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INTERNET **TELEPHONY**

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Reforming Universal Service



After years of discussion and debate, the Federal Communications Commission this fall finally made

its move to address Universal Service Fund and intercarrier compensation reform. The FCC in mid October voted unanimously to retool these systems, which it noted "have been widely viewed as broken, and long overdue for reform."

Of course, a big part of the effort has to do with dismantling the USF, whose raison d'être is to ensure affordable phone service to all. Instead, the FCC wants to channel money to a new Connect America Fund, which is being established to make broadband connectivity more accessible and affordable. The Connect America Fund will have an annual budget of no more than \$4.5 billion, according to the FCC.

Broadband, which can support a variety of voice, video and data services, is now table stakes for most businesses, and its expansion promises to create new jobs and bring the country other economic benefits, the FCC and the Obama administration keep reminding us. The FCC estimates that by expanding high-speed Internet to more than 7 million people in rural America over the next six years the nation can increase economic growth by \$50 billion and create approximately 500,000 jobs.

Verizon in mid October came out in support of the FCC's effort around USF and intercarrier compensation reform, which some reports indicate favors the largest incumbent service providers.

However, Vonage CEO Marc Lefar notes that the shift of universal service funding to support the deployment of new broadband networks, rather than the build-out of traditional telephone networks, is also a positive development for the VoIP community.

"Vonage is pleased with the FCC's decision to overhaul intercarrier compensation and the Universal Service Fund," says Lefar. "In the short term, we expect the decision will be neutral to positive for Vonage's business, and in the long term, the decision will reduce our cost of telephony services by millions of dollars. Moreover, the FCC's order quickly

eliminates intrastate access charges, which currently represent an antiquated fee structure and which Vonage has indirectly paid since the company's inception. We believe the FCC's actions will be fundamentally good for consumers by eventually lowering prices and expanding the availability of broadband - they help Vonage and other service providers better deliver the high-quality, feature-rich, low-cost broadband communications services they demand."

David Erickson, CEO of FreeConference-Call.com, however, is not a fan of this reform.

"This plan will severely damage competition in the telephony marketplace," says Erickson. "Why? There is not one study or shred of evidence that the FCC's 'bill-and-keep' policy covers the cost of completing a call on a phone network. Thus, small phone companies will lose money on every connection to large phone companies. With AT&T and Verizon controlling 80 percent of the wireline customers and over 65 percent of the wireless customers in the United States, they will bill those customers and keep all of the proceeds, effectively starving the competition that has existed since the 1996 Telecommunications Act."

Recognizing the huge growth of cellular data and devices in recent years, the FCC with this reform effort is also bringing wireless into the mix by creating the Mobility Fund.

"The Mobility Fund will expand advanced mobile broadband access to tens of thousands of road miles, where millions of people work, live, and travel, and will include dedicated support for Tribal areas," according to the FCC.

However, C Spire Wireless, which says it's the nation's largest privately owned wireless carrier, sees this effort as a setback for the mobile space.

Eric Graham, vice president of C Spire, says: "Wireless is the most efficient and timely deployment option to meet that goal, yet the FCC's inability to untether itself from the wireline monopoly model of the last century deals a tragic blow to our nation's competitiveness at home and abroad." **IT**



U.S. Foreign Policy Needs Reform

Go to any of the recent shows in technology and telecom

such as CTIA Wireless and Interop and you'll see a huge presence from Chinese telecom companies like Huawei and, to a lesser extent, ZTE. Talk to the competition and you will hear them say these companies are poised to take over the world.

This shouldn't be a surprise because these companies have been able to benefit from the massive build-out of China's tech and telecom infrastructure. While the rest of the world was experiencing post telecom-bubble burst syndrome, Chinese competitors were feasting on home-grown growth and rapidly expanding worldwide.

Of course these companies are said to be state-controlled, which is why they aren't allowed to make certain acquisitions or even sales into the US. Recently, Owen Fletcher wrote about comments made by ZTE chairman Hou Weigui, who said he won't try to make core telecommunications deals in the U.S. to companies like AT&T, Sprint Nextel, T-Mobile and Verizon Wireless due to political obstacles. He went on to cite a deal with Sprint that the government prevented. Interestingly the company is able to sell devices like handsets and modems in the U.S.

The policy of the U.S. seems unclear at best. The only way to determine if something is allowed seems to be to try it and see what happens.

If we block outside companies from doing business in the U.S., how does a country like China reciprocate? After all, China is a massive market, and it's growing quickly. What are the negative economic ramifications of making decisions that directly protect national security yet hurt the U.S. economy to such an extent that we become systemically weaker because we have been financially compromised as a result of excessive debt to pay benefits to legions of unemployed and underemployed?

I am not a foreign policy expert, but it is my understanding that countries do things in their national interest. This would make

sense to the extent that the U.S. doesn't agree with China on human rights, but we are able to import cheaply so we have welcomed them as a major trading partner. Yet other countries with similar human rights abuses such as Iran and Cuba aren't allowed to trade with us at all. I realize the differences, but just want to point out the inconsistency.

A few years back when Iran had its large protests, many Western telecom companies pulled out of the country or at least scaled back. An article in The Wall Street Journal explains how this void has been filled by Huawei. It's not like U.S. companies were allowed to sell there anyway, but NSN was selling there and now it isn't doing as much business. Interestingly, part of the reason Huawei is so successful in Iran, boasting 1,000 employees, is it has the ability to give excellent tracking and monitoring solutions to the Iranian government, who can arrest and detain anyone who utters something with which the regime doesn't agree. And they can do it in a matter of minutes. Of course, you can imagine the sales pitch...Hey, we have tech that helps censor and track a billion people and keeps them from organizing anything more threatening than a birthday party, imagine what we can do for your hundred million.

When looking at these situations the question Western companies have to ask is: How exactly does this embargo thing work these days? There used to be a time, about 60 years ago, when the U.S. made everything, so an embargo made sense, as it would really hurt a country's economy. But today, regardless of where something is invented, it's manufactured in China. So what happens is that the West funds manufacturing of products that find their way via black/grey markets and even via direct distribution to countries such as Iran.

So not only do we not hurt the target country, but any profit Western companies could make is transferred to another country – in this case China, our largest global competitor! We have an embargo in place to theoretically hurt one country, but the only ones who suffer are ourselves. **IT**

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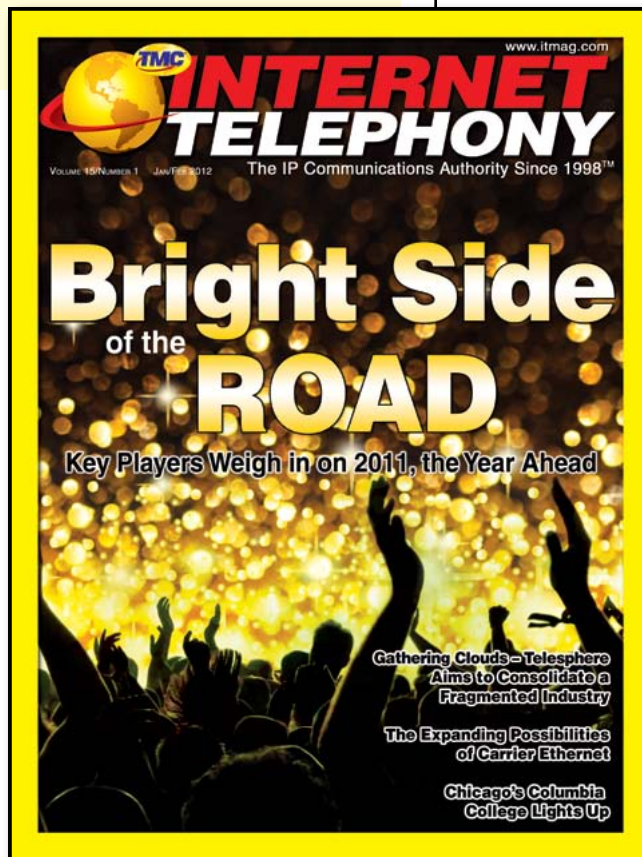


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By Jonathan Rosenberg



Top 5 Limitations of SMS

The story of texting in 2011 is one of David and Goliath. SMS – the Goliath of mobile messaging – has been under attack from numerous upstarts, some not so small.

iMessage, included in iOS5, represents perhaps the boldest attack, enabling users to invisibly bypass SMS when they use both iOS devices. RIM's BlackBerry Messenger has a strong and dedicated user base. Startups like Groupme, Kik, and WhatsApp have leveraged mobile development environments to introduce SMS alternatives. Chat services, available for almost a decade on PC, have been making the move to mobile, including Skype, Windows Live Messenger, and Yahoo Messenger. Indeed, TechCrunch declared Oct. 12, 2011, (the release date of iOS5) as the day SMS began to die.

However, as Mark Twain said, "Rumors of my death are greatly exaggerated." SMS usage is strong, and growing. According to Portio Research's January 2011 report, 6.9 trillion SMSs were sent in 2010, and the number was expected to break 8 trillion by 2011. Some analysts believe the growth is starting to slow, but there is certainly no doubt that SMS is still the dominant player in mobile messaging.

SMS has one major advantage – its network effect. Billions of users can be reached through it – almost anyone with a mobile phone number. However, it has many disadvantages. There are five in particular, each of them representing a point of attack for one or more of the new players in this space. What are those five? They are – in order of size of the weakness – multi-device, cost, real-time, grouping, and rich text.

Multi-Device

Today, SMS service is bound to a mobile phone number, and mobile phone numbers are bound to a single device. Yet, today's users have multiple devices from which they'd like to communicate – tablets, iPods, laptops, and desktop computers. This gap is becoming increasingly obvious as Internet services become more cloud centric – allowing users to seamlessly move between devices without loss of functionality. Many of the SMS alternative applications offer this capability.

Cost

SMSs are expensive, though pricing varies. Verizon Wireless, for example, charges 20 cents per message on a pay-as-you-go plan. For heavy texting users, these costs quickly add up. At 140 bytes per message, this is .14 cents/byte. Compare this to using the data channel; Verizon charges \$30 for 2GB of data, which comes to .000003 cents/byte – over 47 thousand times cheaper per byte compared to SMS. Using applications like Skype or iMessage provides significant cost savings.

Real-Time

Today, SMS is fire-and-forget. There are no guarantees on delivery time, and delivery can take a long time. Furthermore, there are no

tools that help users have a more interactive, real-time conversation. As an example, most instant messaging applications support the familiar "is typing" indicator. This indicator makes the conversation more real time by letting one user know that the other is typing a response. This feature is absent in SMS. iMessage, for example, addresses this gap by providing "is typing" indicators when sending an iMessage between iOS users. It also provides faster delivery.

Groups

SMS is one-to-one. There is no notion of groups – the ability to send a message to a group of users, and for the participants to reply, and for the reply to go to everyone as well. A group feature would also allow users to know the other participants in the group (roster). Groups are a fundamental part of any social interaction. If the role of chat or texting or calling is to virtualize a real-world interaction, people interact in groups all the time. Indeed, most of our most social real-life interactions are group-based – parties, dinner with friends, watching a movie together. Chat products, like Skype, have supported group chat for many years. Groupme's primary purpose is to add a chat overlay on top of SMS, rather than replacing SMS for one-to-one communications.

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Rich Text

SMS is text only, limited to 160 7-bit characters. There is limited support for long messages, and no support for advanced text (fonts or styles), embedded images, emoticons, or multimedia content. Some of these limitations have been addressed by MMS, though MMS is a separate service and has less uptake than SMS. Rich text features have been supported by most chat applications for years.

These weaknesses are substantial. SMS is an old service with a long history, and it shows. In the end, these limitations have not impeded its success. Its network reach – a property that has taken decades of carrier federation to achieve – is an incredibly valuable asset and a difficult one for a competitor to achieve. The SMS alternatives need to address the gaps – which are many – but also overcome the network effects challenge of competing with SMS.

But really, the battle has just begun. Will one (or many) of these solutions emerge as the David of messaging, overthrowing SMS as the primary vehicle for mobile messaging? Only time will tell. **IT**

Jonathan Rosenberg is chief technology strategist at Skype (www.skype.com).

By Jim Machi



What Does the Future Hold for the Premise Network?

I recently presented at the 2011 US Telecom Voice Innovation Conference on the topic, "The Premise Network." While it might not sound so interesting, the premise network is undergoing a great deal of change because work is not just a place to go anymore, it's a state of mind.

The talk was mostly about the future of the premise network, but I also needed to level set on what a typical premise enterprise network might look like. In my estimation, typical means there is likely still a traditional TDM network (but only because it's there and exists and the IT department doesn't want to remove it) and there is a VoIP network as well. Undoubtedly, on most enterprise networks, VoIP is either the lead communication network overall by now, or at least a major piece of it.

So, given all this, what kinds of applications might attach themselves to this kind of new CPE network? First, we see some movement of so-called non-essential apps to the cloud. A typical example is fax. Fax is still utilized today, but not in the same volume as 10 years ago. Nonetheless, it's still important to companies, but the IT departments may not want to support it. As such, it becomes a great candidate to move off premise to the cloud.

Given these are IP networks, high-definition voice apps will surely pop up. HD voice uses wideband codecs to reproduce the human voice more accurately. The result is significantly more natural speech, and some early users liken it to being in the same room as the person on the other end of the phone. HD voice codecs are used in software/IP based unified communication hubs such as

Today, advanced networks, including mobile networks, are impacting the definition of the premise.

Today, advanced networks, including mobile networks, are impacting the definition of the premise, so this typical concept is evolving rapidly. More and more people are connecting to the enterprise network via mobile devices, even on mobile devices that IT people wish they wouldn't connect with. Additionally, fast IP networks enable applications to be hosted outside the premise, but serve the premise nonetheless. In other words, cloud computing is having a huge impact on the enterprise or CPE network. Advanced networks enable the premise to be expanded, and the definition becomes fuzzy, so it's no longer premise per se, it's more of a corporate network. This is not really a new concept since for years VPNs have been enabling the enterprise network to shift out to cover whatever is IP connected. But that was for data type of applications. Now it's happening for all the traditional enterprise communication applications.

Cloud is also now entering the realm of telephony, and not just for CRM or for storage. I've been looking into this and from what I can tell, PBX lines should be about 25 percent hosted/cloud by 2015, and UC applications should be a little under 10 percent. In other words, this is happening, but it's also still in the early stages.

Microsoft Lync, and they are making their way to some mobile networks as well, so we will hear more and more about HD voice in the new CPE.

Conferencing is also a key application. Many companies use an external conferencing company already. We are also seeing that new enterprise productivity apps, such as videoconferencing, would be good for the cloud and are currently being implemented that way. Other examples of new enterprise apps include video-enabled IVRs, social networking and mobile advertising. You might find social networking surprising, but social networking is important to many businesses, especially businesses that market to consumers. These types of applications were not really possible 10 years ago, but they are being implemented now.

In short, the definition of CPE has radically changed due to fast networks and mobile devices. It's no longer a simple brick-and-mortar definition. It's all moving to cloud-based applications, even for telephony. HD voice is now being heard, and video is entering the picture as well – there are a great deal of possibilities for the future premise network. **IT**

Jim Machi is senior vice president of marketing at Dialogic Inc. (www.dialogic.com).



