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State of Communications

Is it best to put control in the hands of a powerful few that have a detailed understanding of the issues at hand and are in the position to expand business related to it – but also are in a position to tilt decisions about those issues to their advantage? Or is it best to give consumers, and their local or state elected officials, a say in issues that could affect their health, livelihood and/or affordable access to important products and services?

The answers to these questions are once again a matter of debate. In this case, I'm referring to a dust up over a bill to preempt state agencies from regulating Internet-enabled voice and data that recently was passed by the California state senate.

Sen. Alex Padilla (D-Pacoima), the author of the bill, of which AT&T (the fifth-largest contributor to Padilla's campaign) and Verizon Communications are key proponents, has argued that the law creates more certainty on the regulatory front and will thus enable the Internet to remain open and tech businesses to continue to innovate, according to the Los Angeles Times. Proponents of the bill also have noted that this is simply a reinforcement of California's existing hands-off approach to the Internet.

Tech innovation and the Internet are, of course, key drivers of the economy in the world and our country, but in California in particular.

However, members of the California Public Utilities Commission say that SB 1161, which passed the California state senate on an 11-0 vote, have voiced concern over the measure, saying it strips the CPUC of the authority to regulate basic telephone services. Opponents of SB 1161 say the problem with that, as noted by the Los Angeles Times, is that it could enable carriers "to skirt mandates to provide phone service to rural communities and to offer cheaper rates and subsidies for low-income and disabled customers."

And in this day and age when the gap between rich and poor continues to widen, some officials want to make sure they're doing all they can to protect their citizens with the least power.

As noted in an April 18, 2007, posting on the WilmerHale website, there was a similar ruling a few years back, stemming from a move by the Minnesota Department of Commerce to regulate Vonage's DigitalVoice VoIP offering as a "telephone service" under Minnesota law. Writes WilmerHale "in the Vonage Order, issued in late 2004, the FCC broadly preempted state regulation of 'nomadic' VoIP services – applications-layer voice services that consumers can purchase independently of their own broadband Internet connections and can use anywhere in the world." The US Court of Appeals for the Eighth Circuit shortly after that upheld the order, in what represented a major victory for providers of nomadic VoIP services, the piece by attorneys WilmerHale went on to say.

I understand the desire to regulate this kind of thing on a federal level as opposed to a state level, given multiple state regulations create a patchwork of requirements that are tough for a nationwide company to implement. On the other hand, there seems to be a clear pattern of allowing industries to set their own regulations, which has contributed to many of the challenges we now face in terms of the economy.

In any case, it appears as if it will be up to federal agencies and regulators, and those that influence them, to ensure that everybody in the country continues to have access to at least basic communications services. But just how that will work in the future – as big telcos like AT&T and Verizon, among others, push to dismantle the PSTN, and embrace relatively unregulated broadband networks; and the FCC dismantles the Universal Service Fund and overhauls intercarrier connectivity as part of its broadband-centric Connect America Fund – remains to be seen.

So far, some of the larger and more high profile companies like Verizon and Vonage have come out in support of how things are moving forward, but others, like David Erickson, CEO of FreeConferenceCall.com, are not comfortable with the way things have been moving forward. **IT**

NCSA Helps Business Harness HPC Investments

At the recent Moabcon 2012 conference in Salt Lake City, Utah, I had a chance to meet with many of the people in government, universities and private industry who run the most powerful computers in the world. The high performance computing, or HPC space, is doing quite well for a number of reasons, including the need to process big data applications as well the fact that many universities are flush with cash and continue to see value in purchasing these super-powerful computers.

One organization looking to take this massive computing potential and harness it to help boost the U.S. and global economy is NCSA, or the National Center for Supercomputing Applications. Located at the University of Illinois at Urbana-Champaign, this 25-year-old organization regularly works with universities and government agencies to help them understand how they can partner more effectively with industry.

If you think of the HPC space as a fertile ground for innovation that doesn't get commercialized, you could equate it to Xerox Parc Labs – the organization responsible for many of the innovations we take for granted today. Xerox famously didn't take full advantage of technologies like the GUI, mouse and vectorized printer language – it was left to others like Apple, Adobe and Microsoft to bring these innovations to the public.

NCSA is a bridge that gets innovations out of the lab and into industry. In fact, it helped commercialize MOSAIC, the first Internet GUI, as well as Apache server. It assisted in getting Caterpillar's modeling and simulation started. And it helped Microsoft prototype Windows HPC OS. But manufacturing is the organization's sweet spot, in part because innovations are generally shared with other manufacturers and can be implemented across the industry. The goal of NCSA is to solve problems that can lift many boats at once.

Manufacturing has been using HPC for years such as in the automotive space. There are even consortia of manufacturers working together to further subsets of the industry.

In my discussion with Merle Giles who heads the NCSA initiative, he discussed how the resources in many companies are limited, meaning their HPC solutions are spread to the point where many users are forced to work with only eight, or worse, four cores. In some cases such as designing a gear in an oil differential using 32 cores, the process can take four months or more.

But since modeling and simulation is generally given two weeks in the production-line system, these efforts won't ever see the light of day.

The good news is that traditionally only three government agencies were in the business of HPC until recently: DoD, DoE and NSF. But more recently the Department of Commerce has gotten involved and, as Giles said, "The White House actually gets it."

He pointed out that the National Digital Engineering & Manufacturing Consortium has signed a five-year MOU as a public-private partnership targeted at using advanced modeling and simulation in SMEs – particularly manufacturers in the supply chain.

Merle explained that in many companies the distribution of cores is not proportionally greater for power users, meaning there are departments that need far more horsepower than they have access to. In fact at one ISV, he said, 90 percent of users have access to less than nine cores and 40 percent have access to less than five cores.

To assist the manufacturing world, NCSA has developed iForge, which is a purpose-built cluster to help business with HPC as a service. According to Giles, "We architected the machine to make Abacus scream."

