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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. itmaq.com or call 203-852-6800.

POSTMASTER: Send address changes to: **INTERNET TELE-PHONY®**, 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: Pithey Bowes International, PO Box 25542, London, ON N6C 6B2, CANADA

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

Calling It Splits

Comedian Louis C.K. says divorce is always good news because no good marriage has ever ended in divorce. That may also be the case with diversified companies that are now heading for splitsville because their portfolios and growth profiles have become completely out of sync.

"The motivations that compel companies to split can vary significantly, but they come down to two main benefits: focusing management and maximizing shareholder value," Business Insider recently noted.

In discussing Madison Square Garden's exploration of a plan to split, which was revealed in late October, MSG's CEO Tad Smith commented: "Investors favor companies with greater strategic focus on their core businesses."

These are the drivers of an array of splits and spinoffs we're seeing in a variety of industry verticals. But the divorce rate in tech seems especially notable given some of the major players making a break.

HP and Symantec are among the companies that have recently revealed plans to split. Meanwhile, Alcatel-Lucent recently sold off the bulk of its Enterprise division to a Chinese investor, and Amazon is spinning off PayPal, the online payments outfit it bought in 2002.

News of the HP split came as HP nears year four of its five-year turnaround plan, noted TMC reporter Peter Bernstein. HP President, CEO, and Chairman Meg Whitman said the plan did strengthen the company's core business, but that the split will provide the two companies that come out of it with "the independence, focus, financial resources, and flexibility they need to adapt quickly to market and customer dynamics...."

The HP split will result in the creation of HP Inc., a personal systems and print company, and Hewlett-Packard Enterprise, which will sell the company's OpenStack Helion cloud platform, networking, servers, storage, and services and software. Conventional wisdom is that this split makes sense since these two sides of the business had an extremely broad portfolio, which meant different customers, different sales cycles, and that made it tough for investors to evaluate growth prospects and the value of the business. Hewlett-Packard Enterprise is the business at which IDC expects to see more radical change and strategic bets based on where it believes technology is going, commented IDC analyst Giorgio Nebuloni.

Meanwhile, security giant Synamtec, which has a valuation of \$16 billion, in October announced plans to split into a publicly traded



company focused on data security and another focusing on information management. Activist investors have reportedly been pushing for this for five years, as revenue has been on the decline, perhaps due in part to slowing PC sales.

"It has become clear that winning in both security and information management requires distinct strategies, focused investments and go-to market innovation," said Michael A. Brown, Symantec president and CEO. "Separating Symantec into two, independent publicly traded companies will provide each business the flexibility and focus to drive growth and enhance shareholder value."

In September we learned of eBay's plans to spin off PayPal. This is scheduled to happen by the end of this year.

And in October we learned that Alcatel-Lucent Enterprise is becoming its own company with the help of a new majority investor out of China. These changes are being made with the goal of doubling the size of Alcatel-Lucent Enterprise's business over the next five years.

"This is the first day in a new era for Alcatel-Lucent Enterprise," Michel Emelianoff, Alcatel-Lucent Enterprise president, said in announcing the news.

China Huaxin Post & Telecommunication Economy Development Center (or China Huaxin) closed a Eur 202 million deal with Alcatel-Lucent for an 85 percent share of Alcatel-Lucent Enterprise, which becomes its own holding company, to be incorporated in France. (Alcatel-Lucent is the only other shareholder of the new Alcatel-Lucent Enterprise, with the remaining 15 percent stake. The new company and its former partner will continue to work together under what they describe as a "privileged business relationship".)

China Huaxin is a Chinese investment company with more than Euro 1 billion in assets and a keen interest in information and communications technologies, including the cloud, optical communications, smart city, telecommunications solutions, systems and software, and now enterprise and mobile applications.

"This is an investor that's looking at long-term value," Emelianoff said.

About a year ago, Emelianoff said, Alcatel-Lucent decided to look for external investors that could help empower the Enterprise business to cement a leadership role with businesses as they transitioned to new IP- and software-based technologies and on-demand IT business models. By Rich Tehrani



How to Make Email Smarter

Many of us live in email. I get hundreds per day, and I need almost every message.

I am also a source of tremendous messaging pain here at TMC because part of what I think makes an effective team is being in sync. To ensure the right people are in the know, I forward a tremendous amount of messages to various groups. Perhaps a few dozen pieces of email I send each day are newsletters, press releases, or other information my team should know about.

If I knew, however, that the people I was forwarding to already had the email I was about to send, I would have one less

Tagging would be another great feature – if a few users tagged an e-mail with the word #WebRTC, #iPad or #Verizon, it would be helpful to other potential readers.

job to do, and they would have one less email to check. Amplify this concept and you can see how if we effectively had an email reduction system in place where a person could know who else received the same email, we could cut down the size of inboxes and sent folders.

A simple solution would be to display the "Send To" address in a different color if the person in question already had the document. At that point, if you weren't going to send a special note with the message, there is no need to send it at all and moreover, you may remember to not forward that newsletter again because the person in question already gets it.

We've heard that other technologies such as social were going to kill email, but email alerts me to messages in my various social accounts, not the other way around. Social techniques, however, could help email a great deal. Imagine if you could like an email and everyone in my company could see which messages were marked or perhaps more importantly, which emails were trending, were disliked, etc. Tagging would be another great feature – if a few users tagged an e-mail with the word #WebRTC, #iPad or #Verizon, it would be helpful to other potential readers.

Currently, many mailboxes let you rank your messages with a VIP list of senders, but this is not a great solution when an urgent news item or other piece of actionable intelligence comes from a source you never considered

adding to the VIP list. What if you could just extend the VIP idea slightly by marking messages as VIP if a person on the VIP list marks it as important?

A simple way to achieve many of these goals would be to establish a domain of users and then have the mail server provide

options in the email client for users such as a selection of tags – and/or a like button.

What is shocking is that email vendors haven't done these things. Imagine the lock-in potential available to Microsoft if it had such technology in place in Outlook. Instantly, Gmail would have a high hurdle to overcome, and the iPad mail client would be inferior.

Microsoft should have done this years ago and integrated the same functions into Hotmail for the double-lock-in. Frankly though, these systems would work better if they worked across mail systems something which is probably unlikely.

Email is here to stay, but it needs to be fixed. Smarter email systems should help us by reducing our sending and receiving workloads and cluing us in to important emails before they are even opened.



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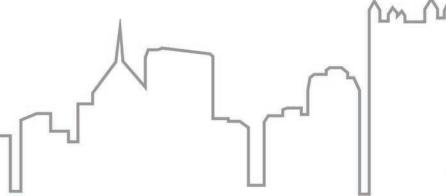
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VolP Innovations

By Art Rosenberg



Mobile Customer Service Is A Two-way Street

If you read the many articles by industry pundits about mobile communications, you will see an emphasis on the flexibility offered to end users with multimodal (or omnichannel) smartphones and tablets. They can initiate any form of contact, ranging from messages to voice/video connections, and can receive any form of communication contact as well.

Unfortunately, however, the emphasis of such flexibility is still focused on personto-person contacts, in the same way that legacy telephony has primarily done. Although there have been automated telephony calls generated for both telemarketing and customer care purposes, the ability for mobile devices to exploit more efficient, personalized, proactive business process notifications is still evolving.

It is time to recognize that real-time incoming telephony is being subsumed by near real-time proactive messaging notification, which is more cost-efficient and flexible for basic information delivery and self-service transactions. With new WebRTC options to click for assistance, conversational live assistance can also be contextually and efficiently accessed on demand by mobile customers.

Recent studies have already shown that most consumers don't call a contact center until after they have researched their problem online. Now, we can exploit the greater accessibility of mobile device users to monitor customer status and proactively notify them if there is a problem that they need to be aware of and take action on. It is also most efficient to enable customers to respond to such problems easily with self-service options, rather than force them to initiate voice calls in an attempt for assistance.

There are several vertical markets where such notification use cases can be very useful, including education, financial services, government services, health care, insurance, etc. However, it will be important that notification messages also allow recipients to respond easily and flexibly with their mobile devices. This will not only be to confirm receipt, but also to access self-service apps for follow up actions, or to access live assistance if necessary.

To do all of the above, whether with live agents or self-service applications, we have to starting looking at the contact center as an interaction center that can handle both inbound and outbound contacts between people and with online self-service apps.

Incidentally, there is also a need for customers to have control over the many automated notifications they may receive from business process applications, some of which will be important, others just annoying.

Art Rosenberg is a veteran industry analyst who works for The Unified-View/ UC Strategies Expert.

Disaster Preparedness

By Rich Tehrani & Max Schroeder

Time for Your 2015 BC Plan Update

A recent article in USA Today quoted an Ad Council survey showing nearly two-thirds of small businesses do not have an emergency plan in place. Also referenced was an Insurance Information Institute study showing that 40 percent of businesses affected by natural or manmade disasters never reopen. Frankly, these statistics are totally unacceptable in today's world.

A full disaster recovery plan in 2000 or even 2005 was expensive and cumbersome. Physical backup offices and support sites were usually necessary. Now, at the midpoint of the second decade of the 21st Century, a plethora of business continuity solutions minimize or eliminate the requirement for physical office space. Data storage and VoIP were some of the earliest hosted cloud solutions and are proven components for BC. Lync and Microsoft Office 365 also address a wide-ranging marketplace, and the application components are wellknown to most office personnel. Some products are designed to address the broad marketplace yet meet the requirements of specialized markets like the financial and health care industries. etherFAX's fax hybrid offers CPE deployments combined with a secure cloud service and full fax encryption. TMC's Online Community Mobile Market Portal addresses enterprise mobility management solutions such as device management, application management, email containers and virtualization. However, your organization must first implement the solutions to be protected, so don't procrastinate.

Educating yourself first is always a good idea. Begin by scheduling some time to visit TMC's site and research the Communities, Channels and Technologies tabs for the most current information on today's solutions. Next, draft a checklist of your present BC/DR requirements. Do not hesitate to utilize a reseller or consultant specializing in BC to draft the list and assist in evaluating the latest technologies available. The list of hosted service options seems to be growing exponentially, so selecting the right partner is critical to your BC design and implementation.

Last but not least, strongly consider adding ITEXPO East 2015 to your checklist. The event will be located at Miami Beach Convention Center and runs Jan. 27 through 30. Some of the collocated events such as Asterisk World, Case Study University, M2M Evolution, and Smart Conference are also very relevant to BC planning.

You only have one chance to survive your first disaster, so get moving today.

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



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Hosted PBX: How to Beat the Total Cost of Ownership Argument

The consumer as-a-service revolution – cloud, platform-aas, software-aas, desktop-aas, unified Communications-aas, or whatever - is moving toward a cost-structure problem.

End users of software, hardware, and applications as services are required to pay a steady amount each month or each year, replacing the capital cost and support cost model. The emerging problem is to justify to a business that paying this higher total cost of ownership for what they feel is essentially the same service they had previously is worth it.

VoIP Logic is a platform-as-a-service provider, but our clients are exclusively service providers that see total cost of ownership benefits in working with us through both capital and operational savings. They benefit from the integrated platform but also from engineering expertise, a 24/7 technical assistance center, access to advanced monitoring tools, and no oner-It is incumbent ous facility commitments, etc. For business customers, this is the standard, upon service providers so making everything as-a-service is not a new concept.

to understand the specific So, how do voice service providsweet spot of each individual ers show value to businesses to compel them to switch to a recurbusiness customer and ring cost model? Across our more than 30 service provider partners we see an interesting range of value propositions that are generally based on the targeted end customer's business profile. Understanding and using these value propositions can create compelling arguments in the as-a-service sale to businesses that might be concerned by higher TCO.

Service as a Service

This is the non-technology sale, and it usually starts with SIP trunking. Everyone understands that you have to pay for usage. The applicable customers are all businesses that are perfectly happy with their existing technology. They either need to save money on call origination and termination or need to go with a low performing hosted PBX system to overcome an end-of-life issue on their current phone system. These users see the cost as consistent between the old and new systems. Before, they paid monthly for usage; now, they will still pay monthly for usage.

Feature Overload

This is the technology sale to the non-technology company. Usually there are just a few features in the hosted PBX technology package that allow the business to justify a small incremental cost for the technology beyond usage costs. The features above and beyond legacy PBX might be voicemail to email, soft-key configuration (cool phones), easy management of user features via a web portal, or easy management of group features like hunt groups or auto attendants. Currently, this is

the method a majority of our SPPs use to sell. Before, the functionality was primitive; now, for a few extra dollars a month, they will see substantially improved technology.

Feature Customization

This is the technology sale to the technology-savvy company. We have a number of SPPs targeting these businesses that have an existing wish list of what they need to integrate. Frankly, they are the most fun because they push the envelope and force us and our SPPs to continually work on new interoperations between systems. WebRTC is a prime example of a growing standard that allows service providers to design impressive and customized telephony applications. Of course, unless you are iteratively selling the features once customized they are not so cost effective. Before, their telephony infrastructure stood alone; now, it will be integrated

with other business systems, offering improvements in productivity and a wow factor.

Technology Bundling

As winners emerge in the cloud services market (like salesforce. com, Google Apps, etc.), it makes sense to bundle them together into packages. Service providers gain a lot by bundling – higher revenue per user on more aggressive pricing, stickier business customers consuming more technology from them, and a stronger total cost of ownership argument. If businesses bring

their own technology you have to hope that integrations are already built - otherwise you

are back in the previous feature customization category. Fortunately, most of the innovation in hosted PBX is occurring through software applications that integrate communications into other IT services. VoIP Logic is starting to see SPPs take baby steps in this direction by using middleware integration applications like gUnify to merge hosted PBX into a larger IT ecosystem. Before, their service provider offered hosted PBX; now, their service provider is competing for more of their IT spend.

In the competitive battles for business customers there is a still a significant ground game for hosted PBX service providers and technology purveyors to streamline technical integration and commercial deal-making so that service providers can easily customize and bundle. The network effect of the cloud and as-a-service models can justify the total cost of ownership argument. APIs are prevalent, SDKs are more accessible, app stores with great technology from small development shops are everywhere, deployment is becoming easier, and WebRTC has further reduced the effort and cost on voice/ video app development. Now it is incumbent upon service providers to understand the specific sweet spot of each individual business customer and deliver the right value-adding solution.

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

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Copyright © 2013, Oracle and/or its affiliates. All rights reserved. Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners. The Infrastructure of the Internet of Things

In a recent Financial Times article Daniel Thomas proclaimed that devices being connected to a network, also known as the Internet of Things, is already a requirement in many places today. The main drivers for the need are cost reductions, increased efficiency, and improved security, but the real prize is access to all of the data that can be collected, analyzed, and utilized by the entity that captures it. There is little doubt that the long and much hyped IoT is finally taking shape because of the desire for this data, but there is some question as to what entity, or entities, will succeed, how, and why. Will it be the telecom carriers, the content providers, or something else?