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By Michael Stanford



Talking Video

Video phones have arrived! (But they can't talk to each other.)

Videophones have been coming soon since AT&T demonstrated one at the 1964 New York World's Fair. Today, most phones sold in the U.S. are smartphones, and high-end smartphones have user-facing cameras, adequate screens and high-speed data connections. Plus these phones have chips optimized for video processing.

Apple exploits these capabilities with its FaceTime app, which lets iPhone users make video calls to other iPhones, iPads and Macs. Android phones have a similar application called Google Talk. Many non-U.S. telcos (about 100 of them, according to Jim Machi of Dialogic) use an ITU standard called 3G-324M to provide video calling over the circuit-switched (non-IP) network.

But it is frustrating that while anybody with a phone can make a voice call to anybody else with a phone, they can't do the same with a video call. An iPhone user can't make a FaceTime call to an Android user, and a Google Talk user on Android can't make a video call to an iPhone. 3G-324M subscribers can only call each other if their providers have executed interoperability agreements, and there is no interoperability between FaceTime nor Google Talk and 3G-324M.

The closest thing to a universally interoperable videophone service is Skype, which works on both iPhones and Android phones; on all PCs and Macs; and on many other devices, like TVs and soon, presumably, Xboxes. This brings Skype a huge competitive advantage in the form of the network effect. But Skype is proprietary to Microsoft.

In keeping with the usual Microsoft/Google/Apple script, Google is pushing to annex videophone capability into web browsers with a new open protocol called WebRTC. Several factors give this effort a chance of success. First, it is consistent with the universally-supported move to HTML5. Second, it is consistent with the apparent trend to cloud computing. Third it is open, and can provide telcos with a counterbalance to Skype. Fourth, web browsers are even more common than Skype, and Android is more common than iOS and Windows Phone. On the other hand, while Firefox and Chrome will support WebRTC, neither Microsoft nor Apple will be motivated to do so in their respective browsers. **IT**

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

Thinking IT Through

By David Yedwab



Will Cloud Services Be Good Enough?

Back almost three decades ago, when the grey-hairs among us first started hearing about and maybe lugging around big/heavy cell phones, we knew the call quality would be terrible and dropped calls would be de rigueur. However, the power

of mobility was overwhelming, and we accepted the bad sound quality, poor coverage and outlandish per-minute rates because of the benefit of not being tied to a wired desk phone. That is, we accepted mobile phones as users, and now there are more connected mobile devices than people. Now IT is not wrestling so much with how to support mobile devices as with how to support the bring-your-own-device trend.

Today, the cloud hype is similarly overwhelming – both in the volume and breadth. But so are the reported failures and extended outages as we wrestle with the purported benefits of lower costs, speed of deploying/up-scaling/down-scaling, and the potential for better disaster recovery/failover/ recovery, and support for remote and mobile workers, etc. Should we deploy private, public or hybrid clouds? What cloud modes should we do – IaaS, PaaS, SaaS? And for those of us in the voice/UC crowd: Is UCaaS (hosted/cloud UC) a viable option?

I would posit that the proper cloud question isn't if but when. I come to this conclusion that cloud is the ultimate commoditization of computing hardware, or to put it another way, computing resources are rapidly becoming a utility – with coming ubiquitous availability and capabilities from cloud – much broader and cheaper than any but the largest multi-national enterprises can provide for themselves. For those of you who may have heard me speak skeptically about cloud, as “Back to the Future” of early transaction processing systems or timesharing on mainframes, you may be surprised to hear that I am now an advocate of cloud.

So, given I've changed my cloud spots, what am I advocating that we do to transform to cloud? Well, study, plan, analyze, pilot, test and begin to deploy as the business cases show that both quality and price can be improved by deploying in cloud. Beginning to get ready now before you are compelled exogenously is the course I recommend for all today. And deploy in steps – another benefit of cloud is you don't have to be all-in at the first moment. You can begin the transformation as your plans make sense, and your applications can accept some reliability and quality issues and still recover. And you can reap cloud benefits. **IT**

David Yedwab is a founding partner in Market Strategy and Analytics Partners LLC (www.mktstrategy-analytics.com).



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By Marc Petit-Huguenin



Automatic Provisioning of SIP Routes with VIPR

The most promising aspect of the VIPR technology is not just the ability to automatically and securely provision SIP routes between VoIP islands, but to also automatically update and remove these routes when a user changes its phone number.

The traditional way of bridging VoIP islands is to use SIP peering. Establishing peering between two VoIP domains generally requires engineers from each side talking to each other and doing some interoperability tests (although the reality is that these tests are more about negotiating a minimal common denominator than to try to offer advanced features to their customers. The resulting common denominator is rarely better for the end user than what the PSTN provided before the peering). The next step is to exchange in some form the list of phone numbers that can be directly reached via this peering. The difficulty here is to be sure that this list is up to date, and will stay up to date.

IP address and port of a PSTN Verification Protocol (PVP) server, a server managed by the VIPR domain that registers the phone number. This PVP server will use a previous PSTN call to this phone number to assert that the VIPR domain requesting a SIP route is really the originator of the call, and will return back a unique SIP route that can be used only by this VIPR domain. This is guaranteed by a cryptological token associated with the SIP route without which the call will be rejected, preventing VoIP phones to call this phone number without making at least one PSTN call before.

One difficulty is to prove to the VIPR domain that registered a phone number that the other VIPR domain knows the details of this call without revealing those details. To solve this problem VIPR uses a clever cryptographic algorithm called a zero-knowledge proof. Because of this algorithm a VIPR domain cannot guess the details of a phone call made by another domain, and this is why it does not matter if domains fill the distributed database with phone numbers that they do not own.

One area where innovation will take place in the coming years is about the information exchanged to validate the PSTN call.

VIPR works differently. All the VIPR domains willing to participate store their list of phone numbers in a unique distributed database (using IETF's RELOAD protocol). Nobody owns this distributed database, as it is composed of servers that are contributed by each VIPR domain. VIPR domains that do not want to reveal too much about their phones numbers to competitors can use a strategy where they also store phone numbers that they do not own – this does not prevent the VIPR protocol from working, and will add enough noise to the database to make any data mining difficult.

Because it is supposed to be maintained by the real owners of a phone number, ENUM, another technology designed to bridge VoIP islands, shares the same agility as VIPR to maintain a correct mapping between a phone number and a SIP route. What ENUM does not have is a way to reduce the possibility of VoIP SPAM to reach this phone number. Instead of publishing the SIP route for a specific phone number directly inside the distributed database, VIPR indirectly publishes the

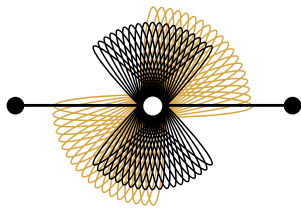
One area where innovation will take place in the coming years is about the information exchanged to validate the PSTN call. VIPR defines two basic sets of data (also known as PVP methods) which use the called number, the caller ID (if available), and the date and time of the beginning and end of the phone call. These two methods will cover a large percentage of the calls to verify, but not phone calls made from an analog line (this is because there is no indication of when the called party picked up the handset). New methods will not only work for analog lines but will also permit this verification faster and more securely. Examples of new methods could be to exchange the unique characteristics of the voices participating on the call, or to inject a unique and not audible sound pattern into the call (a technique known as fingerprinting), and so on. **IT**

Marc Petit-Huguenin is CTO and co-Founder of Stonyfish Inc. (<http://stonyfish.com>). He also blogs at <http://blog.marc.petit-huguenin.org>.



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By Mike Sheridan



Clouds for Real-Time Media; Considerations and Concerns

You can't go too long shuffling through e-mails these days without seeing something on how IT is looking to move everything to the cloud – whether it's private, public or hybrid, IaaS, PaaS or SaaS. But is the cloud ready for everything?

It's true that cloud services offer significant advantages by allowing various components to run on available servers, reallocating resources as needed. With tools like VMotion or LiveMigration, these components can be moved with minimal disruption to adjust dynamically for new or different loads. However, the experience of that disruption can be dramatically different. People are used to the varying responsiveness of business applications or web pages that can take a few seconds to completely display. By contrast, even the smallest real-time media delay can feel like a walkie-talkie conversation.

So are clouds ready for the demands of real-time media? In some cases, no. Cloud vendors readily admit their deployments don't have the consistent high-level responsiveness to handle real-time media constraints. It's only in the last couple of years that UC and PBX vendors have even allowed virtualized deployments, which are critical for cloud resource management. And even then, they often put additional criteria on the sizing and instances required. Reading the fine print, most indicate that moving the virtual machines is fine – as long as there are no calls running through during that process.

Despite conditions and restrictions on real-time media in the cloud, several deployment models are finding a way forward. Specialized services like Microsoft's Office 365 and Skype are available, but these clouds are dedicated to media handling and are not for use with general applications. PSTN carriers are starting to provide cloud-

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Streaming media compensates for this effect by buffering content before playback starts, allowing for momentary disruption of the download to be completely hidden. Depending on bandwidth, media can sometimes be sent faster than the playback to catch up the buffering model. Even live streaming presentations are usually delayed by a couple seconds without a noticeable disruption to allow for buffering. If you consider Internet radio, for example, unless you're listening to the presentation on a traditional radio at the same time, how would you even know?

Of course real-time media can't be pre-buffered because it doesn't exist. For VoIP, small jitter buffers on the receiver allow for trivial transmission variations, but these are almost never more than 90 milliseconds and quite often are variable, adjusting the buffer size based on the variations detected. The best systems relay information back to the transmitter so it can adjust packet sizes, compression techniques or other characteristics to correct for transmission anomalies.

based services with service level agreements that allow the level of reliability needed for corporate communications. The use of hybrid clouds, where real-time media processing components are on premises and the other UC features are cloud based, is another alternative – mostly with specialized media servers, which are controlled remotely but send media directly between the endpoints in the call. Private clouds, with the appropriate sizing and restrictions, will certainly handle real-time communication needs as long as deployment guidelines are followed carefully.

That leaves general purpose public clouds. What is their fate? At the rate of cloud technology evolution, my guess is that public clouds are not far behind. We'll see real-time media readiness sooner rather than later. **IT**

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



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By Jeff Hudgins



Top Four Benefits of 380VDC in the Data Center

The battles between AC and DC power have been around since the late 1800's. It was Edison (DC) versus Westinghouse and Tesla (AC). The early battles were so intense that Edison went around to state and local fairs zapping animals with AC to "prove" that AC was unsafe. He even went as far as inventing the electric chair to show that AC power was so unsafe it could be used to reliably execute criminals.

In the end, AC won out because of the transformer and the synchronous motor. But after 120 years, a new battle has surfaced. As the number of data centers increases, the industry is looking for more ways to lower power usage and cost. If you look closely at equipment running in the data center, you actually find that internally lots of things must convert to DC. The most energy-efficient solution consists of the highest voltage with the least number of power conversions. Enter 380VDC. The four primary benefits from implementing a 380VDC solution for the data center are reliability, space, efficiency and cost.

First, the reliability increases nearly two times as the number of conversions are cut in half, which reduces the opportunity for failure across the entire infrastructure. Second, the amount of

floor space required can be reduced by one-third as there is just less equipment required. Third, the overall power savings can reach as high as 25 percent by eliminating power efficiency loss at each conversion from AC to DC. Last, the capital and operating costs are reduced by nearly 25 percent because less equipment means less to buy and maintain.

So with all these advantages, who wouldn't jump on it? Well it turns out that many people are charging into the 380VDC arena. Japan was out in front with its green IT initiative that started in 2009. The open questions around standards are quickly being addressed around things like power supply connectors and connectors for rack interconnect. And implementation of DC interconnect wiring schemes is reducing the safety risk below the actual AC voltage human hazard limits.

So what's the final score? The benefits of implementing 380VDC are compelling in the data center, but it will take strong cooperation from equipment makers, data center managers, and regional power utilities for the industry to fully realize these benefits. **IT**

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

Enterprise View

By Max Schroeder



A Continuing Educational Series Cloud Hunting – A Guided Tour

Cloud computing is generally thought of as the delivery of computing technology via software as a service and an excellent replacement for the traditional customer-premises equipment IT infrastructure.

However, many industry insiders now consider that definition somewhat dated and a traditional approach. Private clouds have become quite popular and hybrid combinations of traditional, public and private solutions have also emerged. This mix provides a wide array of choices but still leaves open the question of what is the best model for an organization's needs.

Cloud computing can reduce IT costs, enhance business continuity, provide scalability and increase the efficiency of employees – but not necessarily in equal proportions. There is also a cost associated with the cloud migration, and a disjointed approach can waste time and resources. Organizations need to evaluate carefully all of the options available before selecting the optimum path.

Many organizations already have VoIP and converged messaging in place and running in a virtual environment. Quite a few of these, however, are simple migrations layered on top of a traditional CPE IT model with limited flexibility. Internal budgets are fixed, providing full accountability, but with

little opportunity to reduce costs without an accompanying reduction of services. In a hybrid solution, IT departments are competing with external service providers, allowing the organization to maintain or increase services plus reduce costs.

The process needs to start with a full review of the current infrastructure weighed against the potential benefits of migration. If you do not have experience in this area, selecting a consultant or reseller with cloud expertise is advisable and will expedite the process. Visiting ITEXPO East in Miami is also strongly recommended.

ITEXPO is where resellers, enterprises, SMBs, service providers and government agencies congregate in the clouds to look under the hood of many of the industry's hottest communications vehicles. IP-based voice, video, fax, unified communications, hosted services and hybrid solutions are all on display. You can also participate in educational seminars and conferences under the tutelage of leading industry experts who really have their heads in the clouds.

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



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By Alan Murphy



Cloud Interconnects: Bridging the Cloud Networks

One of the most overlooked, yet also one of the most complex and critical, components to a successful cloud deployment is bridging the network between the on-premises data center resources with the off-premises

cloud-based services. A network-level cloud interconnect tool is most often associated with a hybrid cloud, where application services are shared on- and off-premises, but these tools can also offer value for public and private clouds as well. At their core, cloud interconnection solutions are network tools: they connect two different data centers over the WAN. But with a few exceptions, we don't see these tools getting mass attention when people talk about creating public, private, or hybrid clouds.

Cloud interconnect tools can offer new and unique solutions for controlling and managing elastic resources, and they can also be strong differentiators for cloud providers as well.

There's no question that VMware's vCloud Connector is the most well-known cloud interconnect solution, but it's one of the most specific implementations available as well. vCloud Connector is explicitly tied to VMware products, linking multiple VMware cloud installations together through vSphere and vCloud Director so that they all appear as a single cloud instance. vCloud Connector is more of a lock-in solution as it requires other VMware's virtual platform products. If you've already standardized on VMware then vCloud Connector is a logical choice for cloud interconnect, ease of management of off-premises resources, and for transparent migration for virtual machines; however, non-VMware shops will need to look elsewhere for a cloud interconnect solutions.

