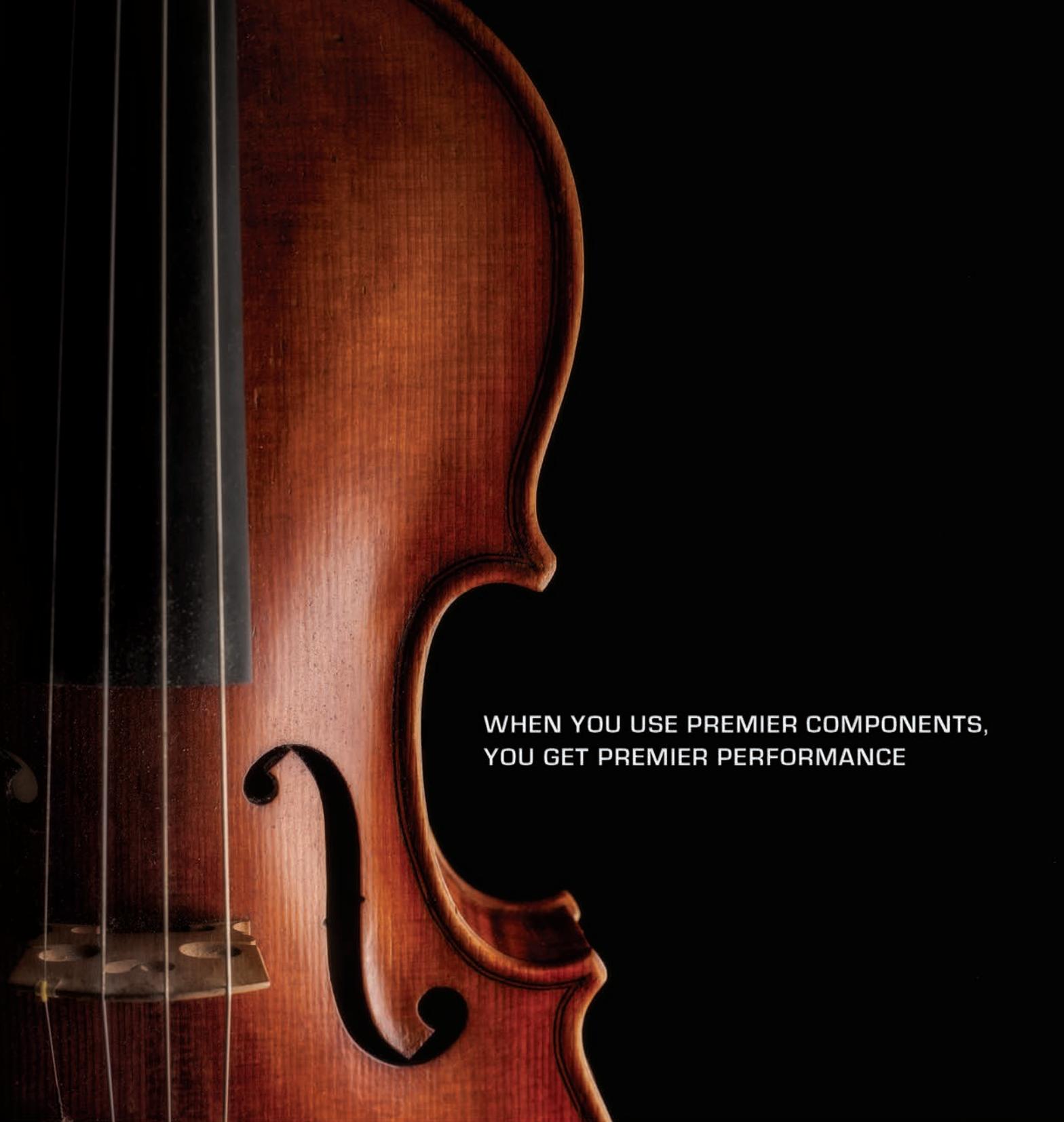
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