Network neutrality is critical to pass data over another entity's network, but it is seemingly unlikely to ever occur whether fairness is legislated or not. Therefore, success will be achieved by those entities that build and are able to control their own networks end to end to collect that data. With that there are two threshold issues with the IoT, and both are related to network infrastructure – who is going to pay for it and who will control it? and profit model. The non-carriers are also in a better position because they have no vested interest in legacy infrastructure, so they have nothing to protect.

With IoT market size forecasts reaching nearly \$2 trillion in just six years from now there is a built-in financial justification for the investment. That is good news because as it relates to mobile devices the geography where these things are will be as scattered as leaves blowing in the wind. Insurance companies and law enforcement agencies monitoring your speed in Wi-Fi-enabled smart cars that need constant and reliable LTE wireless connectivity is a good example of one application that will require significant infrastructure. Revenue from insurance premiums and speeding tickets is a big motivator.

"There are good opportunities in machine-to-machine for telcos, but they may not be easy," Martin Garner, analyst at CCS Insight, as quoted in the Financial Times, said. "The major machine-to-

The volume of data being projected to come from the IoT makes the volume that we have in the United States today look like dial-up from 1995. With such massive investment required, how will the Internet scale at a rate fast enough to meet the demand of all of these things? machine deals are often on long sales cycles and are highly competitive. Also, connecting things up is only the first step, and the main value to the customer comes from how the data generated is then used – telcos may look for a role in the IT aspects of this, but they will either be collaborating with, or competing against, established IT players."

Ovum analyst Matthew Howett, also quoted in the Financial Times, added: "The fragmentation and lack of technology standards could provide the biggest

The network of networks known as the Internet is constantly evolving and growing, so it is not news that investment in every layer is always occurring, but to-date investment has been dictated largely based on the criteria of profit derived from the service of providing access to the Internet. The volume of data being projected to come from the IoT makes the volume that we have in the United States today look like dial-up from 1995. With such massive investment required, how will the Internet scale at a rate fast enough to meet the demand of all of these things?

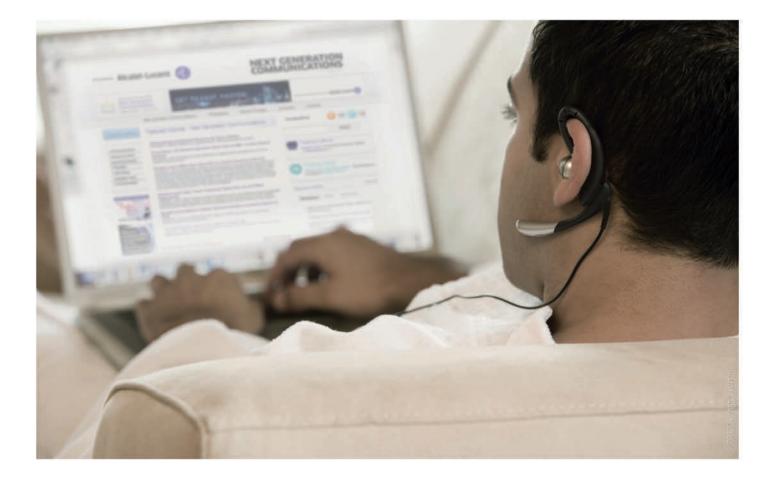
The Internet, and more accurately stated Internet protocol networks, will scale by and from the network operators that have the desire for the data, the capital to invest in the network infrastructure required, and the ability to move faster than competitors. The content providers and other non-carriers are actually in a better position to make that investment because their desire to capture and capitalize on the data produces a greater return than that of the traditional Internet service provider revenue opportunity for telecoms operators in a fast-evolving industry already changing how people live. There is a clear opportunity for an aggregator who is able to interconnect the myriad inoperable devices."

Connecting things up is the first step for sure. Without that there is no access to the data.

Given the scale and expense of the infrastructure required for a geography the size of the United States, it would seem logical to create a new business model for the physical layer in the core. Building a neutral, standard physical interconnection infrastructure that aggregates the disparate networks and allows the open flow of the data from the devices and machines to and from the network servers that are processing that data on a national basis would lead to a more efficient and cost-effective process for obtaining dedicated, private network infrastructure.

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





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AT THE SPEED OF IDEAS™

By William B. Wilhelm & Jeffrey R. Strenkowski





FCC Sets Rules on Text-to-911 Service Requirements

In August the FCC released an order regarding text-to-911 services. The order requires "covered text providers" to be capable of supporting text-to-911 by Dec. 31, 2014. They will then have until June 30, 2015, or six months from the date of a request by a public safety answering point, to implement such capability for 911 text messages to that particular PSAP. "Covered text providers" include all CMRS providers, as well as all providers of "interconnected text messaging services" that enable consumers to send text messages to and receive text messages from all or substantially all text-capable U.S. telephone numbers, including through the use of applications

downloaded or otherwise installed on mobile phones.

The rules require covered text providers to route messages using coarse location (cell ID and cell sector) or other means that allow the covered text provider to route a text to the appropriate PSAP. The FCC anticipates that many interconnected text providers will choose a CMRS network-based solution to deliver texts-to-911, at least as an interim measure. The FCC also found that it is reasonable for CMRS providers to receive commercially reasonable compensation for the delivery of 911 text messages. Accordingly, providers using the CMRS network-based delivery model must inform consumers that, absent an SMS plan with the consumer's underlying CMRS provider, the covered text provider may be unable to deliver 911 text messages.

The text-to-911 rules are the latest in a long series of emergency access service requirements imposed by the FCC on new and emerging forms of communications and technologies over the past several years, and it is expected that the agency will continue to be active in this area in the coming months.

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

Ask the SIP Trunk Expert

Demand for SIP Trunking is at an All-Time High

SIP trunking has crossed the chasm, becoming a mainstream application that's now in high demand. We're seeing this at Ingate where inquiries about SIP trunking translate to sales, quickly, and existing customers are reordering SIP trunking solutions in higher volume. The opportunity for cost reduction is far too compelling to ignore.

Since SIP trunking hit the scene a few years ago, deployments have evolved to meet the needs of a changing telecommunications industry. Larger deployments with higher numbers of sessions are on the rise. Today, typical deployments handle between 50 and 1,000 concurrent sessions or calls, addressing the needs of medium-to-largesized business looking to adopt secure VoIP over SIP trunks.

Recently even these numbers have started to increase dramatically, especially

among call centers adopting SIP trunking to lower costs and to easily provide for remote call agents. The cost differential between traditional telephony and VoIP is astounding – for call centers making hundreds or thousands of calls a day, the cost-savings is tremendous.

With SIP trunking, call centers can also provide customers with enterprise-class real-time services such as click-to-talk and instant messaging. This is a significant competitive advantage.

Cloud deployments are also on the rise. One Ingate customer, a data center, is deploying cloud-based SIP trunking first in Europe, then rolling it out globally. Cloud-based services are beneficial for customers that want the flexibility of serving a wide geographical market from a central location. For their clients, hosted SIP trunking is an opportunity to leverage this

By Steve Johnson



technology with lower startup costs, and minimized maintenance costs.

The cable industry is also providing SIP trunks to business customers. For them, SIP trunking is an expedient way to service a large market with low-cost, high-margin telephony solutions.

The fact that SIP trunking has evolved to become truly enterprise-class has fueled these kinds of deployments. Today, cable operators are installing in multi-site companies supporting thousands of SIP sessions.

Dovetailing with the surge in SIP trunking deployments is interest in WebRTC. Many industry experts agree that WebRTC and SIP trunking will go hand-in-hand. We look forward to this next evolution in telecom.

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

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Will 802.11af Wi-Fi Replace 802.11ac in the Home?

What do 802.22, WRAN, Wi-FAR, 802.11af, White-Fi, 802.19.1, and Super-Wi-Fi all have in common? They all are part of the newest IEEE standards ecosystem supporting spectrum sharing for cloud-directed agile radios.

TV white spaces was the first brand used for the spectrum-sharing method adopted by the FCC in 2010. Now, new spectrum-sharing terms like dynamic spectrum access and spectrum access system are being adopted. Spectrum sharing is also moving out of the spectrum occupied by TV stations and into 3.5gHz, so TV and white spaces may no longer be applicable descriptors. With the new IEEE 802.xx standards being approved for the new spectrum-sharing radios, chip makers are looking at committing the multi-million dollar budget required for manufacturing a chip. After the chip makers start delivering the chips to the world, the new efficient

spectrum regulators like the FCC.

802.22 provides for different power levels as authorized by the regulator. For fixed-outdoor uses, the maximum power allowed by the FCC is 4 Watts, but for personal portable agile radios it is 100mW. It is the 4-Watt power that allows 802.22 devices to deliver fixed, wireless broadband through 25 miles of trees, justw like TV stations and two-way public safety radios.

The applications are endless as the 802.22 fixed wireless broadband radios can potentially eliminate the use of towers because of the superior propagation characteristics through trees, buildings, and terrain. The radios can deliver intelligent transportation system applications through curves and trees found in thousands of miles of roads. 802.22 can deliver fixed

802.11af will be ideal for M2M connections, as it will use well-known 802.11ac methods but, using the TV spectrum, will penetrate walls, basements, and foliage. broadband for mobile carrier backhaul in rural areas and to carrier small cells in urban areas. The TV white spaces radios can also deliver fixed wireless broadband across hundreds of miles of rural areas, through trees and terrain in Africa, Asia, and India, where there is no fiber.

On Feb. 25, 2014, IEEE took another significant step, publishing 802.11af, also called White-Fi. 802.11af is a modified Wi-Fi standard building on the

spectrum-sharing system will be known by the industry with the IEEE designation: 802.22 for long-haul broadband or 802.11af for local area Wi-Fi broadband.

On July 1, 2011, IEEE published 802.22. Dubbed Wireless Regional Area Networks, it is also known as W-FAR, a better descriptor. Apurva Mody led the IEEE 802.22 Working Group. He also is the chairman of the White Space Alliance. He and the other White Space Alliance members such as iConectiv have tirelessly promoted the spectrum-sharing method across the globe.

Why is 802.22 a big deal? The industry press focuses on WRAN's broadband reach of 20 to 60 miles. The service can deliver 22Mmbps over a 6mHz channel and can technically combine four channels to deliver up to 88mbps. The spectrum for the 802.22 standard is the unused TV channels ranging from 54mHz (VHF Channel 2) to 862mHz (TV channel 69). The unused spectrum is called white spaces, and is located between active TV channels.

What is new and unique technically about 802.22 is that it establishes a method for more efficiently employing the empty TV channel spectrum and not interfering with active TV spectrum. The cloud database directs the spectrum agile broadband radios to use free TV channels based on information received from 802.11ac WiFi. It operates with spectrum-sharing techniques using a cloud geo-location database in the TV channel spectrum with agile radios. 802.11af allows radios to use 6, 7, and 8mHz channels bonded up to four channels delivering 24-32mHz of spectrum. 802.11af is meant for short-range broadband connections, and not for 802.22 long-haul connections. This means that 802.11af will be ideal for M2M connections, as it will use well-known 802.11ac methods but, using the TV spectrum, will penetrate walls, basements, and foliage. Wi-Fi using 2.4gHz, on the other hand, cannot reach into many home basements and is difficult to consistently connect M2M devices.

On Sept. 17, 2014, IEEE moved again and published 802.19.1. It established co-existence standards for agile radios operating together within the unlicensed spectrum directed by geo-location cloud databases. 802.19 requires a coexistence and information server, which gathers information regarding the location, antenna height, and power levels of other nearby agile radio networks operating in approved unlicensed spectrum slices. With the notification information from the coexistence servers, the agile radio networks can move to nearby lesser-used unlicensed channels.

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Contact Center Solutions

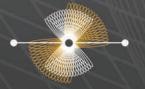
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By Jim Machi



Is WebRTC a Threat to VoLTE?

IMS network architecture has been around for a long time. While it was originally conceived for mobile IP networks, it first gained acceptance in wireline IP networks, such as cable networks. To date it has had spotty acceptance in the mobile arena. All this is changing. But why now? Dialogic has a unique perspective on that since it provides both nextgeneration network and IMS network infrastructure.

The NGN infrastructure is in the form of softswitches, gateways, and media servers, and the IMS network infrastructure is in the form of media gateway control function, media resource function, and various other gateways. We've seen that various factors come together to enable IMS deployments. In a nutshell, though, I would say that common sense and practicality have reigned supreme. Imagine that.

One obvious factor is the emergence of LTE networks. In fact, more than 300 LTE networks have been deployed worldwide so far, with hundreds more planned. LTE networks are essentially IP networks, so it makes sense that IMS would be the network architecture best suited to roll out an LTE network. So implementing an IMS network in this case clearly makes sense.

However, there is another very important reason that seems to have been somewhat overlooked. Many IMS

deployments are occurring because the NGN architectures that were deployed in the early 2000s are now in need of an upgrade. Yes, the NGN is no longer nextgen. The equipment is getting old and needs to interoperate with newer networks to survive. We have seen instances of NGN softswitches that are now out of service being replaced with our more modern C4 switches that have IMS capabilities, because the communications service provider wants to bridge the existing network with newer IMS networks. You can think of this as some kind of hybrid IMS deployment.

We have also seen older media servers in the form of boardlevel solutions being replaced with software-based MRFs. The application might still be a network voicemail (which could now include network video mail), but the media server architecture supporting the application can be more of an IMS architecture, where the app server and media server can be remote from each other. These MRFs can operate in full IMS architectures as well as NGN architectures.

In other words, CSPs are indeed going ahead and strategically replacing their circuit-switched equipment with packet-switched technology (including softswitches, media servers, and session border controllers) in an effort to reduce costs and converge voice, data, and video communications into richer multimedia sessions using the session initiation protocol standard. And the packet-switching architecture of choice is IMS.

It's also important to underscore that co-existence and phasing is vital in many of these deployments where VoLTE/ IMS networks, IP-based NGNs, and circuit-switched networks not only continue to coexist, but are also poised to do so for many years to come. However, it will require interworking between these different network architectures. The need for interworking across multi-generation networks through an

IP-based foundation is something that the industry has long anticipated, and the new IMS architecture seems to be the appropriate solution. IMS provides a network model that addresses two key considerations facing CSPs as they migrate to modern networks: the delivery of converged media-rich applications problems at once. They over packet-switched, all-IP networks, and the critical are leveraging IMS without interworking needed to support voice communications between 4G LTE, 3G, 2G, and fixed legacy implementing a forklift and NGN networks

> The outstanding challenge for these CSPs is managing this migration without incurring high costs or disrupting customer service. In a market climate where the average revenue per user

is either flat or growing at a minimal rate, and where low-cost or free over-the-top communications applications are eroding market share, the prevailing sentiment is often that CSPs need to manage their migration carefully and leverage their existing network assets for as long as is practically possible. CSPs are looking for a smart approach that will provide a seamless transition from legacy to NGN to IMS/VoLTE.