The more I spoke with Giles the more I realized how much potential there is in the future to get some of the most powerful computers in the world to solve more real-world problems. The potential for better products and entirely new categories of drugs and other useful products is beyond our current comprehension. And if you think technology has changed the world immensely so far, just wait. IT

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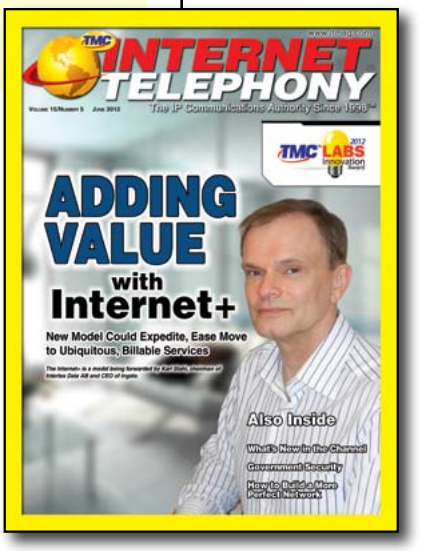

Other

Departments

By Hunter Newby

The Dark Fiber Plan for America and the World

Adages, proverbs and other sayings have a familiar tone, are repeated over the ages and both for good reason. They represent common sense and truth. A few favorites stand out: "History Repeats Itself", "Do It Right the First Time" and "This Isn't Rocket Science", but what do they really mean? They represent simplicity in comprehending situations before, during and, or after they occur. Basically, what it all means is that everything is a part of a grand pattern, a master plan.

So, why "reinvent the wheel" when it comes to creating a master plan for the dark fiber network business model? A couple of months ago the City of Farmington, N.M., was featured in this series. They, like many towns in the United States and world, are considering what to do in regards to the development and expansion of a dark fiber network. As a follow up to that article, below are the highlights of the recent city council meeting held on Tuesday, Feb. 7, 2012, to review the "fiber feasibility findings" of the study team of Elert & Associates and the options they have conceived of for the city in what to do with their municipal fiber network.

City Council, City of Farmington, N.M., held Tuesday, Feb. 7, 2012, at 9:00 a.m.

Option I to connect public sites only

Option II to connect public sites and lease dark fiber to private companies

Option III to connect public sites and lease bandwidth to private companies

Option IV to connect public sites plus offer retail Internet service to residences and businesses

Option V to connect public sites plus offer retail triple play services to residences and businesses

The study team leader, Wendy Chretien, "noted that there are no significant regulatory issues for Options I, II or III, but noted that regulations are unclear whether a municipality has the authority to provide retail Internet services under Option IV. She also noted that the regulations prohibit a municipality from providing cable television service under Option V and stated that Comcast and Century Link will likely challenge the city if it pursues Options IV or V. She stated that several providers have expressed an interest in leasing the city's dark fiber if the fiber is available where needed and costs are within their means."

These bullets and further elaboration are gems; pearls of wisdom, each of them. The thoughts and steps taken to come to these recommendations are the same each and every municipality have and will go through when considering this asset type. There is nothing new here. The safe and sound move is clearly to build and lease dark fiber.

Beyond these primary options there were several sub-options suggested that dealt with the issue of the relationship between proximity and return on investment. This is also a "universal constant".

Sub-option "a" to connect public sites only within Farmington city limits, but limit to sites very close to existing fiber; sub-option "b" to connect public sites throughout San Juan County ("County"), but limit to sites very close to existing fiber; sub-option "c" to connect public sites within Farmington city limits, including those more distant from existing fiber; and sub-option "d" to connect more sites throughout the county, including those more distant from existing fiber.

In dark fiber, greater distance equals greater cost. This applies everywhere. It is what makes and breaks the financial models at the physical layer. There is nothing new to learn here.

In closing, the study team provided these conclusions for the city on what to do with its existing dark fiber.

- Have all city-controlled splice points documented.
- Implement a software program to manage the fiber system.
- Develop a template agreement document for other public entities to connect to the city's fiber system including the cost recovery basis.
- Form a standing advisory group to keep interested parties informed when new fiber routes or extensions are planned.
- Limit each lessee to four fibers per path/route if leasing any dark fiber and consider adding a condition requiring lessees to prove use of the fiber within a specified period of time.
- Decide whether to pursue one of the options and, if so, which one.

Inventory management, standard agreements, sharing information, collaborating, pre-selling, controlling the physical asset allocation, making a decision and taking action – these are the essential elements of success in every dark fiber business – everywhere. There is nothing new to learn here. It is just that this is what everyone needs to learn.

In dark fiber, greater distance equals greater cost. This applies everywhere.

History most certainly repeats itself, and if you do it right the first time this really isn't rocket science. IT

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

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By Dave Caputo

The New Era of Service Creation: Application-Based Service Plans

The growing popularity of real-time entertainment applications has significantly increased consumer Internet data consumption, leaving broadband and mobile Internet service providers to face higher operating costs. As a result, the evolution of billing for Internet services seems to be moving away from the traditional all-you-can-eat business model. These plans are simply not sustainable because a small number of users (5 percent) consume 90 percent of bandwidth, and thereby, the vast majority of users are, in effect, subsidizing those heavy users.

As expected, heavy users appear resistant to metered plans based on consumption. Compounding this issue is the fact that the majority of users have no idea how much bandwidth each of their applications, websites or appliances use. As a result, ISPs need to find different ways to bill for data services in a manner that helps them recoup capital investments, while keeping customers satisfied with the service.

One way in which Sandvine assists ISPs in tackling this challenge is by providing network policy control solutions that enable tiered, application-based service plan offerings that aren't based simply on quota usage. These plans zero-rate low bandwidth applications, such as e-mail and social networking, and offer unlimited access to those applications at a reduced, fixed rate, thus providing the consumer with cost certainty. Such plans are sustainable and profitable for the ISP because, despite the unlimited use of the associated applications, they do not consume much network capacity. This trend has started to become very popular in Latin America, and there are many benefits for both ISPs and subscribers around the world.

ISPs benefit in a number of ways by rolling out plans such as these, based on application usage. In the example above, the ISP noticed its subscriber base grew significantly because cost-conscience users liked these entry-level, fixed-price categories. It also noticed some of its existing customers readily opted into the higher-priced plans to gain increased functionality to meet their needs. More importantly, this ISP actually gained more ARPU because subscribers were more comfortable with paying a flat fee, despite the fact that the fixed fee was often higher than what they would have paid under a variable-price consumption-based model. As another side benefit, the ISP was better able to plan expansion of network capacity to accommodate these plans, because the associated low-bandwidth applications did not consume much network capacity.

These plans also benefit subscribers and have become popular for their cost certainty – the consumer does not need to worry about exceeding monthly caps and incurring additional costs. The plans are also straightforward and easy to understand with no need for subscribers to calculate bytes consumed. In addition, these plans are appealing to consumers since they appreciate the choices they are offered by the ISP. Subscribers can easily identify their own usage preferences in the plans and sign up for the one that best matches their needs, even if that entails graduating to a higher price bracket.

The application-based pricing strategy is a win-win scenario because the subscribers receive the services they want, and the ISP earns subscriber trust and loyalty through increased satisfaction and overall quality of experience. Expect to see more of these sorts of pricing plans emerge in other pockets of the world, as a means for ISPs to prosper and foster positive relationships with their subscribers. IT

Dave Caputo is co-founder and CEO of Sandvine (www.sandvine.com).