Cloud Bridge from Citrix isn't as tied to the virtual platform like VMware's vCloud Connector, but it's also arguably the most convoluted of the big-name solutions. It's a classic trade-off: You can do more with Cloud Bridge, but it takes more work and requires

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Over the past year we've seen some rather larger movements in the cloud interconnect space despite not hearing much about this part of the cloud world. Most enterprise IT shops that approached cloud computing as an extension of their existing data center resources probably started looking at ways to connect cloud resources to their existing infrastructure from day one. In contrast, companies that were looking to completely off-load services to the cloud probably have only seen very basic cloud connection tools from their providers, such as simple IPsec or SSL VPN tunnels that allow the customers to securely transfer virtual machines and storage to the provider network. The whole connect your cloud market, much like other data center markets such as application delivery or integrated storage, is one that you either know well or you don't know at all, depending on your particular cloud needs and your maturity level for how you're using the cloud.

There are more than a handful of true cloud interconnect solutions available – not counting the more basic transport-only solutions available from just about every cloud provider – but the two most well known technologies unsurprisingly come from the two big platform players: VMware and Citrix. That's not to say that other advanced cloud interconnect tools don't exist, but these two players seem to be getting the most attention with their branded solutions. The architectures of each option are completely different, but ultimately each delivers on the same overall promise of seamlessly connecting off-premises resources to on-premises data center management.

IT to make choices up front, such as deploying Cloud Bridge as a physical, virtual, or integrated solution. As of its release, Cloud Bridge is also limited to securing the connection to the cloud using IPsec, a very limiting networking option that may not be available from many external cloud providers. For bridging heterogeneous private clouds in different data centers, though, Cloud Bridge may be a good option for enterprises that have total and complete control over their own internal cloud environments and prefer flexibility over turnkey.

Although it is technically possible to achieve a hybrid computing model or to build an architecture that supports cloud bursting without using a cloud interconnection tool, much of the benefits from elastic computing are lost when the elasticity can't span on- and off-premises resources. The importance of linking an external cloud platform to the internal data center fabric can't be overstated.

Technologies that bridge the external cloud environment with the internal data center will become a requirement in short order, and in a few years we'll be looking back wondering how we ever lived with, and trusted, our apps in an unmanaged cloud. Regardless of the pros and cons of each, or the reasons for choosing one over the other, it's important that IT start integrating and using one of these technologies today so that future cloud growth can be build around a connected network. **IT**

Alan Murphy is technical marketing manager of management and virtualization solutions with F5 Networks (www.f5.com).

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By Nick Maier



Next-Generation 911 Trend: End-to-End Solutions for Large Enterprise Customers

As those of us in the communications industry continue to define next-generation 911, a new term has entered the evolving next-gen vernacular: end-to-end.

What does end-to-end NG911 mean, and what are the implications for large enterprise, government, military customers and PSAPs?

End-to-end NG911 refers to an all-IP network using SIP and network elements defined in the National Emergency Number Association's i3 standards that send and route 911 calls based on the location of the caller. The unique differentiator in the NENA i3 standard is that the location of the 911 caller is transmitted in the SIP signaling stream when the 911 call is made. The 911 call is routed to the correct PSAP based on the location object in the call, and both the voice RTP stream and the location arrive at the PSAP over an IP/SIP network.

If you are a large, multi-campus enterprise like a university or military base that answers your own 911 calls and has your own emergency responders, you are a likely candidate to implement the NENA i3 standards, which dictate how networks and devices will work together to enable voice, text, picture, and data exchange between 911 callers and first responders. Since you own your own network and dictate the voice endpoints used on the network, you are in a prime position to implement end-to-end NG911.

We are just now beginning to see SIP voice endpoints capable of requesting and storing their location. Within a few years, all voice endpoints, on both the cellular networks and enterprise networks, will be able to send their location as an object when they dial 911. Routing these calls over public networks will require a substantial overhaul of the existing 911 network. Already, certain states like North Carolina, North Dakota, Texas and Vermont are connecting their PSAPs with NG911 networks to handle this traffic. These networks provide many benefits in terms of cost savings, redundancy, scalability, and personnel utilization while delivering improved situational awareness for emergency response.

The industry has done a commendable job of thoughtfully developing the NENA i3 standard and recently completed its fourth interoperability bake-off among dozens of providers of NG911 network equipment, demonstrating that the technology is available today for early adopters who control their own networks and wish to implement end-to-end NG911. However, for most states, counties and voice network providers, the move to NG911 will be more of a migration than a leap, with proven gateways and other transition technologies easing the transition. **IT**

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

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By Hunter Newby



Dark Fiber: Glut or Drought?

It is interesting to see how many people in the U.S. communications networking business are so conflicted when it comes to the topic of fiber infrastructure. Some still believe that there is a glut of fiber out there in America, although their numbers are dwindling, and that anyone can just go out in their yard, dig a hole and voila there is the fiber, open and free for all to connect to for any reason. Ah, blissful ignorance, what a blessing for those that do not actually need to get things accomplished.

At the same time, though, those very same people openly wonder why their mobile smartphone connections are slow and their service is inconsistent and unreliable. They speak of rural broadband access issues, as if it is in some far away, third-world land, but have no real plan to address such issues. If there were in fact a glut of fiber, essentially too much fiber in the ground everywhere, then wouldn't these problems all be resolved? If there were a glut, how could there be a lack of access to broadband – fixed, or mobile?

In all fairness, there are a few places in major metropolitan areas and a few select interstate routes where there were overbuild of dark fiber from multiple providers, 10 years ago. Since then there has been a good bit of investment made in new dark fiber to keep up with demand in the metros, which means that the original cables were exhausted and new ones were required; but there has also been a healthy amount of mergers and acquisitions that have taken place. These corporate combinations have

combined the fiber cables of once competing providers, which has resulted in the reduction or elimination of dark fiber availability in some cases. Again, these nuances only exist in certain high-density population areas in the U.S. The rest do not have the luxury of such problems, as they have no competitive dark fiber options to begin with.

Glut, drought, it is all a matter of location and accessibility. It is just like water. Some places have floods while others are having droughts. Why can't the excess water in one place just be in another place where there isn't any water? Is it logical to assume that if there is a flood in one place that there is too much water everywhere else as well? The logical answer is no. The blissfully ignorant might have differing opinion.

The concept of moving an abundance of water from a flooded area to an area in need of water is as worthy a cause as bringing dark fiber to areas without access to proper high-speed broadband – fixed, or mobile. Do not be deceived by the intentionally ignorant either. Today the minimum definition for proper broadband should be 10mbps to the home and 100mbps to the tower and not whatever the top speed that can be reached on old copper plant. Once the issue of ignorance is dealt with, getting the fantasy of a ubiquitous fiber glut transferred over to the reality of a fiber access drought all comes down to logistics, finance and time. **IT**

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

Once the issue of ignorance is dealt with, getting the fantasy of a ubiquitous fiber glut transferred over to the reality of a fiber access drought all comes down to logistics, finance and time.



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Unified Communications

SIP Trunking and Beyond

By Ken Osowski



Call Recording Made Easier?

Businesses across many vertical industries are facing regulatory compliance and oversight from government agencies that include a long list of regulations such as SEC 17a-4, HIPAA, SOX, PCI-DSS, FSA and MIPPA. A major

component of being compliant means that businesses need to record interactions with their customers. At minimum, recording voice calls provides a record of these interactions in the event that proof is required if a dispute arises. These recordings serve to demonstrate that all necessary regulations were met in a call between a customer service representative and the client.

A traditional call recording system allows voice conversations to be recorded as voice files while calls are in progress. These call recordings are then stored and linked to data that identifies properties of the conversations such as date/time, CSR name, length of the calls; then makes them available for playback and verification through the call recording or analytics platform. Voice call recording has been widely deployed using circuit-switched technology in contact center environments, but the widespread adoption of SIP has expanded what can be recorded in a SIP-based communications session to include real-time communications including VoIP, instant messaging, unified communications, video communications, and collaboration. As a result, basic call recording becomes session recording in this open IP communications environment.

affinity toward centralizing IP communications for enterprises. Inside the enterprise private network, SIP-based communications is easily centralized and managed to route to a scalable session border controller that connects to external networks including the PSTN and the Internet. This network deployment model can readily encompass businesses that are decentralized because of markets served or remote workers, helping to reduce the costs of distributing call recording resources and PRI connectivity. This shifts the call recording model from line side to trunk side call recording.

This approach results in call recording resources getting consolidated and more easily provisioned. With session traffic consolidated at the enterprise SBC, all forms of session recording can be initiated for both incoming and outbound customer interactions. SIP trunk recording ensures the best recording quality and can be easily segmented for simple compliance recording or advanced speech analytics systems. For distributed businesses, session recording at remote locations can be consolidated back to a centralized enterprise SBC location where communication routing can be optimized to control externally routed communication costs.

This trunk side approach to session recording can also benefit service providers. Service providers can augment their hosted

SIP trunk recording ensures the best recording quality and can be easily segmented for simple compliance recording or advanced speech analytics systems.

For many enterprises, replacing circuit-switched communications with IP communications also includes replacing a wide variety of legacy network infrastructure including messaging, IVR, ACD, and conferencing technology. There is a strong economic motivation for enterprises to reduce deployment costs and simplify operational complexity. The bulk of investments made by enterprises in IP-based session recording go along with upgrading these components found in traditional contact centers.

The SIP trunking deployment model is a key ingredient to achieving this technology shift. SIP trunking has a natural

business VoIP service offerings with session recording capabilities on their MPLS network deployed SBCs. Small businesses are still subject to the same recording compliance regulations, and this gives service providers a way to reach the SME market that is complementary to their SIP trunk service offerings. Just as enterprises can consolidate their session recording around an SBC, so can service providers. This enables the service provider to further monetize their SIP trunk network infrastructure by providing value-added SIP trunk services. **IT**

Ken Osowski is director of service provider product marketing at Acme Packet (www.acmepacket.com).

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By Steven Johnson

Ask the SIP Trunk Expert



Making Smart Investments in Infrastructure

CIOs and IT managers are taking a critical eye toward infrastructure investments. I've spoken to a number of industry colleagues and they agree that while the economy has loosened things

up somewhat, investments must first prove their worthiness in order to trigger the spend.

SIP trunking continues to be one of the best investments around. According to Infonetics Research, the adoption of SIP trunking services grew 200 percent worldwide in 2010, and the use of SIP trunking is growing. Cost efficiency is one key driver: by eliminating BRIs/PRI's, businesses can slash costs very quickly. The reduction in communications costs over time, from using VoIP instead of the PSTN, contributes to the rapid ROI that most companies see in six months or so.

Boosting productivity is another driver, and a strong one; streamlining communications between staff, or for contact centers using IM or presence with customers, or for uniting a global company with staff in various continents (Ingate is a good example) the increased efficiency from real-time communications is invaluable. My colleagues

in Stockholm are available to videochat at the click of a button. And with a six-hour time difference between our U.S. headquarters and Stockholm, our presence application has become essential.

In 2012 there will be new issues to tackle in unified communications, including with SIP trunking:

- Microsoft Lync – SIP trunking is not natively compatible with Lync. An E-SBC can provide the TCP/IP to UDP conversion necessary to make it happen.
- Security – There will always be threats. Take an offensive position by protecting the network as well as the SIP or VoIP traffic.
- Think About Interoperability – There are many ITSPs today, and PBXs, and SIP phones and all kinds of great technology. Wise investments will handle the interop between whatever you have on the network today, and whatever you choose to purchase down the road.

Come to the free SIP Trunk-Unified Communications Summit at ITEXPO and learn everything you need to know on the what, why and how of these important topics. **IT**

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

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Unified Communications

CounterPath, GENBAND Join Forces

Under a strategic, long-term agreement, CounterPath Corp. will provide mobile client solutions for GENBAND's A2 Communications Application Server. The scope of the relationship includes joint development and marketing of enhanced unified communications capabilities that extend voice, messaging, presence and video services to mobile and tablet devices.

"By tightly integrating our A2 Communications Application Server with CounterPath's leading Bria softphone client, we are further unleashing the A2's promise of delivering rich, unified communications anytime, on any device and from any place," says Charlie Vogt, president and CEO of GENBAND. "This new alliance allows our customers to achieve significant cost savings, add new revenue-generating services and increase revenue per subscriber by extending all of the benefits that customers enjoy on their desktops to any device – creating a premium user experience."

snom Intros 7xx

A new line of business VoIP phones from snom called the 7xx series is designed for small and mid-sized businesses. The snom 720 and snom 760 business phones offer multiple programmable buttons and popular standard business functionality of the snom 3xx series with the advanced functionality, sleek styling and gigabit Ethernet switch found in the snom 8xx series to create an advanced desktop phone at a value-driven price. Available for order today by distributors and resellers worldwide, the snom 720 MSRP is \$219.00 and snom 760 MSRP is \$329.00.

"The new snom 7xx line of VoIP phones addresses a key need in the market for an affordable enterprise-class phone with the capabilities and flexibility to fit businesses of any size," says snom COO Mike Storella. "We believe the snom 720 and 760 should have broad appeal to customers requiring an endpoint that has exceptional design, performance and advanced IP communications features while still retaining the convenience and utility of a traditional business phone."

Polycom Improves the Whiteboard

The new Polycom UC Board is a \$1,999 tool aimed at improving communication

and collaboration in videoconferences by allowing meeting participants to leverage their existing video display screens and mobile devices as interactive whiteboards for video collaboration. When traditional whiteboards are used in a videoconference, remote participants sometimes have trouble seeing the whiteboard content, according to Polycom. The Polycom UC Board addresses that with its plug-and-play receiver and stylus for ease of use, and its ability to transform LCD monitors and display surfaces into video whiteboard spaces. The Polycom UC Board software natively integrates with the latest Polycom RealPresence Room HDX solutions.

"The Polycom UC Board is the first integrated video collaboration solution to make sharing whiteboard content as easy as picking up a pen," says Sudhakar Ramakrishna, executive vice president and general manager of UC solutions and chief development officer at Polycom. "That's great news for organizations of all kinds looking to bring remote employees and customers in a sales presentation, brainstorm, planning meeting, or training class with clear access to all the visual content being presented and discussed."

Avaya Gains on Cisco

Cisco has just a slim lead as the frontrunner in enterprise telephony equipment. While Cisco holds 30 percent market share, rival Avaya is now at 22 percent.

The enterprise telephony equipment space, for which sales fell 4 percent during the second quarter of 2011 over the same period in 2010, in this case includes PBX/KTS systems revenues, voice gateways and IP telephony.

"One of the most notable shifts in the 2011 vendor ranking has been Avaya's overtaking of Cisco as market leader in IP telephony in Q1 2011, which continued in Q2 as well," according to online financial site Trefis. "The communications giant has consistently lost market share in the IP telephony market to Avaya in the last few quarters, much like its share loss in the Wi-Fi equipment market to Aruba. We believe that IP telephony makes less than 4 percent of our \$20.88 Trefis price estimate for Cisco, which is dominated by Cisco's core offerings like network switches, routers and network services."

BroadTouch UI Spans Devices

BroadSoft recently introduced a new product line that provides enterprise end users and consumers with a single application to access all their unified communications services across any device. The new BroadTouch user interface enables service providers to deliver a range of user experience applications for voice, video, instant messaging and presence – all accessible on a single interface that spans mobile and desktop devices and platforms.