This is what I call smart IMS. These CSPs are using IMS to solve multiple problems at once. They are leveraging IMS without implementing a forklift network upgrade approach. In other words, they're using a smart migration strategy that allows them to leverage NGN network elements through built-in IMS capabilities and migrate the rest of the network over to IMS as their capex allows. An additional advantage is that many of the IMS solutions are currently either software-based or at least running on COTS architectures, enabling them to more easily migrate to network functions virtualization initiatives as they get rolled out by the industry.

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

CSPs are using

IMS to solve multiple

network upgrade

approach.



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Do We Need More Partners?

It is always a quantity vs. quality debate.

A duopoly carrier whose business only works on scale needs to chase as many partners as you can. A duopoly wants as many

feet on the street as possible. Microsoft, IBM, and Dell want as many partners as possible because they want to be on every desk. In fact, their survival depends on being on every desk. It isn't that a smaller carrier doesn't want as many partners as possible. In fact, most do want more than 400 partners, but is it realistic?

If you are a regional provider or a niche provider (I would put a lot of cloud services and data center stuff in the niche/regional boxes), then it should be about quality over quantity. Why? Reality is that most CLECs and cloud communications players have less than 60,000 customers (out of the 28 million businesses). So do you need 400 partners to reach 40,000 customers?

Pareto comes in to play on just about every program – 90 percent of the business comes from 10 percent of the partners. So why carry the lower 50 percent then?

It is overhead costs to manage unproductive partners. Too many partners can dilute the brand, too.

When you look at the output of average channel managers, you will see that there is a limit to how many partners they can con-

tact in a given month and a given quarter. Part of channel participation involves engagement. If the channel manager doesn't communicate with the partner about promotions, new services, etc., the partner will likely not be an active source of leads.

In a region or niche, you want to give your partners every opportunity to make a living. Too many feet in an area will stomp on each other. The best partners have a business plan that align with offering your services. To do so, a chunk of their business will be your business. There is something to

Too many feet in an area will stomp on each other.

be said for scarcity too. Fewer partners doing more business means these partners will be more familiar with your company's procedures and services. Look for quality over quantity for a great program.

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

Channel Briefs

Channel Aims to Promote Expertise

New research from industry association CompTIA reports that IT channel companies are becoming more self-reliant when it comes to branding, marketing and sales. In a trend that CompTIA says reflects the move away from selling product and toward selling expertise, more than four in 10 companies expect to accelerate social media activities to promote themselves as technology services experts to customers and prospects, according to the report.

IntegraOptics Hires Senior Channel Manager

Fiber optics networking components provider IntegraOptics Inc. has named Tony Westendorp senior channel manager. In this new position, Westendorp will implement channel platform strategies. Westendorp previously worked at Shire Pharmaceuticals in various sales and regional director positions, including most recently as strategic key account manager.

Tellwise Introduces Smart Messages

Tellwise recently came out with Smart Messages for Channel Management to help businesses more efficiently manage relationships and communicate with channel partners. A Tellwise Smart Message is a dedicated and personalized environment that combines email and instant messages with social and analytics capabilities for the VAR that is easy for the vendor to manage.

OneAccess, SYNNEX Partner

OneAccess Networks' One Series is now available to SYNNEX resellers. The multi-service router platforms are optimized for the delivery of voice, data and cloud applications.

RackWare Launches Channel Program

Software provider RackWare has launched a new channel partner program for service providers and VARs. Partners can benefit by gaining the ability to flexibly move, protect and scale workloads from anywhere-to-anywhere, including cloud, virtual and physical infrastructures.

Throw a Retirement Party for Your Legacy Call Center

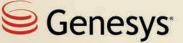
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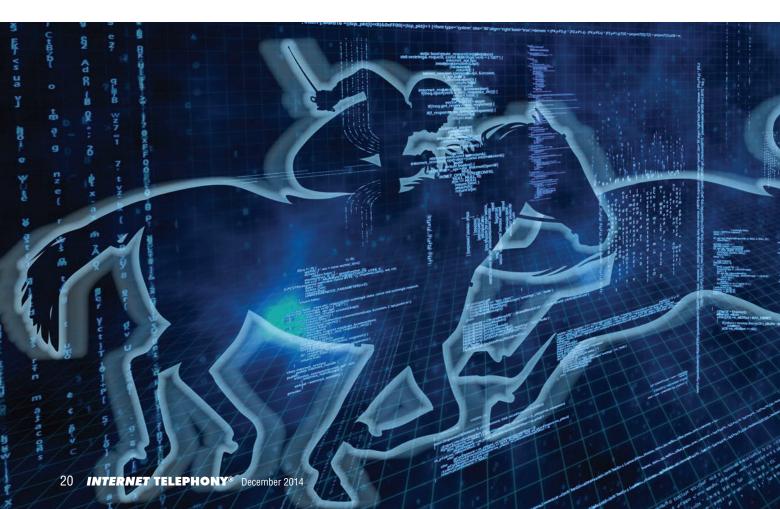
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THE NEW NOORSPACE VPULA BERNIER THE NEW PAULA BERNIER THE NEW PAULA BERNIER



ork is no longer a place; it's an activity. This statement became a popular utterance in business circles a few years ago. That still holds true today. In fact, at no time has it been more accurate.

As IDC reports, the world's mobile worker population will reach 1.3 billion in 2015, representing 37.2 percent of the total workforce. Growth in the number of mobile workers is obviously being driven by the rise of smartphones and tablets, and the widespread availability of both wireline and wireless broadband connectivity.

That, paired with the rise of cloud computing, and the availability of more affordable and integrated unified communications solutions, now means that both stationary and mobile workers can more easily and affordably connect with their companies, co-workers, and other colleagues, and make more informed business decisions to drive efficiency and profitability.

In an effort to position themselves in the corner offices of this new workspace environment, many of the IT industry's giants are ramping up their efforts to accelerate enterprise cloud adoption and, in some cases, sell themselves as end-toend cloud solutions providers. Meanwhile, collaboration and unified communications specialists are working to expand their solutions on this front via acquisition and the introduction of homegrown cloudbased offerings.

Complete Cloud

It became crystal clear this autumn that Microsoft is positioning itself to be businesses' preferred vendor for everything cloud based, as TMC Senior Editor Peter Bernstein recently reported. Microsoft CEO Satya Nadella in a recent speech explained that entails Microsoft using Microsoft Azure, Office 365 and Microsoft Dynamics to deliver what the company is touting as "the industry's most complete cloud."

"The enterprises of today and tomorrow demand a cloud platform that is reliable, scalable and flexible," Nadella said. "With more than 80 percent of the Fortune 500 on the Microsoft cloud, we are delivering the industry's most complete cloud — for every business, every industry and every geography."

Another IT giant, IBM, this fall join forces with both Microsoft and SAP to accelerate enterprise cloud adoption. The first alliance



Cover Story

entails IBM and Microsoft making key IBM middleware like WebSphere Liberty, M@ and DB2 availability on Microsoft Azure, Windows Server and SQL Server available on the IBM cloud, and IBM support of software running on Windows Server Hyper-V for hybrid cloud deployments. The second duo is making available the SAP HANA Enterprise Cloud offering on IBM's cloud.

Other IT giants like Cisco and Oracle also have cloud-based offerings addressing collaboration and data analysis, backup, and more.

Working It

Speaking of giants, Amazon and Google, which gave rise to the cloud, continue to push their cloud-based business initiatives.

In addition to its pioneering Amazon Web Services, Amazon offers WorkSpaces, a fully managed cloud-based desktop computing service that allows customers to easily provision desktops that allow end users to access the documents, applications and resources they need with the device of their choice.

Google, meanwhile, continues to add to its array of online productivity tools and partners. In fact, the company in late October announced an alliance with PwC, in an effort that Gigaom says aims to help Google prove that its apps and its cloud platform are ready for primetime use by big companies and to show that PwC understands the cloud. The deal entails combining the Google Apps cloud-based collaboration and productivity tools and PwC's business insights to make companies more productive, and better positioned to cater to customer needs and make decisions to drive market innovation.

Another industry giant, Microsoft, has made a huge impact in the collaboration and productivity space with its UC solution Lync. Microsoft late in 2013 told INTERNET TELE-PHONY that more than 90 percent of Fortune 100 companies are Lync users.

This enterprise platform provides a consistent, single client experience for presence, instant messaging, voice, video and meetings. It is available on Windows PCs, Windows Phone, iOS, and Android smartphones.

TMC President Rich Tehrani reported last month that Microsoft will phase out the Lync name and embrace the functionality and name popularity of Skype by using the name Skype for Business.

"The two services did work together but the Lync name will soon disappear," Tehrani wrote. "This is a smart move from a BYOD perspective and moreover immediately makes Skype seem like it is safe for any enterprise."

Stuart Cochran, CTO of Huddle, which provides video solutions that enable ad hoc collaboration in the workplace, expects 2015 to bring some significant shifts regarding enterprise collaboration and an increased focus on data sovereignty. For collaboration, 2015 is going to be about mobile, intelligence and collaboration as a business enabler rather than just an ef-

Cisco Looks at the Future of Work

new Cisco report, based on a a survey of more than 2,000 people across 15 countries, looks at the future of work, especially involving Gen X and Y whitecollar employees. And it reveals that these individuals are even more connected to their devices than you might think.

Getting Personal

Not surprisingly, the 2014 data shows that Gen Y is still very connected to their technology, with 76 percent choosing a smartphone over TV; 54 percent looking at their smartphones first before anything else in the morning; 45 percent willing to give carriers access to all personal information for a free smartphone with free data; and 22 percent of Gen Y and 17 percent of Gen X professionals being most concerned about losing their smartphone during a robbery.

More than a fourth of Gen Y and 21 percent of Gen X professionals, meanwhile, said they were open to surgery if a brain implant made the worldwide web instantly accessible. And 48 percent are apparently ready to sacrifice sex for one month rather than sacrifice their smartphones.

Work It

Cisco sees these Gen Y values carrying over into the workplace.

The majority of Gen X and Gen Y professionals use two to three devices per day. More than half of both Gen X and Gen Y workers prefer smartphones to desk phones. Forty percent of Gen Y and 34 percent of Gen X workers believe that by 2020 the smartphone will be the most important device.

Seven in 10 HR professionals think Gen Y employees are able to perform tasks faster if they are allowed to use their mobile devices and apps instead of desktop, laptop or notebook PCs. But 40 percent of respondents would still choose a laptop over another device for work. The smartphone is overwhelmingly the second-rated choice (34 percent Gen Y; 27 percent Gen X).

About half of those surveyed have 20 or more personal applications, while the vast majority (92 percent) indicate having less than 20 workrelated apps. Further, nearly seven in 10 use less than 10 apps (for their work and perficiency driver, he said. "We believe that the trend of workforces becoming increasingly mobile, as well as the increasing popularity of BYOD, will evolve away from simple workforce mobilization and secure access to documents, towards a stronger focus on productivity," Cochran continued.

"This will be particularly prevalent in larger organizations, where the number of documents,

employees, and interactions is much higher. Mobile apps will need to move away from pure sync and share, and become true tools to help workers navigate, prioritize and action the huge number of interactions that they need to deal with."

UC Consolidation

Many of the companies that specialize in the business telephony and unified com-



munications arena are working to ensure their positions in the new workspace.

For example, Mitel in the past 18 months has doubled in size and expanded its market presence and product portfolio in what it says is a rapidly consolidating unified communications market. The company has done that via both acquisition and organic

growth. And at press time it was trying to purchase yet another company - ShoreTel.

As for ShoreTel, this company also seems to have positioned itself well to compete in the new workspace arena judging by its recent financial report and new financing.

Like Mitel, PGi has been on a tear – acquiring complementary companies and expanding its solution set at a rapid pace. The company has a half-billion-dollar credit facility, and it continues to seek acquisitions in the collaboration/UCaaS and managed video services arenas. That could position it well to move on the growing opportunity in collaboration applications, a market that IDC expects to grow to \$5.7 billion by 2018.

PGi, a 20-year-old company that says it's the largest pure-play collaboration provider, has a global presence in 25 countries, and serves 50,000 enterprise customers, including 75 percent of the Fortune 100. In October PGi announced the acquisition of Central Desktop Inc., which sells cloud-based team collaboration and project management solutions aimed at marketing teams. Central Desktop offers SocialBridge, which enables marketers to collaborate with others within the enterprise, as well as with outside partners such as advertising agencies, to formulate and approve marketing collateral. The platform provided by Pasadena, Calif.-based Central



sonal lives) regularly each day. The number of Gen X workers with 60 to 99 apps on their smartphones is more than double the number of Gen Y workers who have downloaded that many apps.

Resetting Expectations

Access to multiple smart devices has enabled people to work anytime, anywhere, and to be available 24/7. About half of Gen X and Gen Y professionals believe such supertasking makes an individual more productive. Similarly, HR professionals (62 percent) predominantly believe supertaskers increase their organization's productivity and increase the expectations of what it means to be a high performer.

More than half of professionals consider themselves A visual from the new Cisco report.

accessible for work 24 hours a day, 7 days a week, including three in 10 who are accessible by both email and phone.

While salaries are the most important factor for most in their decision to accept a position, the flexibility to set their own schedules or the ability to work remotely is most important to roughly one in 5 Gen X and Gen Y professionals, as well as one third of HR professionals.

Key Takeaway

The digitally adept who will be populating the

workplace understand that connectivity and the rapid introduction of innovation will be constants in their lives. As a result, the workplace will become more dispersed/virtual and the nature of work will change and employer expectations about availability will continue to make work/life balancing a challenge.

BY PETER BERNSTEIN

The flip side of the last point is that a fickle workforce in terms of loyalty will expect employer flexibility as to who, what, where, why, how and when work will be done.

Cover Story

Desktop, which has an annual revenue run rate of about \$9 million, is in use by more than half a million users worldwide. And PGi plans to take the solution global.

"We've done five acquisition in the last 15 months, and we're just getting going," PGi's Sean O'Brien, executive vice president of strategy and communications, recently told INTERNET TELEPHONY.

New Positioning

While companies like Mitel and PGi are bulking up, Alcatel-Lucent Enterprise aims to find growth by splitting off from its parent company. But that too could lead to acquisitions related to the enterprise cloud.

Alcatel-Lucent Enterprise this fall announced plans to become its own company with the assistance of China Huaxin Post & Telecommunication Economy Development Center, which recently closed a Eur 202 million deal with Alcatel-Lucent for an 85 percent share of Alcatel-Lucent Enterprise.

"The barriers to adoption no longer outweigh the benefits of unified communications, and as a result there are fewer and fewer businesses not utilizing UC."