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By Mary Barnes

VIPR: Requirements and Key Properties

The fundamental requirement of VIPR is to enable inter-domain communications between any number of domains without requiring any prior arrangement between the domains. This means, for example, that employees in company A can have a video call with employees in company B without needing to know any information, other than a PSTN phone number – e.g., no prior exchange of IP addresses. Without a technology such as VIPR, company A would need to exchange information with company B before setting up a video call. A common approach is to establish a federation between company A and company B. Another approach is for the users of the endpoints to exchange unique identifiers such as IP addresses before setting up a video call – e.g., in the case of equipment from the same vendors.

The only pre-requisite for VIPR is that a previous audio call must have been successfully completed via the PSTN, obviously using existing infrastructure. It's important to note that while VIPR enables calls that previously could only be completed via the PSTN to be established entirely over the IP network, the confidence that the calling party is really reaching the intended user is entirely based on the integrity and security of the PSTN. VIPR uses information associated with the PSTN call to validate the phone numbers for subsequent VIPR calls.

Given that VIPR requires no prior exchange of information, the VIPR solution must work with any kind of endpoint in any kind of configuration, such as through gateways. VIPR also must ensure that there is no change in behavior for a user to make inter-domain calls. In the case of a VIPR call failure, the solution must ensure that the process for making calls reverts to the functionality used prior to the initiation of VIPR. Again, this ensures that there is no configuration nor change in user behavior required for VIPR.

VIPR must not require any processing by any intermediaries. A VIPR call should be able to be completed directly – i.e., point to point. VIPR must ensure that phone calls cannot be misrouted or numbers hijacked. While other technologies use a secure centralized model to ensure the numbers are correctly mapped, VIPR must provide security for a distributed model. Due to the nature of VIPR, a given phone number can be associated with multiple distributed directories. In addition, nothing prevents someone from populating a directory with phone numbers that are not under their control. The distributed directories in and of themselves are completely insecure. This would seem to introduce a very difficult problem to solve. However, VIPR does not directly store phone numbers or any other identifying information in the distributed directories, but rather VIPR stores the hash of the phone number along with a node ID associated with the domain that has responsibility for the endpoint associated with that phone number. As described above, information associated with the previous PSTN call is used to validate the phone number when a VIPR call is made.

An important characteristic of VIPR and a requirement for its widespread adoption is spam avoidance. Since VIPR requires that a PSTN call first be established prior to a VIPR call, there is a natural financial disincentive to spammers. Again, VIPR is building on the PSTN foundation that involves relatively high rates for international calls as well as regulations requiring do not call lists, etc. In addition, a natural characteristic of VIPR is that it maximizes cost savings in cases where there are frequent calls to a smaller set of numbers. However, a Spam model involves much smaller numbers of calls to a very large set of numbers. Thus, spammers don't really benefit from the use of VIPR. Certainly, this doesn't necessarily solve the problem of Spam as some Spam clearinghouses may still decide it is worthwhile to incur the costs. But, it is not anticipated that this will in any way be a common situation.

The only pre-requisite for VIPR is that a previous audio call must have been successfully completed via the PSTN, obviously using existing infrastructure.

In summary, VIPR is able to solve the inter-domain federation problem because it works with existing phone numbers. VIPR works with existing endpoints and thus requires no deployment of new equipment. The value of VIPR is the ability for users to participate in enhanced audio, video and other unified communications modalities using the power of the Internet, in situations where previously they only had audio communications provided by the PSTN. VIPR is scalable and is available worldwide making use of the existing deployed Internet and PSTN infrastructure.

Future columns in this series will discuss further detail on the mechanics of a VIPR call, as well as the security features provided by VIPR. **IT**

Mary Barnes is a principal engineer at Polycom (www.polycom.com).

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Ask the SIP Trunk Expert

By Karl Stahl

Internet+: SIP Trunking Your Unified Communication

Connecting the telephony of the enterprise PBX or UC system using IP SIP trunks instead of conventional telephone lines has been very successful in recent years. Now it is time to utilize the full power of the global IP networks and our UC terminals – PCs, laptops, fixed and mobile phones, tablet computers and telepresence systems – to extend the telephony service with high quality, full UC capability, where everyone reaches one another using both telephone numbers and email-like SIP addresses.

Internet+ is a model proposed by Ingate, and its sister company Intertex, where telcos offer UC federation between all users as an obvious continuation/extension of the telephony service. Today your unified communication is local, and you have to do special federation using enterprise session border controllers like Ingate's to use UC beyond your own island, if at all possible.

Today's SIP trunks only connect the voice telephony service, since that application is built into the telcos' networks (SDN or IMS networks). In the Internet+ model, the telco service providers will instead be responsible for delivering general SIP connectivity over quality IP paths all the way to the users, for all kinds of real-time person-to-person communication, such as voice, video, presence, IM and whatever one can imagine using the SIP standard.

The Internet+ model is remarkably simple to implement, by using intelligent E-SBCs at the border between the public IP transport network and the private network, typically an enterprise LAN. Those E-SBCs fulfill TOQrouter (trust, openness, quality) functions of routing, classifying, billing, prioritizing, NAT/firewall traversal and security for the calls and messages.

The telco infrastructure benefits from using the bandwidth already available in the IP networks, which today is used only for unprioritized and uncharged data traffic. Since routing and billing is done at the edge, Internet+ leverages the built-in reliability and scalability of IP networks, something that is lost (and expensive to regain) in SDN and IMS networks. The telco infrastructure therefore becomes easy to implement, reliable, scalable and very cost efficient, only costing a fraction of today's SDN or IMS networks.

The Internet+ model also applies to smartphones on 3G and 4G networks. Here the TOQrouter is simply replacing the firewall for the Internet access channel in the service providers' networks.

Download the Internet+ brief at www.ingate.com/files/An_Internet+_Model_For_Global_Unified_Communication.pdf and read more at internetplus.ingate.com. IT

Karl Erik Ståhl is CEO of Ingate Systems (www.ingate.com) and Intertex Data AB.

E911 Watch

By Nick Maier

Understanding E911 Laws and Reducing Corporate Risk and Liability

RedSky recently hosted a webinar that discussed current E911-related federal and state regulations and how to reduce corporate risk and liability. Our guest speaker was Martha Buyer, an attorney who heads a practice focused on telecom law with special emphasis on both regulatory matters and contract negotiation. Interest in the subject was extremely high as measured by webinar attendance and downloads from our website of the archived session. Here are some of the key points Ms. Buyer covered:

Municipalities and states have differing laws from agency to agency and state to state; but, to date, no federal law or policy has been passed. However, even without the presence of laws or regulations, employers can still have obligations to employees, contractors and guests who occupy their facilities.