That's important, BroadSoft notes, given nearly one-third of travelers today use three mobile devices – a smartphone, laptop and tablet computer – on hotel Wi-Fi systems vs. a single one just three years ago, according to iBahn. BroadSoft also points out the Gartner statistic that 428 million mobile communications devices were sold worldwide in the first quarter of 2011, a 19 percent increase from the same quarter in 2010.

Distributed Software-based Media Processing Sees High Demand

Dialogic's PowerMedia HMP 5.0 distributed multimedia processing software enables service providers and enterprises to develop cloud-based HD voice and video applications on both Linux and Windows, with the high scalability and reliability they require, according to the company.

The new solution offers the ability to scale up to 5,000 simultaneous SIP connections or 1,500 voice sessions, HMP 5.0 provides for HD voice and video play/record, conferencing, multimedia streaming, transcoding, automated interactive audio and video solutions (IVR and IVVR), and high-end live interaction applications, such as contact centers and video portals. It also supports virtualization and runs on general-purpose servers without the need for specialized hardware, thereby reducing the total cost of ownership.

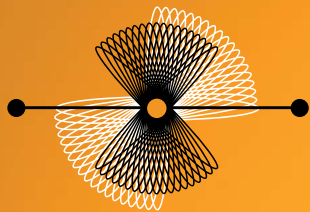
"With the ongoing proliferation of IP networks and cloud computing, distributed software-based media processing is in high demand– it holds a key for our solution and service providers looking to achieve both efficiency and innovation," says Franz-Josef Eberle, vice president and general manager of Dialogic's value added services and cloud enabling group.

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M2M Players Form Open Source Group

A handful of M2M players this fall formed a working group aimed at expediting the deployment, development and testing of machine-to-machine solutions. Founders of the effort include the Eclipse Foundation, integrator Eurotech, IBM, and Sierra Wireless.

"The M2M Industry Working Group is contributing source code to give developers the tools they need to build M2M applications," spokeswoman Lisa Brandli tells INTERNET TELEPHONY. "Since it is open source, there is an opportunity for the community to improve those tools with their own contributions."

Creating open tools, open protocols, open interfaces and open APIs will help reduce development time and costs, and ensure interoperability as deployments evolve over the lifetime of a project, according to the new working group. Open to any organization with an interest in M2M solutions, the group says its formation comes at a critical time, when "the market for M2M solutions is growing, but rapid growth is hindered by incompatible platforms and protocols that require developers to continually reinvent solutions."

The efforts of this new group build upon the work of the Eclipse Machine-to-Machine Industry Working Group and its Koneki project. Eclipse is a not-for-profit, member supported open source community, whose projects are focused on building

an open development platform comprised of extensible frameworks, tools and run-times for building, deploying and managing software across the lifecycle. Eclipse membership includes major technology vendors, start-ups, universities and research institutions and individuals.

Koneki aims to provide M2M solution developers with tools that ease development, simulation, testing/debugging and deployment. Initial open source contributions provide a common set of tools and APIs that simplify development of solutions across multiple environments, such as Linux, Java, and proprietary environments such as Open AT from Sierra Wireless, as well as standard communications protocols. That means fast time to market, and gives M2M customers more flexibility, and systems that are interoperable and don't lock them into a long-term relationship with a single solution vendor.

"We consider it critically important to provide the M2M developer community with the tools and support needed to deploy applications as efficiently as possible, and ensure that they can be easily maintained

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over time. Because of this, we have been developing Eclipse-based tools for many years," says Emmanuel Walckenaer, senior vice president and general manager of solutions and services for Sierra Wireless. "This collaboration with the Eclipse Foundation and our other working group partners is an extension of our commitment to build an open M2M ecosystem, not only for the benefit of our customers, but also for the long-term development of the industry."

Sierra Wireless – a company that offers 2G, 3G and 4G wireless modems, routers and gateways, and a suite of software, tools, and services to help customers bring wireless applications to market – says it made the first significant contribution to the Koneki project by providing a full-featured embedded development environment for the Lua programming language. Sierra Wireless also is a premium sponsor of EclipseCon Europe, which took place this fall in Ludwigsburg, Germany. **IT**

Sangoma Technologies Corp. recently announced that with the release of Elastix 2.2, all Sangoma TDM interface boards (analog, digital and BRI) are automatically detected and configured through Elastix's hardware detector interface tool. The web interface also allows the configuration of different parameters, such as echo cancellation, the mode on PRI cards (E1 or T1), timing source, line build out, framing, and coding. Elastix is one of the leading distributions of Asterisk and was designed to enable unified communications and VoIP systems within an Open Source solution. In addition, Sangoma this fall announced the beta release of the W400 Board, its first GSM-capable telephony interface board. The board allows IP PBXs built with Asterisk to communicate with the GSM cellular network. The board will enable an IP PBX to place calls even when no PTSN or Internet connection is available. This feature can be used to complete calls to and from the IP PBX to mobile phones for little or no cost.

SIPfoundry has scheduled its first users conference, sipX-CoLab, which will be held on March 5, 2012. The event will be followed by sipXecs technical training March 6 at The Lorey Student Center in Fort Collins, Colo. Colorado State University, founding member of the SIPfoundry Higher Education Program, will host the sipX-CoLab conference. The sipX-CoLab conference targets sipXecs users, developers, IT consultants and integrators, technology business leaders, VARS, resellers, solution providers, entrepreneurs, EDU IT professionals and fans of open source communications.

Xilinx Inc. has made its first shipments of the Virtex-7 2000T Field Programmable Gate Array, which the company says is the world's highest-capacity programmable logic device. It was built using 6.8 billion transistors, providing customers access to an unprecedented 2 million logic cells, equivalent to 20 million ASIC gates, for system integration, ASIC replacement, and ASIC prototyping and emulation. This capacity is made possible by Xilinx's Stacked Silicon Interconnect technology, which the company says is the first application of 2.5-D IC stacking.

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Managing Transition

For nearly a hundred years, the technology of telephony was relatively static. In the late eighties, the merging of "telephony" and "computing" created dynamic change. Computer Telephony Integration spurred innovations in adjacent technologies like Text-to-Speech, Automated Faxing and Speech Recognition. More disruption was then caused by rapid innovations in VoIP, Open Source Telephony and the move toward cloud-based communications.

By sponsoring communities in these technologies, Sangoma hopes to help as many companies as possible to navigate these rapidly evolving technologies:

- **The Asterisk Community** will serve to introduce new players to Open Source Telephony and advance innovative developments around that technology.
- **The IP PBX Community** will help those who are just now moving their Businesses and Enterprises from TDM-based technologies to an all IP-based infrastructure.
- **The IP Telephony Community** will serve as a resource for Developers, SMBs, Enterprises and Carriers who are looking for the most innovating and up-to-date information and solutions in this space.

Learn how to manage the transition and visit these communities on TMCnet today!

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By Peter Radizeski

Prospecting for Gold

Prospecting is question No. 1 for sales people. Without a database of prospects or old customers to sift through, how can an agent get started prospecting?

One way is the carrier lit building list. Many carriers that own fiber provide these lists to their agents and sales people. It is a ready-made prospecting list.

Yet this will be a cold calling exercise, which makes it uncomfortable. There are advantages to this list. One advantage is that you know there is lit fiber in the building already. Everyone loves fiber! This precludes the whole service inquiry procedure to go through. The carrier should be able to tell you what services are available in that building and the prices. This gives you a head start.

If you Google the address of the lit building, it will give you an abundance of information. Notice that I didn't say: Go door knock! First, you want to create a cocktail napkin plan. What will you try to sell to whom? What will you say? Who do you need to talk to?

By looking at the tenant directory, you can find out who is in the building. By cross-referencing that with your own contacts and LinkedIn network, you can see if you have a contact for that business – maybe just a second degree link for an introduction. (Maybe your network will include someone who can get you into the building to door knock or drop off leave behinds.)

Also, there are a number of databases to get additional info about each business.

Now you have an idea of whom to start with. Next is what will you say? Various

approaches could be used, including the telecom audit, network assessment and survey devices. You could try the promo pitch, "Hi, this is _____ calling on behalf of [carrier] with a promotional offer for a redundant Internet connection for your office. How important is Internet to your business?"

Remember that each business has different telecom (and IT) needs, depending on size, office type (branch, remote or HQ), etc. Some of this data can be gleaned ahead of time; some you can ask during the sales call.

The key is to get going!

If you want more detail on this may I suggest my latest book, LIT BUILDINGS, available at sellem.com.net. **IT**

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



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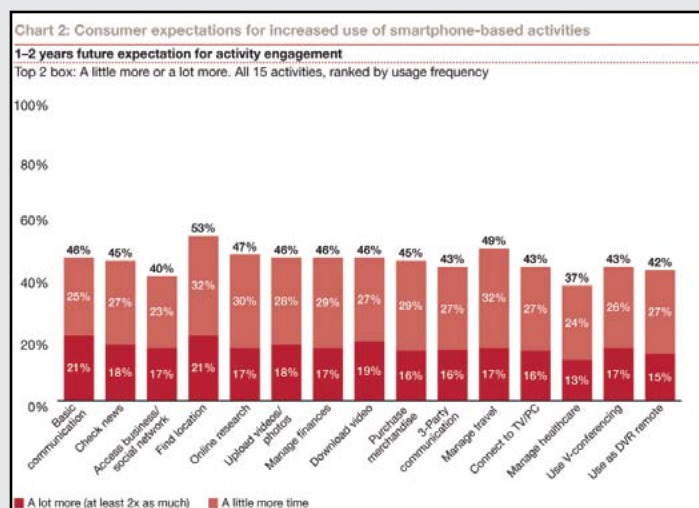
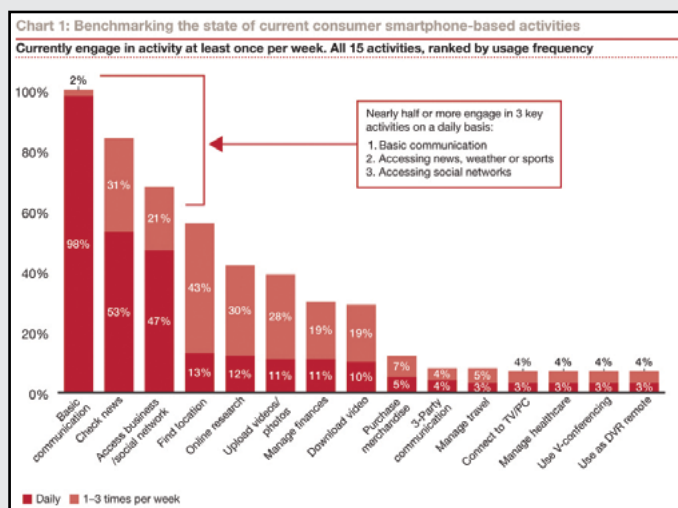
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What's Next in Smartphone Usage

Smartphones have become so ingrained in our personal and professional lives that it's hard to believe it's only been about five years since Apple introduced the iPhone. Consumer enthusiasm for these devices is only expected to intensify in the next two years, according to PwC, as apps become more creative and convenient.

merchandise, managing travel or personal finances, and downloading or streaming videos – are ripe for transition to smartphones, particularly companies that offer apps and functions that make those activities more secure and convenient,” says PwC.

Today just 12 percent of smartphone owners use these devices to purchase merchandise, but that's expected to



PwC says it expects the next two years to bring significant growth in smartphone use for basic communications, e-commerce, managing health care and videoconferencing.

Twelve percent of smartphone owners use these devices to purchase merchandise, but that's expected to reach 45 percent in the next two years.

“The study finds that tasks that consumers traditionally use their browser to perform – such as purchasing

reach 45 percent in the next two years, at least according to those surveyed.

And 16 percent of those surveyed said they expect to at least double the time they spend shopping online.

Location-based services is another area poised for smartphone use growth in the next couple years, according to the PwC report. As of right now, 69 percent of 18- to 24-year old individuals use their smartphones at least weekly to find a location or place; 21 percent use smartphones daily for this purpose.

The two-phase effort PwC conducted to capture this data included a spring 2011 survey of 3,282 smartphone owners between the ages of 18 and 59, paired with research involving focus groups, in an effort to gain a deeper understanding of behavior related to smartphone use. **IT**

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SimpleWan Introduces vMPLS for Multi-location Organizations

A new company called SimpleWan delivers a subscription- and hardware-based service called vMPLS that enables secure multi-location connectivity over legacy and/or newer broadband connections.

“It’s MPLS virtualized,” says Comvoice CEO Erik Knight.

SimpleWan is a Prescott, Ariz.-based spinoff of Phoenix-based hosted VoIP provider Comvoice, which Knight says saw great success with the WAN service before spinning it off into a separate, privately-owned entity.

The new company’s vMPLS service enables customers to bring together their locations over any type of broadband connection or connections from any service provider or collection of carriers. That means customers have more freedom to choose the broadband carriers of their choice and can leverage whatever brand of broadband is available and most desirable at their particular locations.

can instantly pull real-time sales numbers from all of their different point of sale machines, without a batch report, and much more real-time information from all locations,” according to the SimpleWan website.

One of the case studies on the SimpleWan website is about Arizona Charter Schools, which in the past used T1s to connect its data center with various school sites, and ran multiple Avaya PBXs at each location. Recently, the educational organization overhauled its IT infrastructure by implementing 50mbps connections as the primary data link and DSL/wireless connections as a failover route. It also installed a new IP phone system to centralize communications and enable cloud-based unified communications. “By utilizing SimpleWan SmartRoute technology each of these routes can be automatically assigned and rerouted when connectivity issues arise. This ensures that they have the highest quality wide area network routes available for their data-sensitive applications, including their newly deployed VoIP phones,” the case study reads.

Knight says SimpleWan, which operates three data centers with plans to bring two more online by March, currently

SmartRoute Technology leverages a multitude of private backbone connections to provide the shortest distance routing between endpoints no matter where they are located.

It SmartRoute Technology leverages a multitude of private backbone connections to provide the shortest distance routing between endpoints no matter where they are located. And SimpleWan’s channel partners can work with customers to help them select the best routes/connections based on cost.

Knight says SimpleWan has been dealing with a lot of companies with a lot of small locations, like owners of multiple franchises, and charter schools, for example.

“In a nutshell, a SimpleWan customer can see their security cameras at all of their different offices on a single screen, they

has about 30 customers nationwide; expects to double that by the end of the year; and anticipates it will reach 1,000 customers by the end of March 2012.

The appeal of the SimpleWan solution is clear, Knight adds, because it allows businesses to take advantage of new broadband options that are much faster and less expensive than traditional T1 connections; unlike MPLS, vMPLS enables businesses to use multiple carriers; it’s a fully meshed solution; and SimpleWan’s monitoring allows it to provide customers (via notifications on their cell phones if they like) with bandwidth statistics, routing path details, and uptime and temperature information on equipment. **IT**

A hand-drawn network diagram on a white napkin. The diagram features several colored circles (orange, blue, green, red) connected by lines, representing a network topology. A central blue circle is connected to several other blue circles. To the right, there are several colored squares (pink, yellow, green, blue, red) connected by lines, representing a different network topology. The URL 'high-definition-digital.tmcnet.com' is written in black ink across the middle of the napkin.