 Diane Myers of Infonetics Research

China Huaxin is a Chinese investment company with more than Euro 1 billion in assets and a keen interest in information and communications technologies, including the cloud, optical communications, smart city, telecommunications solutions, systems and software, and now enterprise and mobile applications. About a year ago, Alcatel-Lucent decided to look for external investors that could help empower the Enterprise business to cement a leadership role with businesses as they transitioned to new IP- and software-based technologies and on-demand IT business models, Michel Emelianoff, Alcatel-Lucent Enterprise president, explained. China Huaxin will help Alcatel-Lucent Enterprise grow both through its knowledge and relationships in China; and its strong financial position, which can help fund the company's organic and non-organic growth around the world. While the companies have already identified areas in which Alcatel-Lucent can accelerate its growth, Emelianoff said, they are not ready to disclose in what areas they are considering acquisition.

As noted in the September issue of INTERNET TELEPHONY, Alcatel-Lucent Enterprise has been promoting its vision of the personal cloud, which it describes as 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.

Another company with a rich history in telecommunications, Unify (formerly Siemens Enterprise Communications), recently took the wraps off a new SaaS-based workspace solution called Circuit that gives business users access to a range of collaboration and communications tools from any device, all via a single interface. Circuit is the official brand name of the effort previously referred to as Project Ansible, which the company first discussed in June 2013.

Circuit is a a WebRTC-based clientless platform that delivers voice, video, screen sharing, messaging and file sharing capabilities in an integrated way to drive productivity. As a result, says CMO Bill Hurley, "people can focus on their work instead of focusing on the mode of communication to get the work done." This solution was created in collaboration with Frog Design, a German company that has produced award-winning designs for Apple, and worked with other top-shelf companies such as Disney and Sony.

While there are a multitude of unified communications offerings already on the market, Hurley says many of them are not elegant solutions but, like Frankenstein, are stitched together from different piece parts, which are often brought in via acquisition. Circuit, meanwhile, offers an easy-to-use way to collaborate and share and find documents, even as users move between different endpoints.

These are, of course, just a few examples of companies best known in the telecom arena that are now bringing to or expanding their portfolios with cloud-focused enterprise solutions that address the new mobile workspace. Others include GEN-BAND, NEC, and NTT.

Big Picture

Consolidation in the UC space is expected to continue, but the good news is that decreasing costs due in part to the rise of cloud computing mean more businesses will embrace such solutions.Cost is the most important factor driving cloud UC adoption, according to Infonetics Research.

"The barriers to adoption no longer outweigh the benefits of unified communications, and as a result there are fewer and fewer businesses not utilizing UC," said Diane Myers, principal analyst for VoIP, UC, and IMS at Infonetics Research. "Enterprises have a number of choices, from traditional premises-based solutions to a variety of cloud capabilities. This makes for a fragmented market for businesses to wade through, but it also provides options to best fit a wide swath of requirements."

David Danto, principal consultant for collaboration, multimedia, video and UC at Dimension Data, added: "Costs are coming down and with costs dropping, you are starting to see businesses utilizing the technology in much larger numbers.

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TMC Labs Calls 3CX Phone System a Solid Buy

By telecom standards, 3CX Phone System for Windows is a relatively new entrant into the communications space, but over the years the company has distinguished itself as a provider of easy-to-use communications and collaboration solutions.

A major differentiator, as the name implies, is that the system installs on a Windows PC and is easy to set up. It competes most directly with open source phone systems, which could require more knowledge or experience to manage. It is also up against newer cloud-based systems from the likes of 8x8 and ShoreTel as well as on-premises hardware from a slew of companies such as Avaya, Cisco, Panasonic, and Toshiba.

Installation

Installation on a Windows PC was straightforward. The company has a user manual online which effectively guides users through the set-up process. Once the system is running, emails are sent to users with files that auto-configure the client. In our testing, this method not only worked for PCs but also for an iPhone 6 Plus and a Samsung Galaxy S5.

When trying to use the web interface, however, something strange happened. When we logged in over a web browser, cutting and pasting the user name and password into the admin console from an email, it didn't work for some reason. We then decided to manually enter the user name and password and when we did this, the screen went blank. After some head scratching, we pinged the server and it responded repeatedly in less than one millisecond, leading us to believe there was something else askew. When we tried using an iPhone 6 Plus and Safari, however, the interface came right up. This led us to check the server configuration screen under Settings where we found entries for Blacklist. It seems we entered our credentials into the system too many times and our IP address became blocked. This is a great security feature that could also be frustrating for first-time admins.

Documentation/Training

This is a very easy system to use, and training is not a major issue as the GUI is quite intuitive. If users get confused, they can simply click on the letter "I" which brings up a web page with the user manual.

We appreciated the design of the company's 3CXPhone module, which mirrors the look on smartphones. This greatly reduces the learning curve.

In addition, the company has a set of videos that make it easy to use various functions of the system.

Features & User Experience

What is intriguing about this phone system/PBX is the fact that it is not only simple to use but also supports call center

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The 3CXPhone UI with the Information button

functions like calling queues. It should be noted that there is an optional call center component with advanced functionality, if you require it. Moreover, there is support for IVR or as the company calls it, digital receptionists. Also included are support for fax, VoIP gateways, remote connections, screen pop via web queries, and more.

The Server Manager interface is not unlike what you might see in Android or iOS with options on the left and settings on the right. Although we didn't test these, the availability exists to purchase the 3CX Cloud Server, the 3CX CRM Integration Module, the 3CX Hotel Module, and the 3CX Voice Application Designer.

In addition, 3CX supports WebRTC integration, meaning customers will be able to more easily click to communicate with your

	Manual
	er Manual explains how you can take advantage of all SCX Phone System features. SCX include
	ent for Windows. Mac, iPhone and Android which allows you to stay connected from anywhere an ar calls with a few mouse clicks.
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Presence	and status
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	g Queue Calls Using the Expanded Presence Screen
· View the	Presence of a Remote Office Using the Expanded Presence Screen
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Forwardin	g Rules
· Configure	ng Forwarding Rules for When you are on the Phone – JCXPhone
 Configuri 	ng Forwarding Rules for When you are Away or Out of the Office - SCKPhone
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- 7. Better fault tolerance through easy backup of your PBX
- 8. 3CX Phone System is more scalable than hardware PBXs9. Better integration with other business applications

10. Integrated Video Conferencing

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company, and users will be able to communicate directly through a web interface. Another interesting feature is that chats can be elevated to WebRTC calls. Currently, Web-RTC is supported by Chrome and Firefox.

There is also virtualization support, which is important for companies with more sophisticated data centers.

Build/Design

Overall, we liked the layout and design of 3CX Phone System. The user interface is lightweight yet powerful while the management console gave us tremendous functionality in an interface we are familiar with, where icons are on the left and settings on the right.

Performance

The system performed as you would think it should. We tested calling, voicemail, etc. Leaving a message immediately activated an envelope notification on the client screen. Calling an extension simultaneously rang smartphone and softphone. Sliding a missed call notification on iOS initiated a return call that went back through the 3CX PBX to a neighboring smartphone, etc. In one test, we emulated a frustrated worker by clicking on many of the users in the system at once and initiating chats, calls and conferences. We soon received an error message saying the number of licenses ran out. To solve the problem, we just had to hang up the lines. Basically, the system performed as expected.

Quality

In our testing, we were happy with the voice quality and the system met our expectations. We tested via our corporate network throughout numerous days and noticed no discernable issues. Chatting also worked as expected.

Differentiation

The company gives users the power of a traditional hardware-based phone system in a low-cost or no cost software-down-loadable option. The official prices appear in the table below.

Support

Our call to support was necessary because we couldn't get the client to work

		Standard Edition		Pro Editi	on
Product Edition	Sim Calls		USD		USD
3CX Phone System 4 SC	4		\$495		\$670
3CX Phone System 8 SC	8		\$895		\$1,210
3CX Phone System 16 SC	16		\$1,395		\$1,885
3CX Phone System 32 SC	32		\$2,500		\$3,375
3CX Phone System 64 SC	64		\$4,995		\$6,745
3CX Phone System 128 SC	128		\$8,750		\$11,815
3CX Phone System 256 SC	256		\$14,995		\$20,245
3CX Phone System 512 SC	512		\$24,995		\$33,740
3CX Phone System 1024 SC	1024		\$43,750		\$59,065

on one of our PCs. It turns out the latest version of AVG AntiVirus created a conflict and kept the service from working properly. The issue was solved quickly by the company and resolved quickly on our end simply by disabling AVG.

Room for Improvement

We'd like to see a system that alerts the administrator that an account has been locked. Moreover, we disabled AVG when testing the system; in a perfect world, we would like to see the systems coexist. There are of course many antivirus products out there, but if you have already invested in AVG, you might want to be sure this is worked out.

On the bright side, you can always try before you buy simply through downloading the system for yourself and testing to see if there are any compatibility issues. This isn't as easily achieved when installing a hardware-based phone system, as you need to install the hardware first.

One final nit, it may make sense to have an initial screen informing the user of a web browser that his or her IP address has been blocked. There may be security reasons that keep the company from doing this, but it could frustrate new users.

Bottom Line

3CX Phone System worked as promised. It has a clean UI for users as well as administrators, and the softphone client apps worked very well, allowing users to communicate from anywhere and seem like they are in the office. Having access to an easy-to-use 64-line phone system that has the necessary features and already supports WebRTC for less than \$7,000 makes this product, in its various phone line configurations, a solid buy.

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Transbeam Expands to Meet the Growing Needs of Even the Largest of Enterprises

Transbeam Inc., traditionally viewed as a regional network provider, has upped its game – delivering more advanced network solutions, expanding its coverage area, carrier partnerships and service portfolio, and investing in more fiber. All of the above have better positioned the company to cater to the needs of even the largest enterprises and are fueling strong growth at Transbeam.

"In the last two to three years we have really enhanced our capabilities, and we want to get the word out that we have become a different company," says Marc Sellouk, CEO and founder of Transbeam. "We're ready for larger customers, and larger agents, to take another look at us."

Recognized earlier this year by Inc. magazine as one of the nation's fastest-growing private companies, Transbeam offers a broad array of data, voice and event connectivity, as well as professional IT services. These services run over Transbeam's own nationwide carrier-class IP network, which has points of presence in 11 major cities across the U.S.; can scale to 40/100gig; and for which the company provides active monitoring, reporting, and class of service. The company prides itself on its monitoring capabilities, on which it's invested millions to enable customer networks to be managed and monitored in real time.

Reaching customers via access loops that it sources from more than 30 carriers of various sizes, Transbeam this month added to that list in a big way with the addition **By Paula** of AT&T Switched Ethernet Service. Transbeam formed **Bernier** the partnership as part of the AT&T Partner Exchange Program. Switched Ethernet Service is the first product launch coming out of this partnership which fits into Transbeam's signature suite of Ethernet services that many other carriers, agents, and enterprises rely on. While Transbeam

had already been offering services in the 21 states in which AT&T is the incumbent local exchange carrier, having access to the ILEC's loops provides Transbeam and its customers with unmatched coverage.

The Transbeam data services portfolio includes broadband (DSL, NxT1, and T1), cloud services, data center services, Ethernet over copper, Ethernet over fiber, managed Wi-Fi, metro Ethernet over fiber, MPLS, and wireless. Event connectivity solutions from Transbeam leverage both wired and wireless connectivity, and include IT support for conferences, trade shows, and other large events. The company's portfolio of voice services includes hosted PBX,

> PRI, SIP trunking, E-POTS and even analog POTS lines. And its professional IT services include backup and recovery, internal wiring, managed IT help desk, provisioning and maintenance of servers and virtual machines, Wi-Fi installation, and more.

Transbeam continues to add to its portfolio. Earlier this year, for example, it rolled out a new backup service. When a company's primary link goes down, this

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Transbeam service automatically creates a private IP tunnel on Verizon's 4G LTE network and sends traffic through that until the primary link is restored.

"I go to a lot of customer meetings and most of them end with the customers being surprised that we do all these things," says Peter Karoczkai, senior vice president of sales and marketing at Transbeam. "Transbeam has expanded the network reach, the service offerings, and this is a new Transbeam that is going to be a major force in the industry."

As Transbeam expands its services and other capabilities, its customers continue to grow in number, size, and spend, adds Karoczkai. For example, he says, 50 hosted PBX seats used to be the norm for Transbeam customers, but now that's risen to the 100 to 300 seat range.

"Clients are willing to put their faith in the company because they understand that Transbeam is a financially solid and proven company in which they can have confidence in," states Avi Nebel, chief operating officer, who has been with Transbeam since 1998.

He adds that the firm is cash flow positive and profitable. Transbeam has also had consistent management from day one, he notes, explaining the same leadership that was in place when the company was established in 1996 is still at the helm today.

"Our growth is going to continue," Sellouk adds. "We are delivering a service level unparalleled in the industry, and I think that it resonates with the

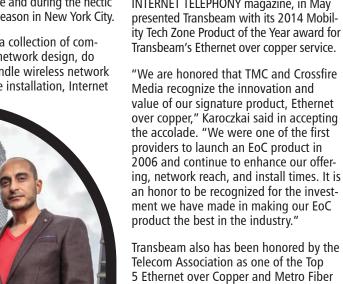
customers. We are winning more sophisticated customers that are leaving the larger carriers because they believe Transbeam can deliver a better solution."

Transbeam is able to do that, he says, because it brings together the expertise of a small IT boutique consulting firm with the IP network of a large carrier. That means Transbeam is flexible enough to create custom solutions and large enough to deliver nationwide managed data, voice, and cloud offerings.

"We are truly an engineering company that is able to provide tailored solutions around a customer's needs," says Karoczkai. "And unlike larger companies that create a solution set and then try to fit the customers into a particular network, we have a very flexible network design."

Transbeam's engagement with Post Acute Partners illustrates how the end-to-end service provider can deliver for its customers. The growing multi-division health care company, which has a complex IT infrastructure, wanted to incorporate new data and voice services to meet its expanding needs, which included the addition of new office space. The client's specific requirements entailed ensuring that the new solution was able to house all of its highly confidential customer files securely, and it wanted to implement the solution in a very short timeframe and during the hectic December holiday season in New York City.

Rather than hiring a collection of companies to address network design, do consulting, and handle wireless network engineering, phone installation, Internet



Noting Transbeam as a trusted and proven provider of EoC and metro fiber, the Telecom Association's Executive Director Dan Baldwin commented: "Our association members are heavily experienced technology industry consultants and channel sales partners that have compared all the best and affordable vendors and recommended the top advisors."

providers in the industry.

connectivity, and project management, Post Acute Partners called on Transbeam. It

Corporate

Profile

consulted with Post Acute Partners to determine the client's technology needs now and for the future, and Transbeam then designed and installed a network that met the customer's technical and business requirements, and that will scale as needed, and it helped Post Acute Partner migrate to the new environment.