The 17 states with E911 laws of which corporations must be aware include: Alaska, Arkansas, Colorado, Connecticut, Florida, Illinois, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Texas, Vermont, Virginia and Washington. These laws regulate E911 services as they apply to multi-line telephone service and PBXs. Some states require enterprise and/or residential MLTS operators to ensure that when a user calls 911 on their system, automatic number identification and automatic location identification are provided to the public safety answering point.

In addition to state law, the Occupational and Safety Administration considers employers liable when there has been an "intentional disregard of a statutory requirement." A working E911 system isn't viewed as a statutory requirement, but creation of an emergency action plan is considered a conditional requirement. OSHA can also issue citations to employers for failure to have protective devices or procedures in place. Daily fines of between $7,000 and $70,000 can be administered for non-compliance with OSHA rules and regulations and unfortunately, visitors, vendors and contractors are not covered by worker's compensation, only employees.

It is important to consider all locations within the enterprise regardless of the presence of E911 legislation.Excluding one location from E911 protection while protecting other locations might be considered discriminatory by a judge or jury in a civil liability trial. Even knowing about the regulations, but not implementing appropriate measures can leave an enterprise vulnerable to liability. IT

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

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By Michael Stanford

The HD Voice Saga Continues

Enthusiasts have been beating the drum for HD (wideband) voice for over a decade, but call quality seems always to get worse, not better. So where's the disconnect?

The global telephone system is a wonder of interoperability. Any phone can complete a call to any other phone, with the signal flowing through a patchwork of different technologies of different vintages. The downside of this is that the call quality is only as good as the weakest link in the chain. Your ear can hear frequencies up to about 20kHz, but the POTS connection from your house to your local central office is based on hundred-year-old analog technology that can't convey frequencies above 3.4kHz. Digital technology, based on time division multiplexing, came to the phone network about 50 years ago. The TDM network is incapable of carrying audio frequencies above 4kHz. Over the past 20 years, TDM technology has been progressively displaced by IP technology, which has no intrinsic limit on the audio frequencies that it can carry. But, still, virtually no calls are wideband.

In mobile phone systems the backhaul connections from the cell towers have until recently been bottlenecked through TDM. But mobile phone networks have a tougher problem. The weakest link in a cellular call is the over-the-air connection, which suffers not only from dropped packets, but also from bandwidth starvation: a TDM circuit runs at 64kbps, while a cellular connection over the air must get by on a fifth of this.

The network transcodes, or converts, a call to match the technology of each part of the patchwork it traverses. Transcoding is like a ratchet – each step makes the call quality worse, never better. So the secret to high quality calls is to eliminate transcoding. If the network is IP end to end this is technically trivial, but in practice network engineers sprinkle transcoders liberally to help with interoperability.

Finally, there is light at the end of the tunnel. Orange first deployed wideband in Moldova in 2009, and has since extended it to several other countries in Europe including the U.K., Spain and France. At the beginning of 2011, Verizon announced that it planned to do the same thing, but it has been beaten to the punch in the U.S. by Sprint, which in April announced a new phone, the HTC EVO 4G LTE. Calls over the Sprint network with this phone at both ends (and with other phones not yet announced) will be in wideband. What's cool about this solution is that unlike with Verizon, wideband capability is not confined to calls over LTE. This is because it uses a new codec from Qualcomm called EVRC-NW, which, ingeniously, is backward-compatible with Sprint's narrowband infrastructure. **IT**

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

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Tech Score

By Jeff Hudgins

Breaking AdvancedTCA Bottlenecks

Networking engineers that I talk to all agree, the newly released Intel Xeon processor E5 Family, based on the company's Sandy Bridge microarchitecture, will change how software applications run on AdvancedTCA platforms.

It supports innovative networking through 10 gigabit Ethernet, and its features allow for advanced virtualization and cloud computing techniques.

Let's take a look under the hood.

The E5-2600 chips are comprised of up to eight cores, each running up to 55 percent faster than its Xeon 5600 predecessor, to deliver stepped-up server performance to the enterprise market. New enterprise servers can offer support for up to 32 GB dual in-line memory modules and increased memory capacity from 288 GB to 768 GB using 24 slots. E5-based ATCA compute blades with more limited board real estate are expected to support up to 256 GB in 16 VLP RDIMM slots at launch. Still a 40 percent increase over prior ATCA compute blades is expected.

Power efficiency is another key benefit. The Intel Xeon processor E5 family provides up to 70 percent performance gain per Watt over previous generation CPUs. This allows communications OEMs to create power-efficient dual processor blades made for service providers that fully meet or beat ATCA power specifications.

But the real ATCA game-changer lies in the E5-2600's integrated I/O, from which comes the ability to reduce significantly latency and increase bandwidth. ATCA's 40G fabric has been backplane-ready since 2010 in anticipation of an updated PICMG specification release. Since then, solution providers have sought ways to eliminate bottlenecks and utilize as much of this fabric as possible. This being the first time that Intel has integrated the new PCI-Express 3.0 with 40 lanes aboard each PCI-Express processor, Intel's I/O bandwidth Quickpath Interconnect eliminates those bottlenecks, improves throughput and cuts I/O latency by up to 30 percent. And a dual CPU configuration offers 80 lanes, which equates to 200 percent more throughput over the previous generation.

The result: ATCA is all about I/O throughput, and the blades will now be able to deliver more than 10gbps per node. This is a critical milestone for newer wireless video applications that service providers are so hungry to launch in 2012. IT

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

Enterprise View

By Max Schroeder

A Continuing Educational Series

Pennies from Heaven or a Cloud Raining Gold?

The song Pennies from Heaven was released in 1936 in the middle of the Great Depression at a time when even copper pennies had value. Fortunately, today's cloud solutions can rain gold on both resellers and customers alike. Resellers gain a solution sale with a recurring revenue stream and customers achieve immediate and ongoing cost reductions – a win-win for all involved.

The April Enterprise View column took a fun look at legacy technologies and paper documents, but the associated waste is really not a laughing matter. The Paperless Project is a coalition focused on how organizations work with paper and electronic content. Its home page (www.thepaperlessproject.com) cites several statistics from players like Gartner, ARMA and AIIM that quantify the enormity of the situation including:
15 percent of an organization's revenues are spent creating, managing and distributing paper;
60 percent of employee time is spent working with documents; and
85 percent of business documents are in paper form.