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The Expanding Possibilities of Carrier Ethernet

New Ethernet solutions are enabling carriers to make their services available on a much wider basis and at higher data rates than once imagined possible. That includes a range of both copper- and fiber-based solutions.

For example, Actelis has been working with carriers to implement its Ethernet over copper solutions with Dynamic Rate Boost.

Joe Manuele, vice president of world sales and customer support at Actelis, explained that Dynamic Rate Boost eliminates crosstalk on copper pairs, thus allowing the service provider to extend its reach or offer more bandwidth to select customers. Manuele added that Actelis and its customers are really excited about the symmetrical 10mbps Ethernet connectivity enabled by the solution, which he said is the first cross-talk cancellation of its kind now in production. While it's based on an industry standard, he explained, implementing that standard and offering it as a system-level solution is unique.

One CLEC using the Actelis solution leveraged it to convert existing customers that had been connected over T1s, sometimes using up to three T1s, to carrier Ethernet delivering 2, 4 and 6mbps over copper pairs. The CLEC, he added, also launched 10mbps symmetric services to attract new customers.

Meanwhile, MegaPath recently announced it is using a combination of ADTRAN's Total Access 5000 and NetVanta gear to deliver what the companies say is unprecedented carrier Ethernet-based capacity over copper connections. The effort is also noteworthy, they say, in that it will elevate MegaPath to be the single largest nationwide Ethernet services provider as of mid 2012.

As of last fall, MegaPath was using ADTRAN gear to deliver 20mbps connectivity over copper in the Los Angeles market, but the company was building out such

service to 15 markets, Aamir Hussain, senior vice president and CTO at MegaPath, recently told INTERNET TELEPHONY. In addition to the geographical expansion, MegaPath's partnership with ADTRAN will enable it to ratchet up copper-supported carrier Ethernet connections in any of its markets to 100mbps symmetrical or even as high as 400mbps asymmetrical by leveraging VDSL2 running over up to eight copper pairs, added Hussain, noting that will happen as customers demand and loop distances allow. Having this kind of flexibility and expandability is important, added Hussain, given that only about 22 percent of buildings are fed by fiber.

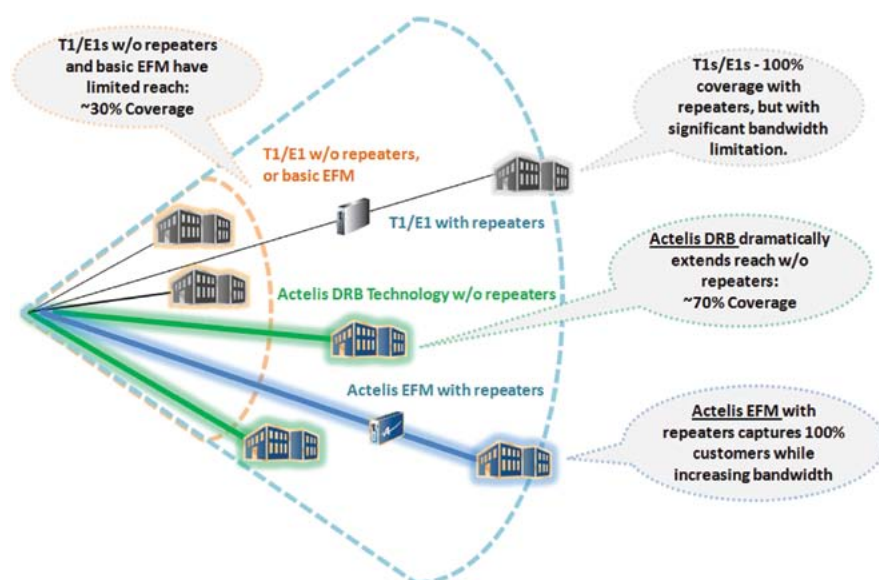
MegaPath will leverage these connections to deliver such business services as high-speed Internet access, MPLS networking, multi-site IP VPN and private data

networking for large corporations. As part of the effort, MegaPath has more than 200 central offices currently in service, planned to offer services in 400 central offices by the end of 2011, and expects to reach more than 680 central offices by June 2012.

Kevin Morgan of ADTRAN said this announcement is yet another indication that ADTRAN continues to push the limits of copper. Up to 400mbps is six times higher than Ethernet over copper solutions typically deliver, he explained, adding that means "proximity to fiber is no longer a limiting factor" for carriers like MegaPath that want to deliver such premium carrier Ethernet offerings.

"We've taken the concept of bonding to offer some of these higher-grade, carrier-class premium service offerings" and without the requirement for microwave or fiber, said Morgan.

Kurt Raaflaub, manager Ethernet and optical solutions for the carrier networks division at ADTRAN, noted that band-



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width demand is always on the move, and that 100mbps and 1gpbs connectivity is now predominant. A year ago, he said, the company added lambdas to enable carriers to bring fiber-based connectivity up to 10gpbs. But fiber and microwave reach only about 20 percent of customers, he said, so ADTRAN recently introduced three products that enable 100mbps connectivity on copper. That includes the NetVanta 868 and 850 and the Total Access 1424S-CE.

In addition to the above-mentioned advances, many other service providers, including some of the world's largest carriers, continue to expand their Ethernet services.

During the first half of 2011, Orange Business Services added more than 1,100 Ethernet connections, an increase of more than 20 percent.

"Orange Business Services retained the top position on the mid-2011 Global Provider Leaderboard by delivering higher speed Ethernet connectivity to IP VPN customer sites across its extensive global Ethernet footprint," said Rick Malone, principal at Vertical Systems Group.

Meanwhile, BT in mid November announced the expansion of its Ethernet Connect services to 28 countries and the launch of international E-LAN services. Ethernet Connect is BT's adaptive Ethernet VPN service, which is designed for large organizations that require exclusive control over their IP architecture.

U.S. CLEC Integra Telecom Inc., meanwhile, last year said it is expanding its fiber-based network by funding 52 capital projects, 31 of which will be

fiber expansion into new buildings and 21 of which are capacity augments at existing on-net sites. Integra has more than 1,700 fiber-fed buildings and 5,000 miles of high-speed long-haul fiber. The network delivers to customers speeds from 5mbps to 10gbps and services include MEF-certified Ethernet.

"Business Ethernet is a key ingredient to insuring that mission critical communications for enterprises, government entities and larger organizations are 'always on,'" said Bob Meldrum, vice president of corporate communications at tw telecom, which connects more commercial buildings to its fiber network infrastructure than any other competitive communications provider and has the third highest market share of retail business Ethernet ports in service. **IT**

Carrier Ethernet Changes Gateway, Timing Requirements

As carrier Ethernet and mobile networks have grown, the gateway has taken on new meaning.

In networking parlance, the term gateway typically is associated with a box that sits between two networks, perhaps between the network owner and an access provider, to interconnect SONET and a T1, for example, said Jim Theodoras of ADVA Optical Networking. Since networks have moved to IP, MPLS networks have become mainstream, and access networks increasingly include Ethernet connections as well as T1 and T3 lines, he added, the intersections at which gateways typically sit have become a lot more complex. Theodoras referred to it as a rat's nest of legacy voice, packetized voice, handoff, caching, SMS messaging, clock synching, and more.

Deploying more and more equipment and technology at these network junctions is not an affordable or manageable way to do things in the long term, he said. The better solution is to implement a gateway to handle all this converging traffic so the core network can stay clean and efficient. Theodoras said in a sense the gateway in this scenario is like a stop light at an entrance ramp to a highway – if you back up people at access ramps, he said, the big road should work better.

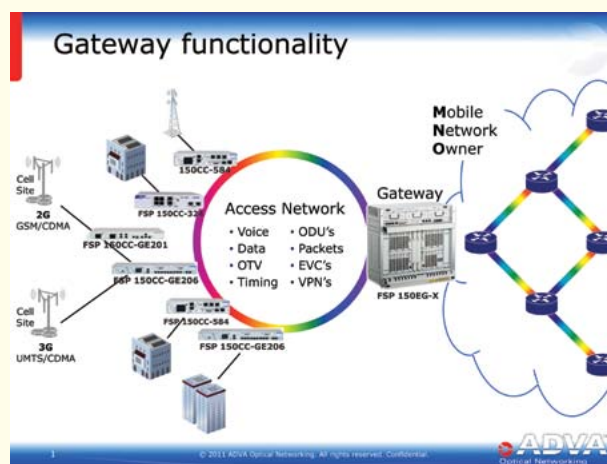
To do all that, ADVA launched its FSP150EG-X gateway. It's a chassis and cards that look like an Ethernet switch, but all ports are carrier Ethernet enabled and it can support five clocking domains in one box. Some Ethernet switch

providers call their switches gateways, Theodoras said, but there's not a single clock input on some of those switches, and you can't have a gateway without a clock.

Speaking of timing and synchronization, revision 3 of ADVA's 206 product has new clock functionality, including support for a variety of standards including SyncE.

Theodoras said there's a need for better timing even than GPS can provide. In fact, some customers say clocking is so important that they're running it separately from their data. Customers sometimes want to do that because clocks sometimes need separate nodes, and sometimes customers don't want clocking to go through big routers that can cause clock degradation, he added. ADVA solutions can support such clock distribution networks, he said.

– P.B.



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Chicago's Columbia College Lights Up

Technology is always moving forward, and we continue to make amazing gains in connectivity, devices and interoperability. At the same time, it's sometimes surprising just how low tech things can be behind the curtain.

For example, while early video on demand implementations allowed users to order movies from home with a click of the remote control, these same systems often relied on individuals on the network side to plug in the movies manually to the VoD servers. This mode of operation was dubbed sneaker net.

Until recently, students at Chicago's Columbia College, the largest private media and arts institution in North America, relied on their own version of sneaker net. In this case, it involved students hoofing it through the Windy City with hard drives to get their big media files from one school building to another. This method of transport was necessary because the files generated by the college's film, photography, video game and other students often were too hefty to be sent over Columbia's connections, which ranged between 10mbps and 300mbps.

But all that's changing due to a new solution Columbia and its vendors CDW-G and Sidera Networks have put in place. The 10gig network, which had its initial turn up last month and should be complete in February, will deliver 500mbps connectivity to all of the college's administrative and classroom buildings, which number 15 and span a distance of 10 blocks. If additional bandwidth is required, the network can burst on demand without the need to provision new hardware, and connectivity speeds can be increased across the board if required.

"The majority of our academic programs are digital in nature, and students need to be able to access and move large files over the network," says Bernadette McMahon, associate vice president and chief information officer at Columbia, which has 12,000 students and more than 2,000 academic staff. "On our older network, students have to physically walk large audio and media files between buildings. With dark fiber, students can

move and access their course files with a click of a mouse from any building on campus."

Richard Piotrowski, director of infrastructure for information technology at Columbia, explained that the college's partner CDW-G tapped Sidera Networks to provide the dark fiber and helped Columbia equip that infrastructure with the gear to light up the 10gig network. Sidera is also Columbia's new Internet service provider. But Columbia owns and manages the 10gig network.

Sidera already had in Chicago's South Loop the necessary fiber for the job, but as of late October, when CDG-W and Columbia sources spoke with INTERNET TELEPHONY, Sidera was digging in the streets to get fiber all the way into the college's buildings.

Considering that digging was involved, you'd think that this job might have been a tough one to justify financially. But, in fact, the job involves a pretty quick return on investment (within three years), according to Andy Lausch, vice president for higher education at CDW-G. Columbia's McMahon adds that the college expects to reap \$300,000 to \$400,000 in annual savings over three years. So not only does Columbia get much higher bandwidth and lower costs out of the deal, she says, it also gets a more redundant system.

Tony Bloom, vice president of wholesale at Sidera Networks, explains: "Columbia College Chicago built its dark fiber solution in a ring topology, which independently connects each building to provide the college with built-in redundancy." That means if one section of the fiber is cut, the college's network technology automatically will re-route data around the ring, ensuring that the network remains up and eliminating the risk of data loss.

Before moving to the new network, Columbia relied primarily on AT&T's GigaMAN and OPT-E-MAN services, and an array of Internet service providers to serve the college's various buildings, says Piotrowski, noting that required his staff to manage many service provider accounts separately.

Columbia's McMahon says that CDW-G made the process of implementing and moving to the new solution quick and painless. **IT**

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Columbus Security Effort Includes City-wide Access Control and Video Surveillance

The city of Columbus, Ohio, is quickly becoming a role model of municipality security with its ongoing unification of access control for city buildings into one centralized location and its use of a fiber-optic network that saves money and helps increase public safety.

Columbus is the nation's sixteenth largest city. Regardless of size, however, it is also one of the most progressive metropolises in security and access control. Most large American cities might have basic access control systems in city hall or police facilities. Columbus' ongoing efforts include the unification of dozens of city facilities under one IP-based network to help make possible ongoing high technology upgrades, such as city-wide access control and video surveillance. Overseeing the ambitious technology venture are city officials Miki Calero, chief security officer; Michael Plumb, security manager for facilities; Dave Bush, deputy director; and Johnny Scales, facilities administrator.

While the city has made significant cost outlays, unifying access control under one server-based system will save Columbus hundreds of thousands of dollars in equipment and labor in the long term as more buildings are added to the city-wide security infrastructure. Matrix Systems is providing the software and lending engineering, installation, integration, system testing, upgrade implementation, software training and 24/7 customer support to the city's security efforts.

Before today's technology became available, Columbus had separate systems with its own servers and building controllers at city hall, municipal court, the police department, public utilities and other major facilities. The \$500,000 command center was the foundation of centralizing security in the city hall-based department of technology. However, the subsequent success of bringing the municipal court's access control online convinced city officials nearly anything was possible with the combination of skillful integration and today's technological advancements. Integration included a quick and inexpensive conversion of thousands of municipal court database entries, from seemingly incompatible systems, into the city's fledgling centralized security. Now with municipal court online, the public utilities facility's connectivity is the next goal.

Video Surveillance and Management

The centralization has enabled a variety of programs to terminate at the command center, such as the city's new \$166,000 video surveillance system, which was funded by a 2009 grant from the U.S. Department of

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Homeland Security. The cutting-edge video surveillance program includes more than 200 cameras by Bosch Security Systems, Fairport, N.Y.; one HD camera by Axis Communications, Chelmsford, Mass.; and video management software, which is fully integrated into the Frontier access control system. Nearly 100 cameras are spread throughout the facilities; however, 112 outdoor cameras are used in the neighborhood safety project. Video recording capabilities include 12 terabytes of video storage by Pivot3 of Austin, Texas.

As part of the centralization, the command center has its own 24/7 video surveillance police personnel and monitoring equipment. When triggered by an alarm situation however, Frontier automatically displays the incident on the security officer's workstation monitor for review. In addition to security, city-wide video and recording capabilities also have the residual police benefit of helping solve and prosecute crimes, according to Plumb.