"Transbeam was instrumental in helping us move our network infrastructure for our New York City headquarters that supported four of our key divisions of our health care company," said Warren Cole, co-CEO of Post Acute Partners. "It completed this large task during the peak of the holiday season within a very short deadline date. It not only managed the entire process seamlessly, but was very careful with details and understanding our technology needs to help us build out our network, thinking about our future needs. Transbeam was highly reliable, and we would not trust anyone else with our network going forward."

Industry groups have also recognized Transbeam for the unique solutions it brings to the marketplace.

For example, TMC, the parent company of INTERNET TELEPHONY magazine, in May presented Transbeam with its 2014 Mobility Tech Zone Product of the Year award for Transbeam's Ethernet over copper service.

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Roundup

By Paula Bernier

Wireless LAN

obile devices and applications continue to proliferate in enterprise networks, and wireless LANs continue to expand to serve them. A recent survey by Infonetics revealed that companies plan to increase the number of access points in their wireless networks by about 19 percent per year over the next 2 years.

"Not only are companies upgrading and expanding coverage to accommodate their growing needs," says Matthias Machowinski, directing analyst for enterprise networks and video at Infonetics Research, "they're also rethinking their approach to network operations and are looking to unify network silos and implement more flexible management approaches."

Here's a roundup of some of the companies delivering solutions on the WLAN front.

ADTRAN

www.adtran.com **ADTRAN Bluesocket** virtual Wireless LAN is a cloudbased, virtualized management and control solution for WLANs, eliminating 100 percent of the physical, hardwarebased controllers from the network. It is ideally suited to meet the growing BYOD need by eliminating the scale limitations of the controller-based architecture.



ADTRAN vWLAN makes it possible to easily manage the wireless network from any device, with management and control of access points across multiple buildings, the corporate campus, or across any geographic location worldwide. The solution provides wired-equivalent performance to wireless users with seamless roaming and enterprise-class security and policy management. ADTRAN ProCloud Wi-Fi – a no-worry managed, business-class Wi-Fi service – is built on ADTRAN Bluesocket vWLAN. It includes proactive 7x24 monitoring, help desk service, advanced equipment replacement, support for moves/adds/changes, and monthly reports. It offers the freedom to migrate across public and private cloud management models. ADTRAN ProCloud is available as a turnkey option, or service providers and resellers can quickly and easily resell ADTRAN branded or private label services.

Aerohive

www.aerohive.com

Aerohive unleashes the power of enterprise mobility, simplifying networking by reducing the cost and complexity of distributed enterprise deployments with cloud-enabled networking solutions. The company's technology enables organizations of all sizes to use mobility to increase productivity, engage customers and grow their business. These solutions, based on Aerohive's unique distributed intelligence architecture, include enterprise-class Wi-Fi access points, state-of-the-art gigabit switches, and easy-to-deploy routers. Deployed in more than 17,000 customers worldwide, Aerohive's proprietary mobility platform takes advantage of the cloud and a distributed architecture to deliver scalable, simplified, secure, and cost-effective networks. Aerohive was founded in 2006 and is headquartered in Sunnyvale, Calif.

Alcatel-Lucent Enterprise **v** www.alcatel-lucent.com/enterprise



A comprehensive portfolio with 802.11n/ac technology from Alcatel-Lucent Enterprise consists of next generation wireless LAN technology with the choice of controller-based and controller-less WLAN products, offering flexible deployment options meeting various scale, cost, and use case requirements. Alcatel-Lucent OmniAcccess Access Points have built-in multimode capabilities where the same AP can be deployed in instant mode without the need for a controller, or it can be managed by a OmniAccess controller depending on customer deployment scenario. With zero-touch provisioning capabilities of remote access point mode, customers can easily create a secured home or branch office network in minutes. The wireless LAN controllers offer an excellent price/performance ratio with integrated security and application intelligence. These controllers have built-in network analytics that provide complete application visibility and control.

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Aruba Networks Inc. www.arubanetworks.com

Aruba Mobility-Defined Networks empower IT departments and #GenMobile, a new generation of tech-savvy users who rely on their mobile devices for every aspect of work and personal communications. To create a mobility experience that #Gen-Mobile and IT can rely upon, Aruba Mobility-Defined Networks automate infrastructure-wide performance optimization and trigger security actions that used to require manual IT intervention. The results are dramatically improved productivity and lower operational costs. The Aruba portfolio includes a full set of wireless LAN controllers and 802.11ac access points, Aruba Instant controller-less access points, the AirWave Network Management System, the ClearPass Access Management System, and Aruba Mobile Engagement solution.

AVAYA **v** www.avaya.com



The Avaya Wireless LAN 9100 Series (introduced June 2014) is a next generation, application-first wireless solution tailored to today's mobile environment. Offering application-level visibility and control for more than 1300 applications, it help ensure wireless networks deliver uncompromised access to the applications and services users value most. The solution supports the latest 802.11ac WLAN industry standard and offers an integrated, two-tier architecture that reduces equipment requirements and costs. The extension of Avaya's Fabric technology (which powered the 2014 Sochi Olympics) to the wireless access point reduces the burden on IT administrators, making implementation, provisioning, and ongoing changes to wireless networks fast, easy, and error-proof.

D-Link Systems Inc. www.dlink.com

D-Link Systems has several enterprise WLAN offerings, including Unified Wireless controllers and access points designed specifically for business environments. The recently announced DWL-8610AP Unified Wireless concurrent dual band 802.11ac access point combines cutting edge wireless speeds of 802.11ac with the unparalleled flexibility and scalability of D-Link's Unified Wireless Solution. The DWL-8610AP is designed to support enterprise environments by providing network administrators with secure and manageable dual-band wireless network options. It supports maximum wireless signal rates of up to 450mbps over the 2.4gHz band, and 1300mbps over the 5gHz band. The DWL-8610AP can be flexibly deployed as an autonomously managed, standalone wireless access point, or as a centrally managed access point controlled by a D-Link Unified Wireless Switch or Wireless Controller. Businesses can start with standalone mode deployment, and then migrate to a centrally managed system anytime later. It supports impressive device densities and offers optimal range and coverage over both bands. The DWL-8610AP is easy to install and can be powered using the included AC to DC adapter, or directly through the network cable using Power over Ethernet from any switch or midspan injector that supports IEEE 802.3at.

Extreme Networks **v** www.extremenetworks.com

As user demands of mobile connectivity continue to increase. Wi-Fi networks must evolve to address higher capacity and scale as traffic grows. Extreme Networks' IdentiFi Wireless delivers a user experience at unmatched scale and density - addressing both indoor and outdoor wireless connectivity. As proven in the most demanding venues, IdentiFi delivers more applications and throughput to users with fewer access



points. IdentiFi is simple to deploy – the access points (APs) can configure and initialize themselves from a centralized appliance and can run independently of the appliance once configured. IdentiFi supports both centralized and distributed networks and is a standalone solution that can be installed into any network. In addition to simplicity, IdentiFi is fast – it's optimized to meet the high expectations of BYOD and mobile users. Finally, IdentiFi

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Roundup

is smart – its system architecture is the most advanced and flexible solution on the market today. IdentiFi is currently deployed in a diversity of environments, ranging from NFL stadiums to hospitals, K-12 schools and universities.

Meru Networks **v** www.merunetworks.com



Meru Collaborator is a Microsoft Lync software-defined networking application that ensures a predictable, multi-vendor, unified communication experience. It enables Meru Wi-Fi users to optimize the performance and experience of Microsoft Lync over multivendor networks. The solution is built on top of an OpenDaylight SDN controller designed to work with any Open-Flow-enabled wired or wireless network and greatly simplifies the cost and complexity of managing unified communications. Meru Collaborator empowers IT organizations to become more responsive to the needs of the business and ensure the highest quality experiences for their users.

Ruckus Wireless Inc. www.ruckuswireless.com

Ruckus Wireless is a global supplier of advanced wireless systems for the rapidly expanding mobile Internet infrastructure market. The



company offers a wide range of indoor and outdoor Smart Wi-Fi products to mobile carriers, broadband service providers, and corporate enterprises, and has more than 40,000 end customers worldwide. Ruckus technology addresses Wi-Fi capacity and coverage challenges caused by the ever-increasing amount of traffic on wireless networks due to accelerated adoption of mobile devices such as smartphones and tablets. Ruckus invented and has patented state-of-the-art wireless voice, video, and data technology innovations, such as adaptive antenna arrays that extend signal range, increase client data rates, and avoid interference, providing consistent and reliable distribution of delay-sensitive multimedia content and services over standard 802.11 Wi-Fi. Ruckus on-premises enterprise WLAN products include Ruckus ZoneFlex indoor and outdoor access points, and Ruckus ZoneDirector controllers. Ruckus also offers Wi-Fi in the cloud with its Smart Access Management service, SAMs.

Xirrus **V** www.xirrus.com



Xirrus delivers a broad portfolio of Wi-Fi solutions to meet needs of the smallest offices to the largest sports venues. Xirrus XR Access Points are designed for office spaces, classrooms, hotel rooms, and similar areas with low-to-medium density requirements. The XR-520 AP supports 300mbps 802.11n Wi-Fi and XR-600 series APs support up to 1.3gbps 802.11ac. Xirrus XR Multi-Radio APs deliver superior scale and capacity for mediumto-high density requirements by integrating two to 16 modular radios, high gain directional antennas, and a controller into a single device. Xirrus Multi-Radio APs support 1.3gbps 802.11ac and are technology upgradable via modular radio interfaces to 802.11ac Wave 2 when it becomes available, eliminating the need to rip and replace hardware to upgrade. All Xirrus APs and Multi-Radio APs operate software definable radios, enabling adaptable reconfiguration to match changing client types. All incorporate integrated application-level visibility and control to ensure consistent wireless performance for critical applications. The Xirrus Management System provides a powerful. flexible platform to manage the wireless network with complete monitoring, security, and configuration functionality. Both cloudbased and on-premises options are available and both support zero-touch provisioning for fast deployment.

Note: We do our best to include as many of the players in a given Roundup as possible. But this exercise does rely on the companies listed submitting entries, so this is not intended as a comprehensive list of market players, but rather as a sampling of what's available in the category. Check out our editorial calendar to see what categories will be featured in future issues, in case your company would like to submit a listing for an issue in the year ahead. There is no cost for a listing.

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Cloud & Data Center Briefs

HP Calls It Splits

Hewlett-Packard has decided to split itself into two separate publically traded companies. One will be Hewlett-Packard Enterprise. Its portfolio will include servers, storage, networking, converged systems, services and software as well as its OpenStack Helion cloud platform. HP CEO Meg Whitman will be president and CEO of Hewlett-Packard Enterprise, and enterprise industry veteran and HP Lead Independent board member Pat Russo to be chairman of the Hewlett-Packard Enterprise Board. HP Inc., meanwhile, will house the personal systems and printing offerings of the current company.

TIA: Cloud to Continue Rise

Cloud computing will be one of the fastest-growing segments in telecommunications through at least 2017, according to the Cloud Computing & Data Centers Report recently issued by the Telecommunications Industry Association. The report predicts a nearly 50 percent increase in spending on cloud services and data center construction over the next four years. Business and consumer spending on cloud computing will increase from nearly \$67.8 billion this year to \$107 billion in 2017, while spending on data center construction will rise 26 percent, from \$23.5 billion in 2014 to \$29.7 billion in 2017, the report indicates.

CPLANE Supports SDN Across Data Centers

CPLANE Networks has commercially launched its Dynamic Virtual Networks Interconnect product for wide area networks. This software-defined networking software, which is based on OpenStack, leverages the company's SDN Controller to enable the creation of Layer 2 and 3 VPNs over MPLS. That way, data center operations can connect applications spanning multiple data centers. DVNI also allows for automatic discovery; label-switched path traffic optimization planning, modeling and analysis for fast reroutes and alternate paths; policy-based management for overbooking, security, and QoS; and resource-based admission control and traffic shaping.

IDC Offers SDS Forecast

Sales of software-defined storage platforms grew more than 15 percent in the second quarter of this year, according to IDC.

Amazon, AT&T Partner

Amazon and AT&T are joining forces to provide a more secure cloud for businesses by extending AT&T NetBond to Amazon Web Services. AT&T NetBond enables customers to extend their VPN to leading cloud providers. With the addition of Amazon Web Services, AT&T now offers a secure connection to nearly every major cloud provider including: IBM, CSC, Microsoft, Equinix, Salesforce, HP, Box, VMWare, and now Amazon Web Services.

Cisco Unleashes Information Server 7.0

Cisco recently came out with its Information Server 7.0 data virtualization offering. This new release extends data virtualization to new audiences, enables larger, more-complex deployments, and integrates more data sources. It leverages business intelligence tools such as Qliktech, Spotfire and Tableau. Its Deployment Manager automates the transfer views, data services, caches, policies and more across multiple CIS 7 instances. And it includes an SDK to accelerate data adapter development.

Ericsson Takes Apcera Stake

Ericsson has agreed to acquire a majority stake in Apcera, a U.S.-based enterprise services company that sells the Continuum platform-as-a-service solution. Jason Hoffman, vice president and head of product line cloud software at Ericsson, commented: "To realize the full potential, cloud environments need security and governance, which our partnership with Guardtime and our acquisition of a majority stake in Apcera provides. With these technologies in place, enterprises and individuals can trust the integrity and the confidentiality of their infrastructure."

Red Hat Ups Its Software-Defined Storage Game

Red Hat has released version 3 of its software-defined storage solution. Called Red Hat Storage 3, the offering is able to support multiple petabytes of data, which is more than three times that of the previous iteration. It works on up to 60 drivers per server, vs. the previous version that topped out at 36, and 128 servers per cluster, as compared to the previous 64. Storage 3 also enables granular control of storage environments, offering cluster monitoring that leverages Nagios and SNMP standard frameworks, and providing volume snapshots for point-in-time copy of critical data. Apache Hadoop workloads can run on Red Hat Storage 3, which has support for a Hadoop File System Plug-in. Ecosystem partners for this Red Hat solution include such companies as Cisco, Function1, HP, International Integrated Solutions Ltd. Red Hat Inc. in April revealed its plans to acquire two-year-old scalable open source storage systems provider Inktank for \$175 million in cash.

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Making Websites Pay Off U.S. Green Building Council is One Example of

tartup AnswerDash recently moved out of beta with a solution that aims to drive sales, lower customer support costs, and deliver analytics related to organizations' websites. It does that by making answers to website visitors' questions more easily accessible, and enables those websites to improve over time by capturing the questions visitors have asked in the past and presenting them with the answers where they need them on the site.

The company, which comes out of the University of Washington Information School, today also announced that the U.S. Green Building Council is leveraging AnswerDash.