Think of all the filing cabinets loaded with documents in your office wasting space and employees' time. A scanning project could easily convert these to digital format. Combined with a full workflow strategy to digitize documents in the first place, significant savings can be realized. For example, a fax-over-IP server solution deployed as part of a converged IP implementation can capture inbound and outbound documents digitally and be fully integrated into the overall workflow strategy.

But why focus solely on paper? VoIP systems support services well beyond the capabilities of traditional TDM. Using VoIP, employees can be fully mobile, global and more productive. Support and contact center operations can save time plus improve customer satisfaction. Management requirements are also simplified reducing the load on overworked IT staffs.

Extrapolating further, you can employ hosted cloud solutions for all of the above operations to realize even more savings. The implementation is simple, ongoing IT overhead is reduced, and the model is more secure since business continuity and DR features are automatically built-in.

The choice is simple – settle for pennies or stop procrastinating, listen to your reseller and make the decision to for the gold. IT

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

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By Lori MacVittie

Policy Replication in Virtualized Networks

A core benefit of a virtualized network infrastructure is flexibility and scale. Scalability models based on virtualized instances of infrastructure rather than on physical devices tightly coupled to IP addresses allow such solutions to break out of the traditional N+1 scalability model – a model that while not incompatible with cloud computing and highly virtualized data centers is nonetheless sub-optimal.

This is particularly true in networks where a very high rate not only of change but volume is often experienced. For example, service provider networks see ebbs and flows of traffic bursts and declines throughout the day during fairly well-understood time intervals. When shared resources are the norm, this reality often translates to congested networks and poor user experiences, as attested to by those who suffer degrading performance at home about the time the local high school lets out.

The capacity of a virtual server within the SIP architecture may suffice to provide acceptable call quality for 10 users today, but it may not manage that success tomorrow for even four.

Organizations, too, suffer similar time-predictable performance degradations. The sudden influx of a large number of employees logging on in the morning at the beginning of a shift can unduly tax not only the service being accessed and its dependent services, but the network itself. It's only natural that those responsible for the network turn, as server administrators and architects did, to virtualization as a means to combat the need for elasticity in the network throughout the day.

The problem, however, is a bit more complex than merely transitioning from a hardware-based network to a virtualization-based network. Cloning an image of a load balancer or a Diameter component may be easy. Provisioning may be as simple as pushing a button. But replicating policies appropriately? That may be a completely different ball game.

Policy Replication

It is important to recognize that a plurality of the services offered by network infrastructure is based on policies – policies that govern access, that determine legitimacy, that steer traffic one direction or another. These business-influenced operational policies are vital to the core function of many infrastructure services.

As organizations consider transitioning to a more virtualized network infrastructure they must be aware of the ties that bind and gag network infrastructure arising from its hardware roots: IP-based configuration.

Network infrastructure configuration is often tightly coupled to IP addresses, making it much more difficult to clone and provision virtualized instances of the same infrastructure without additional processes that address this binding. All too often it is not just configuration that needs to be modified, but policies as well, as they have long been tied into their IP-based configuration foundations.

What's necessary to enable a more virtualized network infrastructure is to decouple policy from configuration (and thus IP dependencies) and enable a more portable policy system, one that makes it possible not only to replicate policy on-demand within the organizations' network, but across environments as well.

Enabling Standardization

Decoupling policy from IP dependencies would enable standardization of IP-dependent configuration methods. A network infrastructure-wide set of IP-specific APIs that allowed IP configuration updates at boot time would better be able to keep up with the volatility of a highly-virtualized data center and reduce the operational costs by eliminating the need to develop device-specific scripts to modify IP dependencies in newly provisioned virtual network infrastructure instances.

This then allows policy to be replicated to newly provisioned network infrastructure instances without concern for IP dependencies, which ultimately means intra- and inter-network portability of policies. The result is policy replication and management systems that are less complex, more efficient, and highly consistent – reducing the possibility of errors introduced by scripts or manual changes.

Such a system also enables the ability to deploy rapidly new policies that address emerging risks such as zero-day exploits or malware outbreaks. Policies that guard against such risks can more quickly be propagated across a network infrastructure if they require no subsequent modifications.

The portability of network infrastructure policy is critical to the ability of any organization to take advantage of emerging virtualized network infrastructure solutions. Operational consistency and risk mitigation require meticulous adherence to policies governing traffic. In highly volatile environments such consistency is best realized through replication on-demand. That requires that policy be decoupled from IP-based configuration dependencies first. IT

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

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By Peter Radizeski

The Replacements

The channel basically sells replacement services. Here are some examples: VoIP for POTS: SIP trunk for PRI; cable modem for DSL; Ethernet for T1; and T1 for T1. It's always about replacing like for like.

That is why selling hosted PBX and other cloud services is so challenging: It is not a simple replacement. It's not like for like. The sales process for selling replacement services is pretty easy. When the sale becomes about business process change or fork-lift upgrades (like hosted UC or virtual desktop), the sales skills are different. Intelligent questions, actively listening, excellent follow up, creativity, product knowledge, and more now come into play for the agent or sales professional. This means that the sales cycle will be longer (likely, so will provisioning, which means commission payments are much later). To some agents and sales reps the sale will be harder – and less satisfying, not just due to the smaller commissions that take longer to arrive, but transactional sales types are motivated and driven by quick hits and a lot of ink in a month. Extended sales cycles are less motivating to this type of sales person.

In addition, commissions are already sliding due to declining revenue. With the prevailing sales pitch being "I will save you money" for more than 10 years, revenue is going to steadily decline. As revenue declines, so do agent commissions (which are based on monthly billing). As commissions decline, agents have to sell more and more to maintain their revenue goals. Shifting to new products, new sales skills, and a different sales approach will be a leap, especially without training, a financial cushion, a deep desire for change, and vendor support.

Conferencing and e-fax are not quite a simple replacement. In an evolution from POTS/DSL/T1, these two products would be the next step, a step that many agents have not taken yet. This also begs the question that I hear from providers: Why isn't there more cross-sell and upsell to an agent's customer base?

This makes me wonder who will be the agent of tomorrow, who will be grooming accounts and consultatively selling complex solutions to their customers? IT

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

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By Paula Bernier

Fonality Heightens Focus on Channel Partners

Fonality is rededicating itself to the channel. The company, a cloud-based VoIP and unified communications solution provider serving small and mid-size businesses, had a team of just four channel-focused people in 2010, says John Young, vice president of channel sales. Now the team numbers 15, and the channel effort receives more resources in terms of marketing these days as well, he adds.

"Fonality's focus on channel vs. direct became heightened with the onset of this new CEO," says Young.

David Scult, formerly the general manager of Microsoft Office 365, joined Fonality in January. Scult at Microsoft led up global distribution of Microsoft Information Worker products in the cloud, including SharePoint, Exchange and Office.