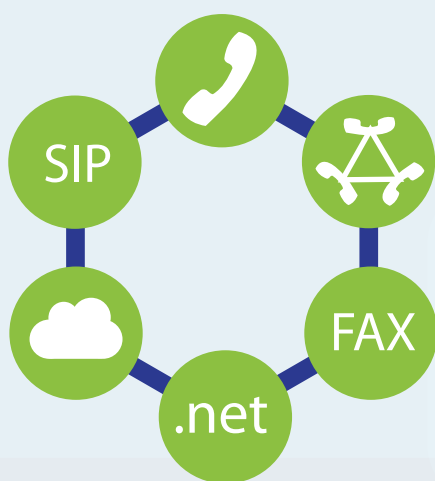
"Some cities have public safety departments monitoring neighborhood cameras, but few have it all culminate in a centralized





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command center like Columbus," says Plumb, who worked with Calero to develop Columbus' strategy during a review of Chicago's neighborhood watch program – one of the nation's premier neighborhood safety endeavors.

Affordably Unifying Security

The city-wide fiber-optic IP system and the Matrix Systems Gateway component made the unification connectivity cost-efficient and practical. Instead of expensively outfitting every newly added building with a server and access control panel, locations with 16 or fewer card readers use an MSG to communicate with the city hall base server. The 1,200-square-foot Pride Community Center, which has only two doors and several employees, for example, tapped into the city's security infrastructure and saved thousands of dollars in equipment and labor costs, and provided unprecedented security benefits at the site.

Calero and Plumb have offered building connectivity to most city department heads and facility managers. Thus, Columbus has steadily added city service buildings to the command center access control, such as parks/recreation, health, building development, public services and fleet maintenance. Consequently, city facilities with a small number of doors and employees now have unprecedented security capabilities. They benefit from audit trail recording, video surveillance, immediate credential access for new employees, system-generated lockdowns, and other technological improvements at just the cost of card readers and an MSG.

"We've had a growing reception to our offer of leveraging equipment, infrastructure and other security resources," Calero says.

Any city facility that comes online gets the benefits of 24/7 monitoring and its state-of-the-art equipment, such as the two Frontier workstations, five 42-inch and five 19-inch wall monitors by Bosch; Orion Images Corp., Westminster, Calif.; and Dell Computers, Round Rock, Texas.

While access control is centralized, the city's credential production, which has generated badges for more than 5,000 employees, is divided into three locations in city hall and two satellite sites for convenience and redundancy. The Frontier access control software also allowed for the integration of the city's three badge printers and support software by Digital Identification Solutions (DIS-USA) of Greenville, S.C.

Columbus' security plans are rich in technology. The city is integrating a secure visitor management system from EasyLobby, a Needham Heights, Mass.-based Matrix Systems partner, into the access control system and making it available to all city buildings with connectivity to the central command center. City hall already uses EasyLobby for the 15,000 visitors it receives annually. Additionally, wireless biometrics, video analytics and mobile apps are all possible future technology upgrades with Frontier's open architecture design.

Columbus is a city that's second to none in security.

"The possibility of connecting any building to our command center via the existing infrastructure and monitoring it for security are capabilities few cities the size of Columbus have at their fingertips," says Calero. **IT**

James Young is president of Matrix Systems (www.matrixsys.com).



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Gathering Clouds

Telesphere Aims to Consolidate a Fragmented Industry

The cloud services space is highly fragmented and could benefit from consolidation, and Telesphere believes it's in a plumb position to pull things together. That's the word from CEO Clark Peterson, who recently spoke with INTERNET TELEPHONY at the company's headquarters in Scottsdale, Ariz.

Backed and operated by the same group that started and built Cellular One/ATT Wireless, Clearwire, Nextlink, Nextel and XO, Telesphere is actively pursuing a role as a key cloud services industry consolidator.

The company is already a relatively big fish in the cloud services pond, Peterson indicated. A nationwide provider, Telesphere has nine points of presence, and customers in almost every state.

It is one of the largest pure-play cloud providers using the BroadSoft platform. Telesphere offers a range of cloud-based voice and data services, including data backup, fixed/mobile convergence solutions, hosted Exchange, Internet access, IP telephony and related features, managed firewall, SIP trunking, video services, and more. Telesphere carries these services, all the way to the customer location, over its secure IP MPLS network. The company also can provide endpoints, such as Polycom HD phones, as part of its end-to-end solutions. Professional services are included as part of the Telesphere service packages.

About two years ago Telesphere bought Unity Business Networks out of Denver, which gave it what Peterson called an unparalleled billing and operational support system platform. The BSS/OSS can do everything from generating sales proposals, to monitoring services on an end-to-end basis, to enabling customers to provision their own features. "So incredible control over the provisioning part and the customer service part of our business," he added.

Telesphere's customer target is large, multi-location businesses that want to pull together somewhere in the neighborhood of 60, 70, or 100 offices around the country.

Over the last four years Telesphere raised \$50 million, which enabled it to build a national network and multiple offices to serve close to 30,000 users

around the country. The company has grown 310 percent over the last three years, and has received various accolades for its fast growth. It's been cash-flow positive for almost a year, and Peterson said Telesphere is just now "turning the corner on profitability."

Any cloud service provider acquisitions by Telesphere are likely to involve equity, as opposed to being all-cash deals, said Peterson. Purchasing other cloud providers, he explained, would enable Telesphere to attain new economies of scale, and to elevate the cloud services industry as a whole. To be a high quality provider of communications services, he continued, businesses need to have a lot of pieces in place, including good engineers, network operations centers, and reliable and secure networks, among other

things. So cloud providers need to scale to get the skill sets and equipment they need.

The fragmentation in the cloud services market is also somewhat confusing to channel partners, customers and investors, he added, so the space as a whole is likely to benefit from consolidation. For example, many agents are now ready to move into selling cloud services, he said, but are not sure who to partner with because they will need to rely on those partnerships for their cloud residuals well into the future.

Of course, Telesphere is not the first to show an interest in purchasing cloud service providers.

In 2010, CBeyond paid \$4 million for Arretta. The same month, M5 Networks invested \$8 million in Geckotech. And 2011 saw Earthlink acquire STS Telecom, TelePacific snap up Telekenex, West Corp. grab Smoothstone for \$120 million, and Warwick Valley Telephone get its hands on Alteva for \$17 million. ■

Building Bridges

By Paula Bernier

The cloud industry is not the only place Telesphere aims to bring together disparate pieces. The company is doing the same thing in terms of communications services for its customers.

CEO Clark Peterson said Telesphere's management believes in the future people more and more will have their own Ethernet connections. In this world, he says, Telesphere will ride over those links with robust MPLS circuits customers can trust.

Also, he said, the endpoint is not necessarily something Telesphere will need to provide going forward, given the growing bring-your-own-device trend.

"Our biggest push going forward is on the mobility side," said Peterson, adding that going forward that com-

pany is positioning itself as a communications-as-a-service provider.

What Telesphere will bring to the table, he explained, are voice, data, video, managed firewall, data backup and other services – and the ability for such services to work across any devices and networks seamlessly.

"Where we're going is [to an environment in which] the decision of what mode of communications to use is based on me," he said, and the bridge between the various modes happens in the cloud.

Telesphere already is providing this kind of bridge through its VideoConnect solution, which bridges the gap between various videoconferencing room systems, desktop/webcam solutions, and mobile devices like smartphones and tablets.



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Bright Side of the Road

Key Industry Players Mostly Upbeat about 2011, the Year Ahead

The economy at large didn't make for a very pretty picture in 2011, and most folks don't expect it to improve significantly in the year ahead. But while much of the world continues to grapple with high (although slightly improving) unemployment and foreclosure rates, depressed home values, and the sovereign debt crisis, a fair share of businesses have been remarkably resilient and, in their communications with INTERNET TELEPHONY, many communications industry players offered upbeat assessments both of the year past and for 2012.

Here's what we're hearing, and you may be surprised to hear that it's mostly good news.

The Economy & Prospects for Growth

"The future has never looked brighter for business and governments to employ technology to generate growth, solve industry challenges, and enrich lives and our global society."

– *Mike Palmer, vice president of enterprise strategy & marketing, Verizon's global enterprise unit*

"In the 10 years from 2005 to 2015, telecom service provider revenue has shown and will continue to show year-over-year growth every year except in 2009."

– *Infonetics Research*

"I believe the economy is going to remain tough and possibly worsen due to inflation and pressure on the dollar. This will obviously make the overall business climate increasingly difficult as we move into 2012 and possibly even into 2013. For those special companies that truly respect their customers and solve problems, however, opportunities will remain. That's what Interop does, and we expect to have a strong 2012."

– *John A. Dwyer, president and CEO of Interop Technologies*

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"Fiscal year 2011 was a break-out year for Clearfield, with revenues and gross profit both up 44 percent and 60 percent respectively."

– *Cheri Beranek, CEO of fiber management product outfit Clearfield Inc.*

"For overall global business, economics and civilization I'm not optimistic that 2012 will be great for most.... For our business and industry, I am very optimistic, as we believe that we are doing the right things to support the global changes, improve ourselves and grow our business."

– *Benjamin Sayers, CEO of VoIP Supply, which grew its business year-over-year by 15-20 percent in 2011*

"Our business thrives in hard overall financial hard times. Small businesses will continue to look for more value in all their systems. We will continue to be the lowest overall price, and highest overall quality, virtual PBX and phone service company in the world today."

– *Gary J. Johnson, president and CEO of Voice Carrier*

"What I find amazing is that even during globally difficult economic environments, we're one of the few companies to drive profitability. In 2012, we're aiming to drive even stronger financial success."

– *Brian Protiva, CEO at ADVA Optical Networking*

"From a global perspective, the world economy in 2012 has a somewhat worrying outlook. However, for the last eight years, Telio has been doing quite well. People need to communicate during the tough times and cost effectiveness is even more important than usual."

– *Alan Duric, CTO and co-founder at Telio*

"The telecom industry continues to sustain growth thanks to new devices and applications, and we expect this to continue through 2012. Recently, we have witnessed some amount of discretionary spending undertaken by telcos, and we look forward to further monitoring this in 2012."

– *Vivek Kalra, senior vice president of Tech Mahindra Americas*

"I'm optimistic that the general economy will get better in 2012, but even if it remains unsettled, I believe videoconferencing will continue to grow."

– *Bob Romano, vice president of corporate marketing at RADVISION*

"2011 was a strong year for Speedflow, and we are excited about the momentum we are generating across our business.... Businesses are very likely to spend more on automation in 2012 since it is a key to success in a fast-evolving business environment."

– *Vlad Ellis, CEO at Speedflow Communications Ltd.*



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"Our outlook is great, but the overall economy is in trouble without major changes in Washington."

– *John Horn of machine-to-machine solutions provider RACO Wireless*

"A fire needs to be started to get the economy going, and it can't be done if the Fed is putting out all of the sparks by protecting the industry incumbents."

– *Mike Ross, president of cloud telephony outfit 4PSA*

"While the economy is clearly challenging in the U.S. and globally as well, our outlook for 2012 is very promising.... By enabling service providers to leverage the same platform for both analytics and to offer a security service, they can generate new revenues with value-added services and reduce churn among their subscriber base. Together these make for a compelling business case that easily justifies the investment."

– *Brendan Ziolo, vice president at Kindsight*

"I think just as governments around the world are looking at ways to jumpstart their economies, businesses should be, too. Maybe we all need to stop worrying about the next quarter's results and focus more on long-term goals and the benefits they may bring us all down the road."

– *Tanveer Sharif, founder at mobile calling platform company Vopium*

The Channel

"We expect another flat year in IT/telecom spending and continued consolidation within the channel."

– *Rick Hirsh, CEO of Transcend United Technologies*

"2011 yielded some surprising momentum for the channel, with the cable industry, cloud providers and more making more commitments to the channel. In 2012, we are going to see more education, structure, consolidation and certification hit the channel. M&A isn't done, and companies with solid channel relationships will be acquired. It brings revenue, relationships and a sales force in one grab."

– *Peter Radizeski, head of telecom consulting agency RAD-INFO Inc.*

Cloud & Data Center

"The economy is still tender; however, the convergence of mobile and cloud-based technologies will lead the way towards new business models and efficiencies that will drive growth."

– *Ray Greenan, marketing director of communication service provider industry at Symantec*

"In 2012, cloud services will become even more important to SMBs. Our State of SMB IT survey of 1,295 IT professionals, which we conducted in the fall of 2011 through the Spiceworks Voice of IT Market Research Program, found that 46 percent of SMBs now use cloud services, which is up significantly from the 28 percent that reported using cloud services in the first half of 2011."

– *Nicole Tanzillo, IT marketing manager at Spiceworks Inc.*

"In this economy, cable companies are finding that the cloud is faster and cheaper, therefore the industry is transforming from the traditional cable TV platform into a connected technology platform."

– *John Dahlquist, vice president of marketing at Aurora Networks*

"While in 2011, cloud hype reached a fever pitch and the BYOD phenomenon at times left IT departments scratching their heads on issues of reliable and secure mobility, 2012 will mark the beginning of cloud realism."

– *Adrian Brookes, vice president of strategy and technology office for Siemens Enterprise Communications*

"The cloud and tablets are just getting started."

– *Alex Quilici of YouMail*

Network Infrastructure

"Two major milestones stand out in 2011. First, GENBAND successfully completed the integration of Nortel's IP Switching assets, which was the company's largest acquisition in its history. The acquisition not only changed GENBAND but also changed the global telecom landscape."

– *Mehmet Balos, chief marketing officer at GENBAND*

"We maintain our view that the sovereign debt crisis that is paralyzing Europe continues to have little impact on our telecom capex forecast. As long as credit remains available to telecoms at a fair price, the ongoing sovereign debt crisis should have little impact on telecommunications equipment spending. Investment plans across world regions suggest mobile broadband and FTTx is the name of the game going forward."

– *Stéphane Téral of Infonetics Research*

"The perspective that this is a commodity business that is just about capacity at the lowest price per bit needs to be overturned in favor of the reality that although price per bit is important for basic connectivity services, differentiated services offerings which are value-based, not price-per-bit based are equally – or even more – valuable to end users and are also fundamentally important to the economics of network capacity expansion. A vital part of this realization I think is that application developers and web service providers come together with network operators to create this future, rather than staying at arms' length from each other and politicking in front of the media and regulators."

– *Alcatel-Lucent CTO Marcus Weldon*

"Federal regulation and a new breed of over-the-top competition continue to push our U.S. customer base to finalize the building of all-IP networks that meet the demand for compelling applications and new methods of interconnect. U.S. wireless operators are leading the world, finally, with 4G VoLTE deployments. European and Asian mobile operators are fully committed to RCS or RCS-e. Operators worldwide are seeing how the explosive, but non-linear growth of application signaling and its associated media is driving the need for a new breed of session border controller."

– *Kevin DeNuccio, CEO of Metaswitch Networks*

"Many carriers are letting emotions get in the way of fundamentals regarding the economy. Carriers need to understand that volatility in markets is normal, and they must understand what is driving the volatility in order to make

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sound investment decisions for expansion of networks or development of new services.”

– *Ray Mota, managing partner for ACG Research*

“The adoption of SIP trunking continues at a torrid pace, as enterprises continue to realize the cost and productivity benefits from end-to-end IP communications. In 2012, we see this trend becoming even broader, with enterprises looking to leverage their investments in service delivery networks to enhance customer experience and drive new business opportunities.”