"With the help of AnswerDash, customers visiting the USGBC site will find answers at the ready, ensuring that all of their questions about energy efficient and socially

AnswerDash allows clients to easily add questions that have been asked by website visitors over time and the answers to those questions. responsible building are answered quickly and easily," says Answer-Dash CEO Jake Wobbrock. "Results thus far show that nearly all site visitors get helpful answers, stay on the site longer, and view more pages with Answer-Dash. In fact, about six times as many visitors get help from Answer-Dash than conventional

solutions like FAQs, knowledgebases, or live chat, and AnswerDash works alongside these solutions to make them even better."

As we all know, when a person is trying to do something on a website – such as complete a purchase, fill out a form, make a payment, or whatever else – and

he or she runs into a roadblock, it is often difficult to find the needed guidance to answer the question at hand and complete the task. Rather than sending website visitors off on a wild goose chase to find answers by, for example, reading a FAQ page, or inputting a question in the site's search box, and then requiring them to scroll through and read results in hopes of an answer, AnswerDash provides an easily visible tab website visitors can click on to reveal answers that are relevant to a particular part of a website when they mouse over it. That way, visitors don't have to leave the page to find the answer they're looking for. Clients that integrate AnswerDash into their websites can opt to include rich media, such as images or videos, as well as text, in their answers.

A small number of questions tend to comprise a large number of questions people ask, says Wobbrock, referring to the 80/20 rule, so most can self serve. If website visitors don't find what they are looking for on an AnswerDash-enabled site, however, the cloud-based service lets them initiate a live chat, send an e-mail, or make a phone call for further information.

As noted earlier, AnswerDash allows clients to easily add questions that have been asked by website visitors over time and the answers to those questions. And when they do, visitors can see those questions and answers so they don't necessarily have to repeat duplicate questions themselves, which is an especially nice feature if you're on a mobile device.

Organizations can see incoming questions, add or tweak answers, and view website statics – such as where website visitors are clicking, usage of different tabs, cus-

How Websites Can Be Improved Upon

tomer support savings realized, and more – via the AnswerDash dashboard.

And integrating AnswerDash with existing websites is easy, says Wobbrock, explaining it only entails inserting a line of JavaScript to the top of each page, and seeding the platform with a few questions and answers (and customer questions will help populate it further over time). A wizard guides users through the process. The whole thing can be launched in 20 minutes, says Wobbrock, adding that because AnswerDash is hosted on AWS, no on-site installation is required.

Various companies are working on a number of fronts to make visitors' website

experiences more pleasant, and to enable businesses to make the most of their experiences with customers both on their websites and beyond.

In yet another example on this front, a company called OptifiNow recently integrated its sales optimization platform with Cisco's business phone system. As a result, OptifiNow President John McGee explains, sales reps can reach out to consumers within seconds of their submitting a website request for more information on a particular product or service. That's important, he said, given studies show that the first company to contact a consumer about a stated need has an almost 70 percent higher chance of the closing the deal than do those that reach out to the consumer at a later time.

Many users of the OptifiNow sales optimization platform, which includes both CRM and lead management functionality, are already users of Cisco phone systems, McGee said, so it made perfect sense to do this integration. He adds OptifiNow already has integration with phone solutions from a variety of companies, also including 8x8, Asterisk, Avaya, Five9, Vocalocity, and Vonage.

As a result, he explains, as the OptifiNow platform routes leads and related information to sales reps or teams, the phone system can begin dialing the customers.



Amdocs Intros NFV Orchestrator, Aligns

e've long been hearing from telecom equipment and software companies about the need for facilities-based service providers to better monetize their assets.

Telco operational support system company Telcordia was a big proponent of this messaging early on, even before its acquisition by Ericsson. And now many of the infrastructure equipment and software providers – both new and old – are reiterating this message, and talking about how the rise of network functions virtualization and software-defined networking will make telco networks more agile and efficient.

Amdocs is among the well-known software suppliers spreading this message. The company, a \$3.3 billion outfit best known for its leadership position in the telco billing space, recently launched a new solution and enhanced an existing one that aim to help service providers move from the physical world of networking to a more software-centric one that will enable carriers to expedite the delivery of services that better meet the needs of specific applications and users. New from the company is the Amdocs Network Cloud Service Orchestrator. An orchestrator does OSS coordination of network elements, and can act as a central source to collect, analyze, and act on data received from network elements, which can be from different vendors.

Ruth Zamir, who's in charge of Amdocs NFV product marketing, says what's noteworthy about this particular orchestrator is that it is catalog driven, and has already been proven as having an open/vendor-agnostic approach to NFV orchestration. The catalog part seems especially intriguing, as it leverages the company's existing product catalog and fulfillment assets so network operators have immediate access to reusable building blocks to enable them to easily create new service definitions and link those definitions to their business processes and networks.

Another important differentiator of the Amdocs Network Cloud Service Orchestrator, Zamir adds, is its ability to do continuous assurance and fulfillment, meaning Amdocs is constantly evaluating the status of the network to ensure all the necessary pieces are in place across the network's virtual and physical infrastructure to support a service as necessary. This speaks to the dynamic nature

Change is a Constant at Three

hings just keep getting more interesting for the routing and switch vendors as they continue their move to capture market share in the new software-centric, virtualized world. That seems to be especially accurate for Brocade, HP, and Juniper Networks, which are neck-and-neck for second place in the enterprise networking and communication market.

Brocade

At the moment, Brocade ranks No. 2 in the enterprise network and communications space, according to Infonetics Research data released in July. And the company continues to draw interest – and a fair amount of talent – in the hot new NFV and SDN arenas.

Just last month Brocade revealed that Kevin Shatzka-

mer, a veteran of Cisco (the No. 1 player in the enterprise network and communications space), has come aboard as a distinguished engineer and CTO of mobile networking. Shatzkamer has more than 50 mobile networking patents granted or issued, co-convened the Open Web Alliance, and has authored a couple of networking books. Shatzkamer recently noted that Brocade is "aggressively seeking to disrupt the networking industry" and has done some important acquisitions and "assembled a highcaliber team to do just that."

Indeed. Brocade's other recent notable hires include those of Colin Dixon, Tom Nadeau, and Benson Schliesser. In May, former IBMer Dixon joined Brocade as principal engineer. Now a Brocade distinguished engineer, former Juniper employee Nadeau is a leader of the OpenDaylight Project and OpenStack initiatives, and an active member of the Internet Engineering Task Force. And Schliesser, who is a veteran of both Cisco Systems and Juniper Networks, also now serves as a

Brocade distinguished engineer. In September Brocade, which bought Vyatta a couple years back, unveiled its OpenDaylight-based SDN controller. In addition to its efforts on the enterprise front, Brocade has been working closely on NFV and SDN with some of the world's leading service providers, including Telcordia.

Juniper

Things have been pretty interesting lately at Juniper Networks, an early entrant to the NFV and SDN space via its Contrail acquisition, as well.

Not only has the company's approach to NFV and SDN reportedly created discord within

Policy Solution with ETSI Work

of networking, particularly in the new softwarecentric and virtualized world the carriers are moving toward.

Virtualized enterprise connectivity and security services, IMS core and enterprise voice services, and core mobile network services are among the use cases for its orchestrator that Amdocs already has demonstrated with its ecosystem of partners. Juniper Networks is an Amdocs ecosystem partner for this first use case. Metaswitch and Tropo are among its ecosystem partners for the second. And Connectem is an Amdocs ecosystem partner for the vEPC use case. Other Amdocs NFV ecosystem/integration partners include Dell, HP, IBM, and Red Hat.

While Amdocs didn't offer specifics on what service providers were using which applications, the company did note that AT&T previously announced Amdocs as one of the suppliers for its Domain 2.0 effort.

What's noteworthy about this particular orchestrator is that it is catalog driven, which means it can leverage the company's existing product catalog and fulfillment assets so network operators have immediate access to reusable building blocks to enable them to easily create new service definitions and link those definitions to their business processes and networks..

By Paula Bernier

Amdocs news also included the enhancement of an existing product. That product is the company's PCRF, or Policy Controller. The company virtualized this PCRF more than a year and a half ago, and now it's aligned the product with ETSI work, made it orchestration ready, and is promoting its templatedriven approach to service definition and its scalability.

Ann Hatchell, director of marketing and strategy for the Amdocs data experience business unit, which was created three years ago following the Bridgewater Systems acquisition,

explains that service providers can take virtualized slices of the PCRF and apply instances to different things like advanced LTE, policy per enterprise customer, public safety, or whatever. This lets network operators dedicate specific policy to each customer or application, meaning more granular control of the end user experience.

Leading Infrastructure Suppliers

its engineering ranks, but early last month Juniper's CEO Shaygan Kheradpir resigned unexpectedly after being asked to leave for "his conduct in connection with a particular negotiation with a customer."

Kheradpir, who joined Juniper in January from Barclays PLC, has been replaced by Juniper veteran Rami Rahim, the former executive vice president and general manager of Juniper Development and Innovation. Juniper leadership has reportedly been pressured by a couple of its large investors to lower costs and sell or spin off some of its businesses in an effort to boost its long lagging stock price, so Rahim will have to contend with that.

Meanwhile, Juniper continues to move forward with its NFV and SDN strategy. The latest addition on this front to its portfolio is the vMX 3D Universal Edge Router, a software-only solution version of its flagship product that can run on industrystandard x86 servers. The company last month also unveiled Contrail Cloud, an OpenStack-based software platform for cloud resource orchestration that addresses compute, network, storage, and virtualization. It was designed to enable service providers to expedite the turn up of OpenStack data center platforms and quickly drop applications from Juniper and others into those data centers.

HP

Speaking of spin offs, that's the strategy at HP, which recently announced it is breaking in two.

The half that'll be a player in the NFV and SDN space is called Hewlett-Packard Enterprise. It will sell the company's OpenStack Helion cloud platform, networking, servers, storage, and services and software.

HP is working closely with companies including 6Wind and Intel, which are leaders in DPDK, a technology that can improve packet-processing performance by multiples (up to 10 times, according to Intel). And just last month HP formally announced a partnership with Wind River. By Paula Bernier

The companies are working together to develop solutions with HP Helion OpenStack technology to enable carriergrade NFV capabilities. Key areas of focus for this effort include manageability, performance, and reliability.

The company offers an array of blade, rack-mount and workload optimized (Moonshot) servers for demanding applications in enterprise and carrier networks. That includes hypervisors and operating systems; an Open-NFV Reference Architecture platform; and what HP calls the industry's leading NFV, SDN and OpenStack platform. The company also has created a growing ecosystem of infrastructure partners.

Midokura Open

Cloud Orchestrator Network State Database Intelligent Edge Existing Physical Network Unix Kernel Unix Kernel Unix Kernel Unix Kernel

he networking part of the OpenStack ecosystem remains fragmented and needs someone to step up and bring things together, according to Midokura. So the four-year-old network virtualization company is open sourcing its MidoNet technology.

"We want to solidify and unify the networking community around OpenStack with this solution," Dan Conde, Midokura's director of products, said.

MidoNet, he said, is a stable, scalable, easy to deploy, and fully open virtual networking solution on which anyone can innovate. It leverages an Apache 2 license, which is used under OpenStack; can run on any hardware; and functions well in production environments, he added. And the open sourced MidoNet is provided by Midokura, a company that has long been aligned and involved with the OpenStack ecosystem and the open source community,Conde said.

Juniper Networks is the only company that offers a solution that is comparable, he added. But Conde said that Juniper has not done a good job of being an open source partner because it's difficult to get and download what Juniper

Progress Software to Buy

gility, infusing applications with real-time communications functionality, and mobility are three key trends of today. Addressing all of the above, Progress Software Corp. is moving to acquire Telerik AD for \$262.5 million. The deal is expected to close this month.

This deal comes on the heels of Progress Software's acquisition of BravePoint Inc., an application development, consulting, and training firm out of Georgia that Progress announced the acquisition of earlier this year.

As for Telerik, it's a privately held company that offers development tools used for the creation of applications for the cloud, the desktop, mobile environments, and the web. That includes DevCraft, which offers .NE UI controls, reporting and developer productivity tools; Fiddler, a free web debugging proxy; Kendo UI, an HTML5 tool; Sitefinity, a web content management and customer analytics tool for managing digital experiences; Telerik Platform, which is used to build mobile apps using JavaScript for Android, iOS, and Windows Phone; and Test Studio, a GUI test automation solution.

Telerik, whose tools are used by more than 1.4 million developers at more than 130,000 customers, generated more than \$60 million in revenue in the last 12 months and has seen its annual booking growth more than 20 percent. It will retain the Telerik brand following the acquisition.

Progress Software, listed as a Visionary in Gartner's Magic Quadrant for Enterprise Application Platform-as-a-Service, specializes in the development, deployment, integration, and management of business applica-

Sources MidoNet

offers; the company has an important incentive to steer customers toward using its own hardware; and Juniper's Contrail is more of a Layer 2 system, so it's misaligned with the OpenStack Networking Neutron API.

"So we want to avoid that mistake," Conde said.

Midokura is open sourcing Layer 2 switching; Layer 3 routing; Layer 4 services like firewall, load balancing, and NAT; and providing the ecosystem with a CLI; docs, deployment tools, automated testing infrastructure, and packages; OpenStack integration; a QuickStart environment; and a RESTFUL API. The source code is available at github.com/ midnet and the community site is live at midonet.org. Already, 8x8, Bit-isle, Canonical, Eucalyptus, Fujitsu, IDC Frontier, KVH, Mellanox Technologies, Mirantis, NIMBOXX, Red Hat, Solinea, Stratoscale, suse, and zetta.io have lined up behind the effort.

"By using MidoNet you can choose a system that is open, and use an API that is common along many platforms," Conde said, adding that other APIs can be islands.

Now that's Midokura has made MidoNet open source, the company will rely on the MidoNet Manager, professional services including implementation assistance and performance tuning, support, and third-party certification and monitoring integration as its sources of income, said Conde, who compared the model to what Cloudera and Red Hat do. By Paula Bernier

Midokura enterprise MidoNet is priced at \$1,899 per host per year. That includes a one-year annual software and support subscriptions, MidoNet Manager, and database clusters. The company also offers a Quickstart Bundle for \$10,000, which has five hosted installed, and includes six month software and support subscriptions, as well as three days of professional services.

Juniper Networks a year ago in September announced the availability of Contrail through an open source license. Contrail, which is compatible with CloudStack and OpenStackplatforms, includes an analytics engine, SDN controller, and vRouter and is integrated with Juniper's Firefly Perimeter virtual firewall, the company said at the time.

Development Tool Firm Telerik

By Paula Bernier

tions. Its solutions are used by 140,000 customers, including 90 percent of the Fortune 500.

"User experience is defining the way application software is being selected. Telerik's strength is in helping developers create elegant, custom user interfaces for their cloud, web-based and on-premise applications," said Phil Pead, Progress CEO. "Building applications today is truly complex. Developers also must deal with security, scaling, massive amounts of data and the ability to deploy on a large number of different devices. Together, Progress and Telerik can help to solve these issues so that

"Telerik's strength is in helping developers create elegant, custom user interfaces for their cloud, web-based and on-premise applications." Progress CEO Phil Pead.

developers can focus on building software that solves business problems."