The cloud is a key tenet of the strategy at Fonality as well. The company's platform can be used to deliver hosted, premises-based or hybrid-hosted solutions. Young says that organizations with less than 25 users on the system usually select the hosted model. Those with more than 25 users tend to go hosted or with an on-premises solution. And the hybrid-hosted option, Young explains, puts an appliance at the customer site but intelligence at Fonality data centers so network elements can be managed remotely instead of requiring the time and expense of a truck roll.

Fonality's hosted IP offering, which is two years old, has seen incredible success – with 20 percent year-over-year growth, says Daryl Reva, Fonality's manager of product marketing. And the company has delivered 3 billion calls in the cloud, he says, adding that Fonality is starting to manage that growth and will work with the channel to do that.

Fonality today has more than 1,000 agents and around 700 active resellers. It also works with master agent World Telecom Group. Fonality last month launched a new partner portal to support its growing channel. The portal provides access to sales tools, videos, self learning, integration, forums, white-label tools, and more.

Says Young: "Fonality is becoming more of a channel company." IT

Airband Revs Up Partner Effort

Airband's channel program already has seen strong gains, but the company continues to strengthen this effort. It is adding staff to support it; better targeting potential partners; and providing education so selling the company's fixed wireless services is second nature for channel partners. The company already had an agent program in place when Tom Lane, channel director, came aboard in January, explains James DaBramo, executive vice president of sales. The goal, DaBramo says, is to drive sales by getting the Airband story out to agents and helping them understand how its solution is different. "I want them to wake up and say 'that's an Airband application,'" says DaBramo. Airband provides voice and data services, including Internet, VoIP and business continuity solutions, over its wholly owned, fixed wireless network. This network bypasses the local phone and cable infrastructure to avoid downtime that can be caused by cable cuts or natural disasters.

Alpheus Targets Enterprise via the Channel

Alpheus Communications is bringing its deep fiber assets, data center and transport services in Texas to enterprise customers via select master agents. The company announced the news in early spring. The 10-year-old company, which in December was sold to Los Angeles-based private equity firm The Gores Group, traditionally has sold its services on a wholesale basis to other service providers. It will continue to do that, but now is leveraging its network to address business customers as well, explains Scott Widham, who was named CEO of Alpheus following the company's acquisition late last year. Widham brought in Layne Levine, now Alpheus senior vice president of enterprise sales, to help it with that effort. Levine and Widham say Alpheus expected to forge relationships with additional channel partners, but added that will consist of just a small handful of master agents.

American Telesis Emphasizes Focus on the Channel

American Telesis, a provider of wholesale wide area network solutions, is working to ramp up its agent program with new learning and selling opportunities. "The channel is critical to our business, and it has been since day one," says Heather J. Selbert, vice president of operations at American Telesis. New hire William Kendrick has joined on to American Telesis to help the company with this initiative, which includes new lunch and learn programs to educate agents, and specific education to bring agents up to speed on a managed security solution American Telesis will launch this quarter. The new managed security service will help small and medium businesses set up firewalls and other security tools and procedures. This service will complement the other services offered by American Telesis. The company aggregates services like T1 circuits and Ethernet private lines from its 80 service provider partners. While other companies selling services are focused on pushing their specific products and price points, Selbert says, American Telesis uses a consultative sales approach to match the best solutions with customer needs.

Arkadin Helps Customers, Partners Expand their Horizons

Arkadin is investing in the channel and plans to develop additional initiatives on that front going forward. That's the word from Scott McMaster, vice president of sales at the company, which sells audio and web conferencing services and unified communications solutions. The company's strategy revolves around integrating best-of-breed solutions, he says, so Arkadin is one part SaaS provider, one part systems integrator. The target customer is small and medium businesses, as well as large enterprises and organizations. Arkadin in early spring announced that Silicon Valley startup Pinnacle Engines is

using ArkadinVideo powered by Vidyo to solve production challenges.

BullsEye Aligns with Telegration

BullsEye Telecom is partnering with Telegration. Bill Oberlin, CEO of BullsEye Telecom, says: "Telegration has a strong agent network across the country, while BullsEye has the ability to deliver complex solutions in a broad nationwide footprint.… Telegration's strong national foothold makes it a great vessel to deliver BullsEye's portfolio of services across the country." Telegration's sales staff as a result has access to BullsEye's voice, data, digital voice, cellular, hosted IP, network security, unified communications and cloud-based managed services.

Cologix Launches Channel Partners Program

If you're looking to buy or sell co-location or interconnection services out of Dallas, Montreal, Toronto and/or Vancouver, a company called Cologix may fit the bill. The company provides a comprehensive set of solutions for customers and agents from its carrier-neutral data centers in these four locations, says Rob Devita, Cologix general manager, who adds that the company has relationships with more than 400 service providers. In fact, says Devita, a key differentiator for Cologix is its unique footprint. Cologix provides services to more than 400 carrier, enterprise, financial services and media companies. Cologix can be ground zero for cloud service providers to deploy their solutions – and it will not develop its own cloud solutions to compete against them. Devita says channel partners are deeply valued by Cologix, which provides agent partners with access to the company's entire sales team. And Cologix helps educate agents on the cloud and other key trends, and offers support in defining what will be the best solution for the individual customers.

Evolve IP Enables Partners to Triple Income

Evolve IP wants to help channel partners to triple their income, and without requiring them to do a lot of heavy lifting. The company, which offers hosted PBX and virtualized solutions to business customers, now provides a virtual desktop solution, which is just the delivery of Windows desktops from the cloud. This offer, Tim Allen, Evolve IP chief sales officer, says, can be a way for channel partners to increase their income by selling the solution to existing hosted PBX customers. The company has been pushing its cloud-based and virtualization solutions lately. In fact, it recently announced the addition of five employees to help it move that strategy forward. Evolve IP says that new employees Joe Corvaia, Rich Fox, Bill Maun, Ritzcel Exconde, and Greg Drake will work to further expand Evolve IP's virtual call center and cloud solutions, help customers capitalize on these services, and meet growing demand.

snom Introduces E-Learning Program

snom technology AG has come out with an e-learning program, giving value-added resellers the knowledge to provide end-to-end support of snom ONE IP PBX solutions. The class is available free to registered snom VARs from North and South America, Australia and New Zealand who are interested in gaining certification for the company's software-based snom ONE IP PBX and hardware-based snom ONE plus IP PBX appliance. "Based on the popularity of our instructor-led snom University VAR certification, we are pleased to offer an online version of the curriculum," says Mike Storella, COO of snom technology.