– *Andy Ory, co-founder, CEO and president at Acme Packet*

“2011 was an eventful year for Comptel. We got a new CEO (me), we closed a number of significant deals (most notably with Australia’s NBN Co, beating 80 competitors), and we sold some of our fulfillment software assets (AXIOSS) to Cisco, which enables us to accelerate the development of our next-generation fulfillment platform – due out the first half of 2012. We also secured a few new policy control and charging deals, confirming our view that policy control is becoming more of a business, as opposed to a network-only, function.”

– *Juhani Hintikka, CEO of Comptel Corp.*

Open Source

“Even with an industry-wide reputation for some of the highest quality products available on the market, Sangoma’s evolution as a company had slowed, and we had experienced flat sales for a couple of years. The new leadership team has re-ignited the growth engine, and we are 100 percent focused on delivering more value to our customers and to our distribution partners around the world. We have already begun to see results. In just our first three quarters together as an executive team under Bill’s leadership, our quarterly sales are already up 30 percent. We have dramatically expanded our product roadmap, launched aggressive new marketing programs, and hired key new sales executives in all the global regions closer to our customers. We also acquired VegaStream, expanding our addressable market beyond our

traditional telephony interface boards into gateway appliances.”

– *Jeff Dworkin, director of marketing at Sangoma Technologies*

Security

“The connection between web application security and the security of consumer devices and data should not be overlooked. Looking ahead to 2012, it is almost certainly the case that the cycle will gain even more traction as organizations adopt HTML5 as the standard for web application development. The standard’s expanded capabilities to communicate with both devices and sites provide new opportunities for attackers to exploit both traditional vulnerabilities as well as newly discovered ones. The expansion of the client environment opens up more opportunity for attackers to take advantage of consumers and use their resources and reach to execute attacks of various designs.”

– *Lori MacVittie, senior technical marketing manager with F5 Networks*

“Emerging trends such as near field communications, machine-to-machine communications and mobile wallet solutions will drive demand for better, more trusted mobile security. As part of this security trend, device authentication will be augmented by session-based security, ensuring that not just the devices being used to communicate are secure, but also the content of the conversation or data exchange.”

– *Timothy J. Lorello, senior vice president and CMO of TeleCommunication Systems*

Unified Communications

“Augmented reality technologies have already started to allow us to more naturally interface with electronic devices. The video game community has introduced devices that watch our every move – taking away the need for any type or joystick of controller. Apple’s recent release of Siri has made use of natural language recognition that allows us to have a conversation with our mobile phones rather than type away on them. We see 2012 as the year when these types of technologies will become mainstream.”

– *Frank Paterno, vice president of marketing at Intelliverse*

“I expect to see UC&M dominate the discussions at most of the industry events this year. I know from our own experience at AudioCodes, it has completely changed the way we work, communicate and collaborate. Like when e-mail was first introduced into businesses in the 1980s, unified communications will transform the way businesses communicate. Businesses will either adopt UC&M or be put out of business by their competitors that have adopted it.”

– *Alan Percy, director of market development at AudioCodes*

Small and medium businesses are projected to spend around \$12 billion on unified telecoms components in the next three years. Today more than half of SMBs are using at least one individual UC component rather than a complete solution.

– *AMI-Partners*

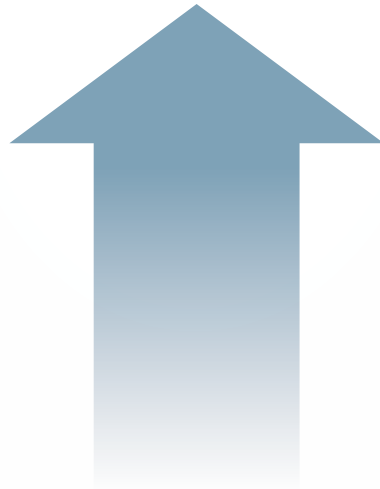
“The scale of unified communications deployments continues to rapidly expand. Add to that, the introduction of tablets, cloud communications, social collaboration and lots of video traffic. Businesses are depending on reliable communications infrastructure and endpoints like never before. All these factors lead to the need for holistic automated testing and monitoring solutions – hence the bullish outlook by Clarus Systems for 2012.”

– *Gurmeet S. Lamba, senior vice president of product development at Clarus Systems*

“Our customers that offer hosted IVR, PBX and collaboration services, such as Voxeo, phone.com and Powwownow.com, have grown a lot in 2011. Industry giants, such as Microsoft, have invested massively in cloud communication services and have announced their first major customer wins. Big corporations will offer PBX services from their internal clouds. This often cross-country centralization of enterprise telephony infrastructure will create major demand in wholesale VoIP services. We are the technological bridge between cloud communication networks and traditional PSTN and mobile networks, so Voxbone should have a great 2012.”

– *Rod Ullens, CEO of Voxbone*

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Federal Stimulus Effort Keeps on the Sunny Side

Solyndra has become a center of controversy in Washington and beyond as a highly publicized example of how the federal government failed us in its efforts to pump more money into the economy. However, new analysis points out the many clean energy- and electronic health care-related successes spurred by the government's stimulus program.

"The stimulus has helped spark an 82 percent gain in the stocks of 11 health care technology companies since President Obama took office and a 263 percent gain in the three public companies that took \$7.8 billion of federal financing to build next-generation vehicle factories," according to USA Today, which partnered with International Data Corp. to conduct a study on

Today said. "More than three-fourths of the permanent jobs are at Ford."

The article goes on to say that the stimulus legislation "has sparked adoption of electronic medical-records software and nurtured an electric-car industry that will sell at least 20,000 cars this year. At least 19 companies have gone public or filed for IPOs after getting stimulus money, from Solazyme's \$21.8 million grant to build a pilot biofuels refinery to a \$1.6 billion loan guarantee letting BrightSource Energy build the world's biggest solar-generation plant of its kind, according to securities-disclosure filings."

Noting that "government bridged a bond market gap that has lingered since the 2008 financial panic," Scott

The stimulus legislation "has sparked adoption of electronic medical-records software and nurtured an electric-car industry that will sell at least 20,000 cars this year. At least 19 companies have gone public or filed for IPOs after getting stimulus money...."

- IDC & USA Today

the outcomes of the stimulus program. "It contributed to a 79 percent jump in stocks of the four leading energy-efficiency companies identified by IDC, including diversified companies such as Johnson Controls and Honeywell. Companies involved in developing smart electric grids, nine big tech firms that are also in many other businesses, have risen 54 percent.

"All these match or exceed the 51 percent gain in the Standard & Poor's 500-stock index, and beat the 4.9 percent average annual gain in venture funds raised in 2008, according to Cambridge Associates," USA Today added in a Nov. 21, 2011 piece.

The stimulus effort also had a positive impact on jobs.

"The number of permanent jobs created or saved in the government's loan guarantee programs is about 40,000, plus several thousand more construction jobs," USA

Sandell, a partner at New Enterprise Associates, the nation's largest venture firm, was quoted in the USA Today piece saying: "Across all the clean-tech sectors we invest in, there has been a tremendous paucity of capital at any stage of a company's development where there's any risk. Trust me, it's been a barren landscape."

The federal government helped things along by earmarking about \$100 billion for tech spending of this sort – two thirds for energy technology and most of the balance to support the move to electronic medical records.

To gauge the success of this program, USA Today tapped IDC, which analyzed more than 45 companies involved in the stimulus effort that are public or have registered for IPOs; USA Today separately reviewed recipients (including Ford) of the 38 completed or pending Energy Department loan guarantee programs.

Do You Own Your Customer?



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– Charles Studt, vice president of product management at IntelPeer

Video

"...2012 could very well prove to be the breakout year for videoconferencing."

– Benjamin Sayers, CEO of VoIP Supply

"Polycom is anticipating a terrific year in 2012, but what excites us most are the goals that we're setting for the industry. One meaningful enabler of industry acceleration is the newly announced Open Visual Communications Consortium, a major consortium which was launched [in 2011] by Polycom and 14 global service providers. The OVCC will bring a range of video as a service, or VaaS, offerings to fruition in 2012, and this will be a huge benefit to users, vendors, and service providers across the industry."

– Jeff Rodman, co-founder, fellow and chief evangelist of Polycom

"2011 has seen the start of the video revolution, in which video starts to become easier to use and deploy and will form an integral, natural, expected part of future communications."

– Eli Katz, CEO of XConnect

"Envivio has a positive outlook for business and the economy for 2012. The multi-screen video industry is very dynamic, which keeps it fresh and interesting. We are helping our customers meet the demands to deliver exceptional services to their customers, the viewers. So, despite an overall very weak global economy, Envivio continues to grow aggressively."

– Julien Signès, CEO of Envivio

"The health of the economy continues to suffer. In some ways, our service is a countervailing trend in that we can provide cost-effective alternatives to traditional business videoconferencing or business travel."

– Scott Wharton, CEO of Vidtel

"The explosive growth of the telepresence market means many companies new to the technology will soon be making large purchasing decisions."

– Ovum, which says the enterprise-grade telepresence market will boom, with spending hitting \$1.1 billion in 2016, growing at a CAGR of 19.5 percent from 2011 to 2016

Wireless

"The new world of work is increasingly social and mobile, and to best leverage the benefits of social business software, the most innovative companies will increasingly need to re-tool their management practices."

– Milind Pansare, senior director of product marketing at Saba

"The near-6 percent increase in global telecom carrier capex we expect in 2011 over 2010 is due in large part to AT&T's ramping LTE deployments, HSPA+ upgrades, and investments in Wi-Fi hotspots for traffic offload. This offsets Verizon Wireless' slowing mobile spending since their LTE rollout peaked earlier this year."

– Stéphane Téral of Infonetics Research

"We added dozens of new applications to our portfolio in 2011 and simultaneously expanded our roster of experts – industry specialists to design custom solutions and mobility application consultants to implement and support those solutions. For AMS, 2011 was a year of rapid growth in our product offerings, our expertise and our ability to serve the mobile application needs of businesses in all industries."

– Mobeen Khan, executive director, advanced mobility solutions for AT&T Business Solutions

"I really believe in 2012 we will see a significant shift of health care delivery from the institutional setting to the home environment."

– Kian Saneii, CEO of Independa

"Despite the fact that we expect mobile VoIP subscribers to grow nearly 10-fold from 2010 to 2015, there is relatively little money to be made from it in the near term."

– Diane Myers of Infonetics Research

"At Nukona we are extremely bullish about the growth sectors in the technology market, which obviously includes enterprise mobility where we play."

– Brad Murdoch, CMO of Nukona

"Globecom predicts that 2012 will be the year that rural carriers begin to benefit from and leverage growth across the wireless M2M Market."

– Andy Silberstein, vice president and general manager of Globecom Network Services

"If 2011 was the year of cloud and/or the year of the tablet, 2012 will be the year of LTE networks."

– Amir Makleff, CEO at BridgeWave

"As operators deploy advanced traffic management solutions that allow them to monitor, meter, and charge for subscriber consumption of over-the-top applications and content, early movers are already transitioning into the next phase of the mobile charging evolution."

– Jonathon Gordon, director of marketing at Allot Communications

"ip.access is at the heart of a fundamental shift in the way that networks are deployed to deal with the massive explosion in mobile data traffic. A recent report predicted a 3000 percent rise in small-cell deployments, so we see a lot of growth in our sector of the mobile infrastructure market."

– Andy Tiller, senior vice president of product strategy and marketing at ip.access



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- SIP Trunking with Legacy PBXs
- Hosted SIP Trunking
- Case studies, demos
- Fax-Over-IP
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Top 10 Technology Trends for Business in 2012

The High-IQ Network Effect – With each new smart device or software application added to a network, all endpoints and devices will become inherently smarter – each benefitting exponentially from additional connections. Whether the connections are people-to-people, machine-to-people or machine-to-machine, new opportunities will be created to solve societal challenges such as employing IT to address the rising cost of health care or deliver smart energy solutions. Because of the network's importance, any interruption of service will have a profound impact. As a result, there will be an even greater demand for carefully designed and well-managed services at the core of the global IP backbone and high-speed wireless networks.

To the Enterprise Cloud and Back – The enterprise cloud will finally come of age and deliver substantial benefits – dramatically reducing capital expenditures and creating business efficiencies and better economics. Cloud services will give companies powerful new options to move workloads easily between the corporate data center and the cloud of a company's choice. Whether a public, private or hybrid cloud model, the enterprise cloud will play an essential role in mobilizing enterprise apps that enable both workforce mobility and new business paradigms.

Big Data Equals Big Insights – Big data (large data sets that can now be managed with the right tools) will drive innovation, helping to evolve the role of chief information officer to chief innovation office. These new thinkers will be responsible for determining the quality of data and strategic applications used to create new business opportunities while empowering evidence-based decision making for greater success. Predictive analytics, based on vast amounts of synthesized data, will become an increasingly important tool for the enterprise.

The Social Enterprise – The already web-centric enterprise will become even more social, and the ability to tap intelligence at all levels of the organization will become the new norm. With the right tools – such as high-definition video for richer col-

laboration and intelligent crowdsourcing (large-scale collaboration) – enterprises can produce, find and convey information with much less effort and greater velocity and efficacy than ever before. This will foster innovation and enhance productivity with exponential benefits. A multi-generational workforce will employ technology to truly embrace a borderless workstyle, where work is an activity not a location.

Video is The New Black – Video is on its way to becoming this year's fashionable black, given its popularity with users and the ease in which it can be accessed on today's tablets, mobile phones and laptops. Now, thanks to ultra-high-bandwidth capabilities and the combination of global IP networks and 4G LTE wireless, video is fast becoming the pervasive and preferred communication vehicle for many enterprise activities, from team meetings to quarterly employee communications to on-demand information about key projects. And with video-enabled contact centers being the latest business-to-consumer application, this business trend is here to stay.

Service Your Way – Personalization will continue to be an inspiration for innovation, driving companies to reengineer their processes and business models. Increasingly, businesses will look for new opportunities and channels to meet customers on their terms. Multifunction kiosks located outside of traditional retail venues, contact center routing and click to chat windows will help companies better serve customers. In addition, the enterprise cloud will enable more application intelligence and the ability to integrate applications and physical environments, helping businesses personalize the customer service experience and enhance customer satisfaction.

The Consumerization of IT – Just as personalization is driving a new approach to customer service, IT departments are increasingly being influenced by their users. Many companies are now trying to improve the user experience and enhance productivity by tailoring their enterprise IT policies to support employees who bring their own productivity tools – such as smartphones and

tablets – to the workplace. Enterprise apps also will become more widely available via enterprise app storefronts, just as they are in the consumer space.

Machine-to-Machine-to-People – Machine-to-machine communications will change the way people manage their world, whether in terms of energy consumption, product inventory or critical business-asset and fleet management. But the human factor – people – will play an important role in harnessing digital intelligence, inspiring innovation and creating the next big thing. For example, while portable monitors may keep round-the-clock tabs on a patient's vital signs, health care providers will ultimately use that information to assess patients and provide treatment.