In a May press release announcing a new release of Progress Easyl, John Goodson, chief product officer at Progress, noted: "The number of applications that businesses rely on for their decision making is exploding. Whether it's sales data, customer lists or lead flows, organizations of all sizes have multiple, ever-changing data sources they need to consolidate, analyze and report on in order to make the best decisions."

Unified Communications

Panasonic Discusses How HD Voice Reinforces the Value of VoIP

here's no question that voice over IP has come a long way in terms of adoption and quality, but

Kim Murtagh, senior product manager for Panasonic Business Telephone Systems, says VoIP still suffers from a reputation problem with many people in the general population who believe the technology is risky and doesn't deliver the availability and quality that the PSTN does. However, HD voice, she says, can go a long way toward debunking that misconception.

"It's our belief that HD voice is more of a standard than a novelty," Murtagh adds, "and it's really the future, and it's just going to grow from there."

Panasonic is among the companies making sure that happens, offering support for the G.722 HD voice codec in all its

BY PAULA BERNIER

products. That includes Panasonic's KX-UTG200B and KX-UTG300B SIP phones, which feature high-definition, wide-band voice in the handset, headset, and full duplex speaker phone.

Assuming G.722 is supported by endpoints at both ends of a call and the network in between, callers experience a "crystal clear" audio experience, during which it sounds as though the other person is right next to them, says Murtagh. But here's the rub: Even if one or both of the endpoints are G.722-capable, if any part of the connection between them (like the access link to the hosted PBX service) doesn't support G.722, the call defaults to standard definition. The good news, says Murtagh, is that the telecommunications industry is aware of and working on this issue, and that for those businesses using MPLS – which segments out voice – this is a non issue.

HD voice is the wave of the future, and VoIP is here to stay, Murtagh adds, noting that the U.S. government and key telecom stakeholders are putting in place new rules to move away from the old technology of the PSTN and toward broadband networks and services.

MP3 Inventor Fraunhofer Talks HD Voice

raunhofer is a diverse organization with about 23,000 employees catering to applied research and development. The not-for-profit organization is divided into 66 institutes, one of which is IIS – best known for the invention of mp3. INTERNET TELEPHONY recently interviewed HP Baumeister, director at Fraunhofer USA, Digital Media Technologies, to learn what the company is up to in the HD voice realm.

What is Fraunhofer doing related to HD voice?

Quite a bit. But let me first clarify the term HD voice a

bit. It refers to audio up to 7kHz bandwidth, which is less than half of the frequencies human hearing can cover. Just about all audio services such as streaming audio (with or without video), media downloads, broadcast services, DVDs/BD, etc., today offer CD-like quality, covering the full audio spectrum. We believe that communications should be no exception, and thus developed low latency versions of AAC (which can be seen as a second generation codec following mp3), providing the full audio bandwidth. We actually coined the term full-HD voice to help differentiate this much better quality.

INTERNET TELEPHONY Recognizes Lync Pioneers

icrosoft Lync has made its mark as an enterprise-ready unified communications platform that connects people everywhere, across devices, as part of their everyday productivity experience. This solution is notable not only for its broad functionality and adoption, but also for the ecosystem that supports it.

To highlight that ecosystem, INTERNET TELEPHONY and its parent company, TMC, has created an awards program to recognize Lync pioneers. The winners are below.

Company	Website	Product
Alteva	www.alteva.com	Integrated Hosted Microsoft Lync
AudioCodes	www.audiocodes.com	AudioCodes One Box 365
CallTower	www.calltower.com	CallTower Complete for Lync
Enghouse Interactive	www.enghouseinteractive.com	Enghouse Interactive Solutions Portfolio
Grandstream Networks Inc.	www.grandstream.com	GXV32xx IP Video Phones for Android
ISI Telemanagement Solutions Inc.	www.isi-info.com	Collaboration Reporting & Recording
MTS	www.mtsint.com	TEM Suite
Nectar Services Corp.	www.nectarcorp.com	Nectar's Unified Communications Diagnostics Module (UCD)
Polycom	http://www.polycom.com	Polycom CX5100
RedSky Technologies	www.redskye911.com	E911 Manager & E911 Anywhere
SimpleSignal Inc.	www.simplesignal.com	SimpleSignal Lync Integration
Sonus Networks	www.sonus.net	Sonus Session Border Controller Portfolio
Unify Square	www.unifysquare.com	PowerSat
Unisys Corp.	www.unisys.com	Ensemble Unified Communications

BY PAULA BERNIER

Who's using HD voice and how?

AAC-LD is used in practically all telepresence and videoconferencing systems, while AAC-ELD is the codec used in Apple's Face-Time service. In addition, AAC-ELD is now native in iOS, Mac OS and Android, and it is fair to say it is the most widely deployed super-wideband codec fulfilling the full-HD voice definition.

How exactly does this kind of HD voice compare with what we're used to today?

Check out www.full-hd-voice.com, where we have audio clips to illustrate the performance of AAC-ELD, and compare it to

narrowband and wideband codecs.

What's next for HD voice?

Fraunhofer has been a key contributor to the next generation codec to be used in mobile telephony called Enhanced Voice Service. This codec was developed specifically for VoLTE services, which are clearly the future of mobile voice. EVS provides very high audio quality — at the full-HD voice level and even higher — at very low bit rates. EVS is now a 3GPP standard, and we can look forward to getting full-HD voice quality when making cell phone calls, quite possibly as early as a year from now.

Unified Communications

LINN Energy Taps AudioCodes

LINN Energy, a top 15 publicly traded energy production company, is among the latest companies in its sector to embrace Microsoft Lync, an enterprise unified communications platform with a single experience for IM, presence, video, and voice. The organization called on AudioCodes to secure, support, and get this implementation up and running. The deployment involves the use of AudioCodes Mediant 1000B survivable branch appliances, which LINN Energy is employing and should soon have operational for its 45 branches. The AudioCodes SBAs allowed the company to implement survivability and enhanced network security without deploying additional servers. Mario Martinez, LINN Energy network engineering manager, explains that survivability was an important requirement for the company, noting it needs to be able to access emergency services at all times, so is using an analog backup - facilitated by the SBAs in case the primary systems go down.

Research Firms Make VoLTE Forecasts

The global voice over LTE market should see explosive growth over the next few years, with the number of connections growing to 900 million, a CAGR of over 140 percent, according to global research company TechNavio. Meanwhile, Infonetics Research expects the number of VoLTE subscriptions to increase 17-fold from its 2013 level of eight million to 138 million in 2017. And ABI Research predicts that the number of VoLTE subscribers will grow from 59.6 million this year to 1.2 billion in 2019.

MarketsandMarkets Talks UC

The mobile unified communications and collaboration market is expected to grow to \$17.38 billion by 2019, according to a recent report by MarketsandMarkets. That's a compound annual growth rate of 27.5 percent from 2014.

Zultys Launches Cloud Services

IP phone systems and unified communications solutions provider Zultys has come out with Zultys Cloud Services. The cloud-based IP phone system, unified communications solution, and contact center and SIP trunk services is based on the company's enterprise-class MX series of IP phone systems. "When selecting a business phone system, one size doesn't fit all," said Neil Lichtman, CEO of Zultys. "It's about finding the right fit so you can focus on running your business, not worrying about your phone system. Many cloud phone systems are designed for the very small office/home office market and lack true comprehensive business functionality. Many don't offer you the flexibility of either having it on your premises or in the cloud with the same exact user experience. Zultys hosted solutions are built upon over a decade of delivering powerful enterprise-class communications capabilities to thousands of organizations throughout the world."

Patton Targets SMBs with SNOGA

Patton Electronics is now taking orders for the new SmartNode Open Gateway Appliance that offers customized, IP-based, businesses communications for two to 128 concurrent voice or fax calls. The SNOGA open hardware platform for small-to-medium businesses enables software developers and system integrators to build customized, Linux or Windows-based unified-communications or business phone systems.

Orange in Gartner UC Leaders Quadrant

Orange Business Services has been positioned in the leaders quadrant in the recent edition of the Gartner Magic Quadrant for Unified Communications as a Service, Multiregional for its Business Together as a Service solution.

Samsung Targets Business with 360

Samsung Telecommunications America LLC has unveiled Samsung 360 Services for Business, a suite of services encompassing mobility support, enterprise mobility management and value-added services for deployment, security, applications and device care. "We've listened closely to our customers when they talk about their pain points. They struggle to manage the complexities of BYOD and mixed-device environments," said Robin Bienfait, chief enterprise innovation officer for Samsung Electronics. "Through Samsung 360 Services, we can provide 'one hand to shake' as a technology collaborator with unmatched global reach."

Ericsson Unleashes Bowser

Ericsson Research is releasing its web browser Bowser and the underlying framework OpenWebRTC as free and open source. Stefan Ålund, research manager at Ericsson Research, says: "Ever since releasing Bowser to the public in 2012 we have been asked to share our implementation. Today, we are not only releasing Bowser but also the underlying cross-platform WebRTC framework that we have developed and used internally at Ericsson Research over the last few years."

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TMC Labs Reveals UC Award Winners

s you might expect, in a world where the cloud is mentioned everywhere, even on mainstream TV, cloud communications would be a big part of this year's winners. Companies embracing the cloud that won this year include Lifesize in video, Sonus Networks in security, Nextiva, Star2Star Communications LLC, Votacall, and VoxOx in general UC. What is truly remarkable is how each of the above differentiates itself.



In addition, we have a number of other important UC companies like Grandstream Networks thanks to its Android support and Sennheiser

thanks to great battery and wireless performance. Digium has a nice hybrid cloud solution as well. More winners are below.

Digium Switchvox www.digium.com

Switchvox is the phone system brought to you by Digium, the company that brought the open source Asterisk communications solution to the market, giving customers the benefit of a phenomenal amount of user testing and global R&D, which helps improve this retail product aimed at SMBs. We've had positive experiences with Switchvox in the past and continue to be impressed by being able to easily migrate from a hosted Switchvox solution to an on-site Switchvox and back again through its built-in backup and restore mechanism.

In addition, a version of Switchvox SMB exists for service providers that wish to provide premium hosted IP PBX. It runs in a virtualized environment (Xen) with 20 instances of Switchvox SMB on a single 1U server – essentially providing 20 small businesses with all the features of Switchvox SMB without the need for them to deploy a Switchvox SMB server on site. All they need is IP phones.

Other things we like are Switchvox Mobile for iPhone, Android and BlackBerry which allows features like showing the work (not the personal number) in Caller ID; Switchvox Notifier for Microsoft Outlook, allowing click-to-dial from email or contact record, change of status as well as the viewing of voicemail and call logs. Moreover, there is screen-pop integration for incoming calls. We also like the dialer for Chrome and Firefox, as well as the Switchvox Extend API, allowing developers to use PERL and PHP to integrate the phone system with CRM and other business applications.

TMC Labs continues to be impressed with the web-based Switchboard in Switchvox. It enables user's access to realtime presence, drag-and-drop transfer, mobile phone numbers, call queues, call recording, monitor, whisper, barge as well as the personalized phonebooks, the internal directory, and call parking. You can also easily create web mashups, such as CRM integration to pull information.

Grandstream Networks GXV3275 IP Video Phone for Android www.grandstream.com

Generally, there is a large chasm between desk phones and smartphones as the former don't have the flexibility of the latter. However Grandstream aims to punch a hole in the dividing wall with the six-line GXV3275 IP Video Phone for Android, which delivers voice, video, presence, and advanced productivity UC features. Supporting Android 4.2, the phone connects with the major SIP IP PBX companies as well Microsoft Lync, Skype, Google Hangouts, etc.

The phone does actually look like a chunky 7-inch tablet and with touchscreen support and the ability to download apps from the Google Play store, the phone really becomes a powerful device able to run many hundreds of thousands of apps which have already been written. In addition, there is also Bluetooth support for syncing mobile devices, call transfer, and contact book syncing.

The phone further supports free multi-platform, multi-party HD videoconferencing, has HD wideband audio, six lines, six SIP accounts, dual-gigabit network ports with PoE, Wi-Fi (802.11b/g/n), six-way audio conferencing, EHS with Plantronics headsets, and 11 native languages.

In addition, the device can act as a security appliance, a video display, and can be auto-triggered to play streaming video based on triggered alarms. The phone can be further extended with Android and Grandstream APIs. This is truly a powerful device. Grandstream was the first phone vendor to show us an Android phone many years back, and the company continues to impress us.

Lifesize Lifesize Cloud www.lifesize.com

When we first encountered Lifesize some years back we were impressed with how it could deliver a high-quality telepresence solution that cost a lot less than competing systems and at the same time make its solutions very easy to use. As you might expect, the company has moved from in-room systems to a hosted model and LifeSize Cloud solution makes sense for 10 or more users looking for a great solution for smartphones, tablets, laptops, and especially conference rooms. The company touts itself as a provider of business-class video collaboration and thanks to its ease-of-use, it does this without seriously taxing IT resources. Some of the features which impress us most are unlimited guest support, a shared auto-populating directory, click-to-call by name, presence status indication, instant or scheduled calls, and presentation sharing.

In addition, companies can leverage 25-way calls in HD video or audio without having to deal with scarce bridging ports. Also, web logins make it easy to add new users. Other items of note include a multi-ring feature which alerts multiple devices of incoming calls.

One final note: The number of incremental improvements the company makes is impressive – at least one per month in recent months. For example, in August it began allowing MSI files to be distributed by cloud managers; in September new local phone numbers were added in more than 40 countries; and in October, 1080p data sharing became available with Lifesize Icon systems.

In short, the company that was really one of the first to offer reasonably-priced quality telepresence solutions has taken its solutions quite successfully to the cloud.

Nextiva Office www.nextiva.com

There was a time when you purchased a phone system that you had to decide was the right sized solution to fit your needs. Small systems didn't scale and large systems were very expensive. Using the cloud, however, you can scale from one to 1,000 lines without having to rip-and-replace a single thing. Boy have things progressed.

Nextiva Office's full suite of features lets customers use advanced call management features and reporting to improve their company's productivity and mobility with a flexible pricing model and no set-up fees. Prices range from \$19.95 per month for Office Pro to \$29.95 per month for Office Enterprise. The former gives you free number porting, local and toll-free numbers, unlimited virtual faxing, HD music on hold, and more. The latter gives you a conference bridge, a mobile app, team presence, call recording, silent call barging, and more.

Moreover, the company has designed a nationwide network architecture based on Oracle, Cisco, HP, IBM and others that, combined with peering arrangements with incumbent ISPs, provides an efficient service delivery method, eliminating public traversal of traffic without requiring any additional investment or configuration on the customers' side.