StartMeeting Unveils Audio and Web Conferencing

StartMeeting recently launched a new audio and web conferencing service. In development for more than two years, the new offer provides toll, toll-free and high-definition VoIP reservation-less calling for up to 1,000 users.

Telcentris Readies PBX Feature Set, Unveils Cloud Solution

In the world of unified communications, Telcentris unifies the widest array of communications. And it's now parlaying its consumer offer into a PBX feature set for business customers. That's the word from Cliff Rees, president of Telcentris, which enables "truly universal communications" including fax, video, voice, chat, and links to sales force tools. Telcentris brands its offering VoxOx, which delivers what Rees said is "voice over anything over anything." Telcentris sells through agents and via white-label arrangements with service providers like CLECs. To date, the VoxOx product has been a free consumer service akin to Skype or Google offerings, Rees says. The business-focused version of VoxOx was in alpha testing as of late March.

UNSi Launches Channel Partner Program

United Network Services Inc. has been through a lot of changes in the past few months to put it on a path to growth. And now it's ready to spread the wealth in the form of a new channel partner program, through which others can resell its connectivity, managed services and professional services. The UNSi Channel Partner Program, which has various partner levels and commitments, enables partners to resell the company's services. Those services include carrier Ethernet, MPLS, VPLS and broadband aggregation capabilities. Secure-24, which sells managed IT, application hosting and cloud computing services, was among the first UNSi channel partners.

ViaWest Delivers Reliability, Service

ViaWest, which says it's the nation's largest privately held data center, prides itself on "first-class facilities with first-class customer services" and competitive partner programs. So says Micah Berninghausen, ViaWest sales engineer. The Denver-based company, which was founded in 1998, offers co-location, managed services and cloud offerings under one roof. A few months ago ViaWest launched a VMware-based open API cloud offering. ViaWest offers these services from its 22 data centers, which are located in the markets of Dallas; Denver; Las Vegas; Portland, Ore.; and Salt Lake City. A key differentiator for ViaWest is its reliability. "We really focus on uptime" of the network, power and cooling, Berninghausen says. In fact, the company has had 100 percent uptime on power and the network since it started business. It's this kind of attention to detail, he says, that allows ViaWest to deliver a very high level of customer service.

VTech Touts Simplicity

Graham Williams, vice president of SMB for VTech, which manufactures AT&T-branded home and office telephones, says VTech's channel program is all about simplicity. It's a simple program, and it's a simple product to understand and install. And that's important, he says, because partners don't want complexity, especially those in the SMB space. To join the VTech channel, partners go through an online certification program. The company, which has a license agreement with AT&T Intellectual Property, offers various products through its SMB division. The includes the Synapse line, which can serve up to 100 users and is mainly sold through value-added resellers; and SynJ, a 10-user DECT product brought to market through an e-commerce program.

By Paula Bernier

Adding Value with Internet+

New Model Could Expedite, Ease Move to Ubiquitous, Billable Services

The Internet, and IP networks in general, have gone a long way toward expanding our world of communications. But we still have a ways to go. To allow end users to realize natural and universal communications, and enable facilities-based service providers to benefit in the process, the industry needs to move to Internet+.

Internet+ is a model being forwarded by Karl Stahl, who is the chairman of Intertex Data AB and CEO of Ingate. It enables real-time unified communications; introduces QoS and the ability for carriers to offer and bill for different levels of service; and allows for management and security, but in a way that separates those functions from the IP transport of a service. Based on SIP, Internet+ applies to both fixed and mobile networks.

With Internet+, service providers like the telcos will be able to move away from their flat-rate and all-you-can eat business models and introduce more premium-level connectivity so they can both deliver high levels of service to customers and continue to invest in their own networks.

"It's the only way forward if we're not going to be stuck in old-time telephony for the next 10 years," says Stahl.

The revolution brought about by the Internet has been great, Stahl says, but when it comes to person-to-person, real-time communications, telephony still looks pretty much the same as it did 100 years ago. The tools and technologies exist to deliver something so much better, he says, yet IP-based networks basically replicate plain old telephony. That's a big problem, he adds, because telcos, which to date have been in a protective mode, are suffering as a result – they've gotten onto this track where they don't know how to earn money and compete.

Today, telephone companies keep information about who owns what telephone number to themselves, Stahl adds. But if you know the SIP address of an endpoint, it's easy to send traffic. The Federal Communications Commission's rules on intercarrier compensation have helped cement the current model

The Keys to an Internet+ World of Communication

A non application-specific transport network: Just like the Internet

- Prioritization for real-time traffic - Just enable DiffServ
- Delivery to the users, on LANs and to smartphones
- Metering and charging of "beyond Internet usage"

For telephony

- Service (including POTS)
- SIP being the standard to use (no deviations, extensions or gateways inside the global network)
- Usage of E.164 numbers in addition to SIP address (ENUM to convert to SIP or even to Skype and other islands)
- Trust between participants (like having a telephony subscription/telephone line/number today)

Source: Intertex and Ingate

in which telcos treat telephone numbers as they do. But now that the FCC is making changes to intercarrier compensation, service providers will need to look to end users as opposed to each other for revenue, and they'll need to measure what's happening at user endpoints to make that happen.

"We need to move forward," Stahl continues. "We need to talk SIP end to end without interfering with the application." And, he adds, there must be a way for service providers to charge for all of this.

"This is the way it should be done," says Stahl. "We can move forward. You can do this."

Of course, you do have the relative newcomers like Skype that already are leveraging new networks to deliver services like videoconferencing. But Stahl notes that these kinds of solutions also fall short of what they could be. That's because most of today's services of this type exist on technological islands, he says, and because they're not natural – for example, users often have to e-mail or call one another on the phone first to alert each other as to when a teleconference will commence.

Some in the industry have suggested that, at least for the telcos, IMS is the best route to IP-based voice and enhanced services. But while many of the world's largest telcos have embraced the IMS approach, investments in this technology have seen wild fluctuations, and there's been a lot of talk about the complexity of IMS.

Stahl says that Internet+ provides a much cleaner and easier approach.

"The problem with IMS was that it was too complicated to ever be implemented or finished," he says. "It didn't benefit from the Internet architecture. And it replicated an overlay network, which is all wrong in an IP world."

Internet+, meanwhile, extends the Internet a bit, applies Internet thinking, and provides a standard real-time interface for users and servers. And the infrastructure needed to get to Internet+ costs just a fraction of what is spent on POTS replication over IP today.

"You do about a tenth of [the work and investment] you do with IMS," adds Stahl.

Operators already have many of the pieces in place for Internet+, says Stahl, they just need to add TOQrouters, and formulate strategies to pull it all together.