Compliance Gets Increasingly Commercial – With increasing evidence that companies are less likely to be data breach victims if they comply with security standards, such as those promoted by the Payment Card Industry, compliance will become a pre-requisite for good business practice in 2012. In a difficult economic environment and with increasingly more stringent government regulations, the need for taking full advantage of business opportunities will increase interest in prudent, holistic security approaches. Companies and governments will change how they interact with their extended network of partners, increasingly choosing to do business with those that can demonstrate a comprehensive multiyear and standards-based approach to security.

Energy Savings Power Better Business and the Greater Good – Energy efficiency, especially a reduction in CO₂ emissions reductions, will be a key imperative for many companies – and just in time. In 2012, companies will take advantage of public-private partnerships to invest in everything from more efficient lighting to energy-efficient heating ventilation and air conditioning systems to installing energy-efficient technologies. And they will investigate flexible computing models that leverage on-demand capacity for peak loads, while powering down during periods of lesser demand.

Source: Verizon Business



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The Six Steps to Policy Excellence

Striking the right balance between risk mitigation and the commercial demands of the business is an essential skill, which must be adapted according to the nature of your industry and the size, culture and risk appetite of your organization. This role needs to have clear ownership at the senior management level.

Organizations need to take a systematic and proactive approach to risk mitigation if they are to be better prepared to satisfy evolving legal and regulatory requirements, manage the costs of compliance and realize competitive advantage.

Achieving and maintaining policy compliance becomes more difficult to sustain as organizations grow, become more geographically dispersed and more highly regulated. But, it doesn't have to be this way.

The Purpose of Policies and Procedures

Policies and procedures establish guidelines to behavior and business processes in accordance with an organization's strategic objectives. While typically developed in response to legal and regulatory requirements, their primary purpose should be to convey accumulated wisdom on how best to get things done in a risk-free, efficient and compliant way.

So, what is the secret for effective policy management? Here is a prescription for policy excellence in six steps.

Step One: Create/Review

It is important to understand, when creating policies, that those created purely to satisfy auditors and regulatory bodies are unlikely to improve business performance or bring about policy compliance, as they rarely change employee behavior appropriately. While satisfying legal departments, and looking impressive to auditors and regulators, busy employees will instantly be turned off by lengthy policy documents full of technical and legal jargon.

External factors that affect policies are evolving all the time. For example, technology advances may lead to information security policies and procedures becoming obsolete. Additionally, changes in the law

or industry regulations require operational policies to be frequently adjusted. Some policies, such as Payment Card Industry DSS compliance, have to be re-presented and signed up to on an annual basis.

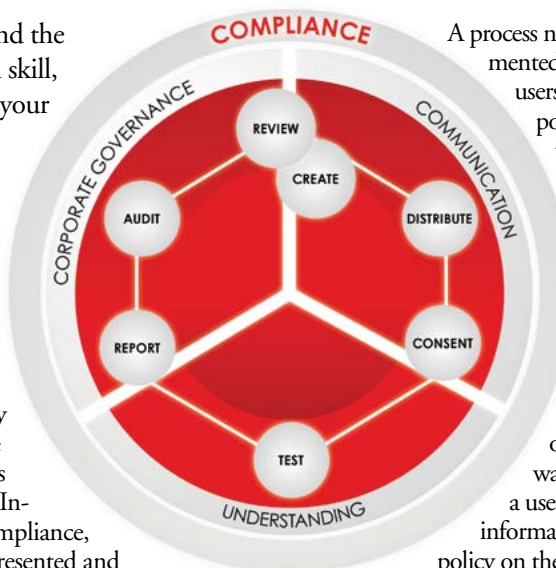
Typically, most policy documents are lengthy, onerous and largely unreadable – many are written using complex jargon, and most contain extraneous content that would be better classed as procedures, standards, guidelines and forms. Such documents should be associated with the policy. Documents must be written using language that is appropriate for the target audience and should spell out the consequences of non-compliance. Smaller, more manageable documents are easier for an organization to review and update, while also being more palatable for the intended recipients. Inadequate version control and high production costs can be reduced by automating the entire process using an electronic system.

Step Two: Distribute

A key step in the policy management lifecycle is to ensure that staff is aware of relevant policies and procedures. Organizations need to distribute policies, both new and updated, in a timely and efficient manner. These need to be consistently enforced across an organization. After all, what is the point of expending considerable effort and cost to write and approve policies, if they are not effectively distributed and read?

Step Three: Achieve Consent

In many cases, regulatory requirements call for evidence of policy acceptance, demanding a more pro-active and thorough approach to the policy management lifecycle.



A process needs to be implemented that monitors users' response to policies. Policy distribution should be prioritized, ensuring that higher risk policies are signed off earlier by users than other lower risk documents. For example, an organization may want to ensure that a user signs up to its information governance policy on the first day that

he or she starts employment, while having up to two weeks to sign up to the travel and expense policy. Systems need to be in place to grant a user two weeks to process a particular document, after which the system should automatically force the user to process it.

Step Four: Understanding

To monitor and measure staff comprehension and effectiveness of policies and associated documentation, organizations should test all, or perhaps a subset of, users. Any areas that show weaknesses can be identified and corrected accordingly. Additional training or guidance may be necessary or, if it's the policy that is causing confusion, it can be reworded or simplified.

Step Five: Auditability

In many cases, regulatory requirements call for evidence of policy acceptance, which demands a more pro-active and thorough approach to the policy management lifecycle. The full revision history of all documents needs to be maintained as well as who has read what, when and, if possible, how long it took; who declined a policy and why. This record should be stored for future reference and may be stored in conjunction with test results.

Step Six: Reporting

To affect change and improve compliance it helps if key performance indicators relating to policy uptake are clearly visible across all levels of an enterprise.



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Dashboard visibility of policy uptake compliance by geographical or functional business units helps to consolidate information and highlights exceptions.

Being able to quickly drill down for specific details in areas of poor policy compliance dramatically improves management's ability to understand and address underlying issues.

Bringing It All Together

To check the level of policy compliance that exists within your organization you need to answer the following questions periodically:

Where are your current policies? Are they accessible to staff?

Who has seen your current policies?

Who has read your current policies?

Does your staff understand them?

Are your policies being followed by everyone?

Are your policies effectively managed?

Are your policies up to date?

Can you prove this to auditors?

For those organizations that are serious about staff reading, understanding and signing up to policies, they should consider

adopting automated policy management software. This raises standards of policy compliance and provides managers with practical tools to improve policy uptake and adherence.

Ultimately, policy compliance is about getting people to do the right thing, in the right way, every time. Ensuring everyone understands what is expected of them and how they are required to carry out their jobs according to corporate policies and procedures is not a new practice. Embedding an automated policy management solution into an organization is really the only viable way to create and sustain a culture of compliance, where people understand their responsibilities and the importance of adhering to corporate standards.

Doing so empowers people to do their jobs within an acceptable governance framework rather than constrained by a rigid set of unenforceable rules. By effectively handling the policy management lifecycle you can create a firm foundation for effective risk mitigation and governance. Automation helps the board, line managers and the general workforce come to grips with policy compliance and puts forward a cost-efficient approach for achieving policy excellence. **IT**

Dominic Saunders is senior vice president at Cryptzone.



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Talking Mobile Wallet with TMNG's Rich Nespola

We've been hearing a lot of mobile wallet lately, but just what it is, who's involved, and what does it mean for our pocketbooks and businesses?

INTERNET TELEPHONY recently interviewed Rich Nespola, chairman and CEO of TMNG Global, which provides consulting and advisory services to companies in the mobile wallet ecosystem, about what's happening on the mobile wallet front.

Define mobile wallet.

Nespola: Mobile wallet is all about convenience. It combines the security and payment capabilities of a credit card with the usability of a mobile phone, abetted by the value-add possibilities inherent in devices with built-in processors, high-quality graphic displays, ubiquitous Internet connectivity and touchscreens.

What are the key mobile wallet initiatives out there today?

Nespola: In the U.S., the two key initiatives of course are Isis and Google Wallet. Google Wallet has the questionable advantage of being the first mover, with near-field communications readers at 150,000 U.S. retailers, and partnerships with Citigroup and Sprint. But Isis has lined up the other three major U.S. wireless carriers (Verizon, AT&T and T-Mobile), and has partnered with all the major credit card companies in the U.S. Isis is expected to launch this year.

And don't discount PayPal, which is working on its own initiative, and can draw from a large established consumer base and deep experience in online payments.

How are they different? The same?

Nespola: Isis and Google Wallet are very similar in that they both are secure app-based solutions that rely on near-field communications-enabled phones that are compatible with NFC readers at points of sale at brick-and-mortar retailers. The key difference is that Isis's revenue model is based on taking a percentage of transactions, while Google Wallet's is based on aggregating customer data and serving mobile advertising to users. Both Isis and Google Wallet seek to be the dominant standard.

Why is mobile wallet so interesting to so many kinds of companies, from Google to Verizon to MasterCard and VISA, to potentially Apple?

Nespola: East Asia has often been at the vanguard of the adoption of mobile phone technologies, and mobile money is no different. The widespread availability of mobile wallet

functionality in Japan demonstrates the huge revenue potential for mobile money in the U.S., by far the world's largest credit card market. Even a tiny slice of global or U.S. credit or debit card transactions presents a significant revenue opportunity. With no established dominant player in the U.S., telecoms, IT companies, credit card makers and handset makers all see a market up for grabs.

What do you see as the role and prospects of the wireless service provider in mobile wallet?

Nespola: With their ownership of the distribution channel and the service customer relationship, wireless carriers can be a key wedge in establishing which mobile wallet standard becomes widely adopted – and which doesn't. In addition, there are opportunities for wireless carriers to capture revenue all along the mobile payments value chain.

What do you see as the role and prospects of Google in mobile wallet?

Nespola: Google is uniquely positioned to appeal to retailers because of its no-fee model. But as Google has often found, offering a great product and getting widespread adoption are not the same thing. It remains to be seen how much credit card companies and banks will embrace Google Wallet.

What do you see as the role and prospects of online retailers in mobile wallet?

Nespola: Amazon has already started encouraging customers to use its price-check app to compare brick-and-mortar book prices with its online prices, which are inevitably lower. I wouldn't be surprised to see apps like this develop into more robust instant purchase systems.

What do you see as the role and prospects of advertising firms in mobile wallet?

Nespola: The holy grail of mobile advertising is location-based advertising. But consumer concerns over Big Brother-like knowledge of their whereabouts have inhibited its development. This will be doubly the case with credit cards, which consumers are especially sensitive about. Mobile advertising linked to the data gathered from mobile payments will eventually come, but it will take some time, and there will be some stumbles.

What is the status of mobile wallet availability today in the U.S.?

Nespola: True mobile wallet functionality is currently only available to owners of Google Wallet-enabled Samsung Nexus S, although readers are available at more than 150,000 retailers. The story will likely be a lot different by the end of 2012. **IT**

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By Erik Linask

Know What You Need from UC Before You Buy

For the past four years, since Microsoft made its first pass at unified communications, the market has been flooded by vendors and providers announcing new products, features, and services, billing each as a must-have for successful business. Certainly, there's no question as to their general relevance, but the global UC superstore that has been created really underscores the need for businesses to first understand their goals before seeking out solutions.

It's not unlike buying a new TV – or any other technology, for that matter. You can go into your local retailer and look at the different brands and models. The most efficient way to make the best decision is first to understand the use case. Who is going to be using the TV? What will they be using it for? Where will it be located, and how will it be mounted? Will it be network connected and, if so, how? Now you can narrow down your choices based on which styles and features you need to meet your use case. Then you can go to your local electronics superstore and intelligently determine which brands and models meet your needs – and then go through the comparison process to reach your final decision.

Twelve percent of smartphone owners use these devices to purchase merchandise, but that's expected to reach 45 percent in the next two years.

Throughout the past several years, I've often gotten the sense that many businesses try to skip the initial process of understanding their unique use cases – which often mean multiple use cases within an organization – and just start looking at multiple vendor options. In some cases, it works out, but often, it leads to a lengthy and frustrating decision making process.

I recently participated in a pair of UC-focused webinars, which included consultant Marty Parker (of UniComm Consulting, UCStrategies) and analyst Frank Stinson (of IntelliCom Analytics). The idea was to provide a vendor-free look at the UC market and what is motivating businesses as they turn to UC as a means to new revenues.

One of the things that stood out from the event was confirmation that a significant percentage of businesses become trapped into a vendor by vendor analysis of the market. The other was that a strong majority of attendees are still in the exploratory stages of UC.

Why are these two points interesting? Because they show how much vendors influence the decision making process. Of course, it's the job of their marketing teams to put their brands in front of business decision makers. But, those decision makers must file that information away, and start at the beginning by defining UC based on their own business objectives and strategies, and what they hope to achieve by adding UC capabilities to their communications infrastructure.

Is it about process automation, or allowing mobile workers to access PBX functions? Or is unified messaging – or perhaps multimedia sharing and conferencing across your business sites – all you really need now? Maybe it's about integrating your contact center and enterprise communications for enhanced customer service.

In many cases, it's not only important to identify your goals, but to prioritize them. Frequently, a migration roadmap is needed – a wholesale replacement is not only costly and time consuming, but it comes with risks. By implementing in phases, there is less disruption, if any, and small user groups can be educated gradually as needed, whether that's end user groups or IT management.

And speaking of management, in addition to knowing what capabilities you need – not which you think are neat – you also have to determine the deployment model that best suits your needs. Are you going to install the equipment and/or software on-site and manage it? Or is the cloud model better suited for you? Perhaps a hybrid approach is your best starting point, with a migration path to follow.

Then again, it all comes back to what you're looking for. You might be able to get everything you need on one platform; or you might need to integrate multiple solutions to create a best-of-breed solution that fits all your needs.

As you read about the latest UC news on TMCnet or talk to different vendors at ITEXPO, bear in mind they all have quality products, but in order to determine their relevance to your needs, you first have to define those needs as they relate to your business strategy. By going through that initial process, you'll be able to better – and more quickly – narrow down a UC strategy that will not only benefit your business, but shine the beacon of its success on your desk.

Please don't hesitate to check out these two webinars if you are anywhere in the UC decision making process:

Five Questions to Ask Before Making Your UC Choice:
<http://tmcnet.com/59086.1>

Justifying Unified Communications: <http://tmcnet.com/59087.1> **IT**

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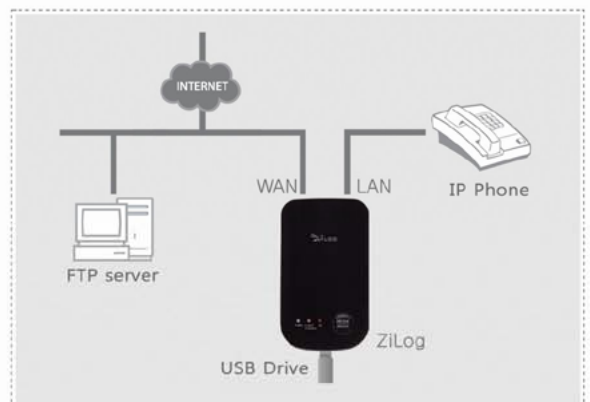
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