In short, we think Nextiva is a great UC solution for the masses, and the flexibility and quality of this cloud-based solution make it a natural winner.

Plixer International Inc. Scrutinizer www.plixer.com

There seem to be high-profile security breaches each day. Home Depot and USPS are just a few of the latest we've heard about.

Plixer tools have been used to analyze and troubleshoot irregular traffic patterns by IT professionals with some of the largest networks in the world. These same troubleshooting tools are ideal for high-traffic networks carrying VoIP, telepresence, unified communications, and other time-sensitive applications as the solution combines flow-based threat detection and network traffic performance monitoring. Moreover, it can monitor both physical and virtual networks. Plixer explains, "Leveraging detailed traffic metadata, even sites with secured connections that use encrypted traffic can't hide from the insight provided by NetFlow, sFlow, and IPFIX collection and reporting. Scrutinizer is designed to peer deep into network traffic, enabling the IT administrator to easily see who is consuming bandwidth, what they are using it for, and immediately restore precious resources for work-related needs."

Scrutinizer allows administrators to search and filter for data based on any combination of specific details with include and exclude expressions. In addition, thresholds can be set on saved searches and scheduled to monitor for pattern matches. This feature is often used for early detection of network threats. Plixer also offers the optional Flow Analytics, which integrates into Scrutinizer and offers archiving beyond 24 hours, additional reporting, and behavior analysis of flow in search of odd traffic patterns. Flow Analytics is essentially a 24x7x365 audit trail of all network communications. When investigations need to take place, the flow solution can be used to verify what data may have been exposed, when, and by whom.

Moreover, Plixer's Threat Index is a single-value weighted threat severity over time. The Threat Index rises for an individual host each time it participates in a behavior that is suspicious. Depending on the type of behavior (e.g. scanning the network) the event may increase the TI by a higher value than others (e.g. receiving an ICMP redirect). If the Threat Index of a host hits a threshold (e.g. 100), a notification can be triggered.

In a world full of security landmines, where new technologies often present big opportunities for bad actors and rogue nations to test the vulnerability of corporate systems such as UC, we believe Scrutinizer with its approach to keeping companies safe is a natural winner.

Sennheiser SD Office www.sennheiser.com/headsets

Sennheiser brings its 65 years of expertise developing world class recording, transmission, and headphones to the DECT-based SD Office headset which supports both a traditional desk phone and a computer-based softphone.

Some of the features include multiple wearing styles, high-end design and craftsmanship, a noise-cancelling microphone, and broad UC support.

In addition to all-day-plus battery life providing for 12 hours of talk time, the phone features something I wish my smartphone had, rapid recharge where the headset can receive enough juice for six hours of talk time or a 50 percent charge in just 20 minutes. There is also a two-year warranty, which is handy in situations where there are multiple shifts such as a call center or where wear-and-tear can be an issue.

There is also ActiveGard, which protects users from unexpected spikes in volume and other acoustic bursts that can lead to acoustic shock (symptoms include headaches, tinnitus, and even loss of hearing).

Additionally, we like the industry-leading range of 590 feet away from the base station, which obviously gives users greater flexibility. Finally, the company provides Electronic Hook Switch cords to work with an increasing number of phone models like Avaya, Cisco, and Polycom phones.

You really can't have UC without being able to speak and hear the other person, and the SD Office by Sennheiser has provided enough innovative new features to be worthy of this award.

Sonus Networks Sonus SWe www.sonus.net

A dramatic shift is taking place in carrier networks as telcos embrace becoming software telcos via SDN and NFV, increasingly relying on COTS computers to handle the processing instead of proprietary hardware so prevalent in the industry for decades. Reasons for the transformation include flexibility, power savings, cost savings, and a better ability to compete with OTT providers such as social networks.

Sonus was one of the most important companies in the softswitch space, which allowed carriers to leverage IP communications, and its position in the market has been solidified with the SWe, a virtualized SBC that is just like the company's successful SBC 5000 series but without the need for a box. Benefits include complete defense against SIP network threats including malformed packets, DDoS attacks, and rogue RTP protection as well as the ability to scale rapidly via license purchases. In addition, the solution allows customers to scale from as a few as 25 to an unlimited number of sessions.

The SBC SWe features the same code base, media transcoding, and security technology found in Sonus SBC 5000 Session Border Controller series. The only difference is how customers choose to deploy it: on industry-standard servers, in virtualized environments, or as a hosted service.

The solution impressed us with its ability to transcode G.711, G.722, G.723, G.726, G.729A/B, and iLBC and support wireline, wireless, wideband, and clearchannel codec pass through.

Other interesting features include silence suppression, dynamic jitter buffer, DTMF/tone relay/RFC2833/RFC4733 interworking, and video codec relay support.

As NFV adoption accelerates, we expect many carriers to look to solutions like the SWe. Moreover, the flexible deployment model a software solution provides means companies of all sizes can benefit from this solution – either directly through software license or via the cloud.

Star2Star Communications LLC StarSystem www.star2star.com

There are many cloud communications providers on the market, but we like the offering Star2Star provides because the company differentiates itself nicely from the pack. As expected, the company supports fax, voice, SIP, chat, mobile, etc., but what makes the company different is its StarBox Cloud Connection Manager and Constellation technology, which contributes to its claimed 99.999 percent uptime reliability.

In fact, the company's StarBox Cloud Connection Manager on-premises technology turns a cloud solution to one which is blended as it performs all the functions of an IP PBX while ensuring higher levels of call quality and reliability. The Constellation Network includes a primary data center and six major points of presence located at major hubs across the country.

When a business has to make a call to a remote office across the country the Constellation Network automatically routes the call along the best path. The network prioritizes each of the six points of presence based on which path is experiencing the lowest amount of latency. The call will then be sent along the highest priority path, unless it is not available for any reason. The call will then be sent along the second highest priority path, without dropping the connection because each StarBox Cloud Connection Manager is always connected to all six points of presence. The network re-prioritizes which pathways are preferred every 30 minutes. This is possible because the Constellation Network conducts call quality monitoring every five minutes. By traveling along the best path, the call arrives at the distribution center where it is clear and with the highest quality. Recent improvements include faster performance, UI improvements, bulk downloads of recorded calls to aid in compliance, CRM integration, and incremental improvements within the chat, faxing and the UI.

In short, we like the Star2Star UC solution as it provides the benefits of an in-house and cloud-based solution and MPLS without requiring a specific network provider or the added cost of an MPLS circuit.

TelePacific Communications Fixed Wireless www.telepacific.com

Unified communications depends on continuous broadband connectivity and typically companies are forced to choose from

a phone company and a cable company. In some parts of the country wireless is also an option and Fixed Wireless by TelePacific Communications is a great solution for customers in parts of California and Nevada where it is available.

TelePacific's Enhanced Fixed Wireless delivers Internet, voice and MPLS – all with guaranteed service level agreements – as a fully integrated part of their core network along with copper and fiber. Perhaps best of all, companies can feel much more confident their operations can continue in the event of an errant backhoe which severs a key cable. The company provides tiered speeds from a fully symmetrical 1 to 100mbps.

Another benefit is this service can typically be turned up within days as no digging is required. Instead, a rooftop receiver with line-of-sight to the fixed wireless base station and an NTU is used.

Once again, if you can't connect, your UC solution isn't very useful. TelePacific Communications provides SLAs, MPLS, and SIP-based solutions to companies that are looking for enhanced levels of redundancy and reliability with minimized exposure from digging equipment and other outage-causing incidents. The only improvement we would make is to offer it in more states.

VirtualPBX.com Inc. VirtualPBX CRM Connector http://virtualpbx.com

VirtualPBX.com Inc. deserves tremendous credit for being years ahead of the hosted IP communications curve. In a world of new entrants, this company stands out as a pioneer. Recently, it released VirtualPBX CRM Connector, which provides computer telephony integration between customer phones and CRM systems. This delivers customer information from a company's CRM system in real time to agents answering inbound calls. It also provides click-to-call capabilities into a company's SalesForce CRM system.

The current version supports Polycom and Yealink phones with SalesForce.com's CRM capabilities. In addition, software must be installed on a Windows, Mac, or Linux computer at the customer premises where the VirtualPBX, Polycom, or Yealink phones live.

VirtualPBX.com has spent almost two decades providing solid hosted UC solutions; with the addition of CRM integration, companies can merge the best of cloud-based communications and collaboration with their customer relationship management.

Votacall Votacall Hot Desking & NetOPS Cloud Command Center www.votacall.com

A challenge faced when implementing UC has to do with phone configuration. Many telephones and systems do interoperate well,but quite often manual configuration leads to human error and wasted time. To minimize this challenge, Votacall has developed the Hot Desking & NetOPS Cloud Command Center. In terms of hot desking, the solution improves the BroadSoft solution which as the company describes, requires an advanced end user license pack corresponding to specific phones. To extend the flexibility of the cloud to customers looking for a more ad-hoc hot desking solution, the company's solution fills the gaps.

In addition, the company's solution is designed to boost the flexibility of UC implementations via the centrally managed pushing of updates and configuration data. This is not unlike how IT might manage PCs or, more recently, mobile devices.

NetOps can assign licensing, credentials, DIDs, user names and more, freeing up valuable time in a UC implementation. It points to a future where cloud-based UC is more flexible than ever.

Voxox Hosted PBX www.voxox.com

If you've read this far, you know cloud-based UC is obviously not new or unique, but the approach to providing it is quite varied. Voxox has an interesting approach, allowing you to install an app on your phone to get the UC ball rolling. Once users get comfortable with the solution, they can upgrade to the more robust virtual PBX product, Cloud Phone. Once customers are ready to move into dedicated office space, they can upgrade to fully functional Hosted PBX or SIP trunking services all without losing any advertised local or toll-free numbers. Voxox also offers a full suite of wholesale voice and SMS services. The company really differentiates itself with a full spectrum of solutions, even for carriers on a wholesale basis.

Available features include voicemail transcription, web callback, and more. Cloud Phone can be easily transitioned into an advanced VoIP system that supports hundreds of phones and multiple office locations.

Moreover, Voxox Hosted PBX allows users to authorize their mobile phone number for use with their extension and to trigger outbound calls via a SMS callback feature. This feature allows mobile users to make domestic and international calls at super low outbound calling rates with the Caller ID settings associated with their office extension.

One other differentiator is that the company is a CLEC in five states, giving it unique benefits to customers in those locations. Recent improvements include remote call forwarding – managed with a PIN from any phone, and call park and pickup – similar to what legacy key systems once provided.

We're impressed with the breadth of Voxox solutions and like the continual improvements the company is making to its UC solution and congratulate the company on winning this award.

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Smartwatches Aren't Smartphones, **But They Aren't Smart Enough to Know It**

It comes as no surprise that the so-called smartwatch market is following its predecessor, with the number of smartwatches increasing regularly. Without question, the highest profile market entry was the longawaited iWatch, I mean, Apple Watch. And Samsung's position in the mobile space gives it something of an edge over many of the independent vendors.

Many quickly note they have no desire for a smartwatch – the phone is enough. But when most people stop and think about it, there are likely guite a few instances where the phone is actually inconvenient and a simple wrist-worn connected device would actually be useful.

The biggest problem with the majority of smartwatches - and certainly the two bigname mobile brands - is cost. Ultimately, despite its functionality, the smartwatch is still only a supporting device to your smartphone, and the cost should reflect that.

Secondly, many smartwatch developers have focused too much on maximizing wrist and screen real estate, rather than using an accepted, traditional style and building around that. Indeed, the old Casio calculator watches had a shape similar to many of today's smartwatches, but they were adopted only by a small, fairly unique

audience, whereas smartwatch makers are hoping to peddle their devices to the masses - anyone with a smartphone.

Cogito has launched a smartwatch that actually acts like a supporting device - not like a replacement device, though devices like Apple Watch are hardly a replacement, considering they require an iPhone to function.

Aside from its design, which is remarkably stylish yet simple (it can be modernized with different color choices), the Cogito Classic smartwatch provides a connected accessory

make outgoing calls? Does it have large onboard storage capacity and run multiple applications and services? No, that's what your smartphone is for. Devices like the Apple Watch turn the smartphone into a dumb device, since it is required, but provide no added functionality, since the watch is designed to do most anything your phone does.

Indeed, the Cogito Classic performs fairly basic functions, but it does what is necessary in those instances when it is inconvenient (or illegal) to check your phone. And,

You can actually be more connected with the Cogito watch than the Apple Watch.

that does the things you would want a supporting device to do. It provides notifications of incoming calls, messages, and social interactions; it allows you to answer or mute incoming calls; it allows remote control for you music player; it provides a remote trigger for your phone's camera; and it has a find my phone/watch feature.

Does it do everything your phone does? Does it allow you to answer emails and

because it isn't running countless apps on its own, the firm says the Cogito watch is able to run for "many months" on a single standard cell battery. It's water resistant to 10ATM, so water sports and showers won't present an issue. In fact, you can actually be more connected with the Cogito watch than with the Apple Watch.

Finally, you don't have to be an iPhone owner to use it. You can be, but you can also connect it to any Android phone or tablet – another benefit over the closed ecosystem devices from Samsung and Apple (and presumably several others to come in the near future).

At \$179 retail, the Cogito Classic isn't going to break the bank. It also isn't going to replace your phone – but then again, do you really want it to do that? You've just paid for a new larger screen smarphone, perhaps the Galaxy S5 or the iPhone 6 Plus, so you certainly aren't tied to small screen sizes, and in 95 percent of your daily situations, you will have your phone readily accessible, so why do you need a watch that can do everything your phone does? The answer is you don't. You need a smartwatch that is smart enough to know it isn't a phone.



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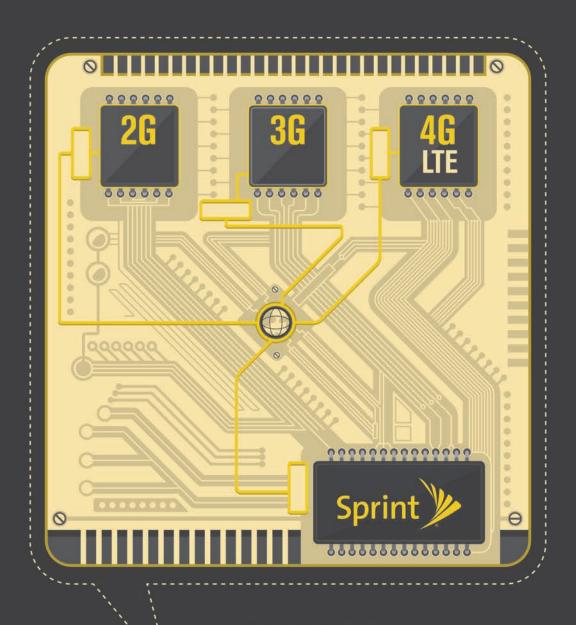
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