Service providers that are doing SIP trunking are already half way there when it comes to Internet+, Stahl says. The next step, he explains, is for these carriers to implement infrastructure and processes that allow them to do billing from the point of origination rather than billing from a central point in the network. That way, calls can be routed to endpoints rather than routed to an overlay network, and service providers have more flexibility in billing.

Central to the Internet+ model is what Stahl calls the TOQrouter, which is effectively a "clever" E-SBC. TOQ stands for trust, open, quality.

The TOQrouter includes a SIP proxy used for routing calls and messages directly between endpoints as well as for delivering communications to users on LANs or 3G or 4G phones (resolving the firewall/NAT traversal issues without requiring work-around methods). In this scenario, the service provider issues CA-signed certificates for trust, using mutual TLS between all SIP proxies on the WAN side. The same certificates can be used to meter and to deliver CDRs for billing. Service providers deploy these E-SBCs at customer premises to assign DiffServ values to packets, route those packets based on the quality they require, and provide the service providers with billing reports showing what amount of what kind of traffic each customer used. To get to Internet+, these same service providers need to enable the quality capabilities already in place (but usually not yet activated) on their IP routers, Stahl adds.

"Our products are very close to the TOQrouter in capabilities," says Stahl, referring to E-SBCs. "So deployment could be very close to [enable service providers to] do these things."

The TOQrouter is a new product category that only Ingate and Intertex are talking about at this point. But the companies are trying to drive interest in and adoption of TOQrouters and the Internet+ model.

"We are the first to really point this out, this is how this should be used," says Stahl, who adds that presentations on this topic are typically greeted with "a lot of nods and yes" responses from service providers.

"We are missionaries here," he continues. "We just hope for a better world." IT

By Asim Rasheed

How to Build a More Perfect Network

For a data center operator serving a bank, stock exchange, or other transaction-intensive environment, even second-long delays can equal millions of dollars lost. The problem is exacerbated as business-critical applications move to the cloud. Network operators are employing higher speed Ethernet to interconnect their data centers to manage growth in users and traffic. To ensure a high quality of experience on these wide area networks, network operators need comprehensive and precise testing to determine the impact of latency and jitter on network performance.

Network imperfections, also known as impairments, can cause packet delay, jitter, packet loss, and other problems that delay and disrupt vital services. These network impairments are unavoidable weaknesses that network operators and their customers need to mitigate. Impairments that play havoc with both control and data packets passing through networks must be discovered and rectified, especially for quality-sensitive service infrastructure.

Knowing When It Feels Right

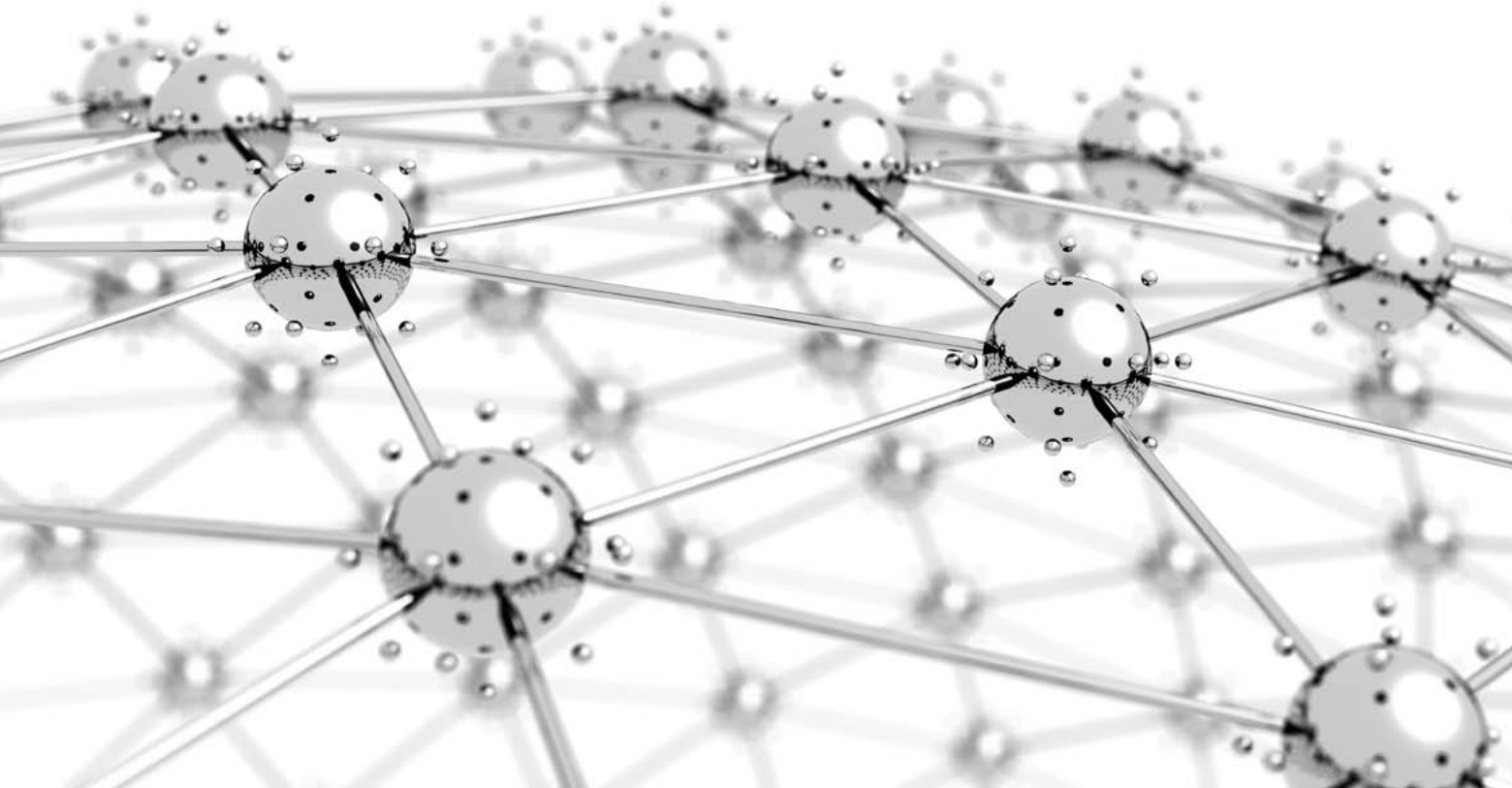
Since impairments are always present within devices, systems, and networks to a certain degree, a relevant question is: How much impairment is too much? High-bandwidth applications that include peer-to-peer data, file transfer protocol, and broadcast video each have their own performance requirements in terms of bandwidth, latency, and jitter.

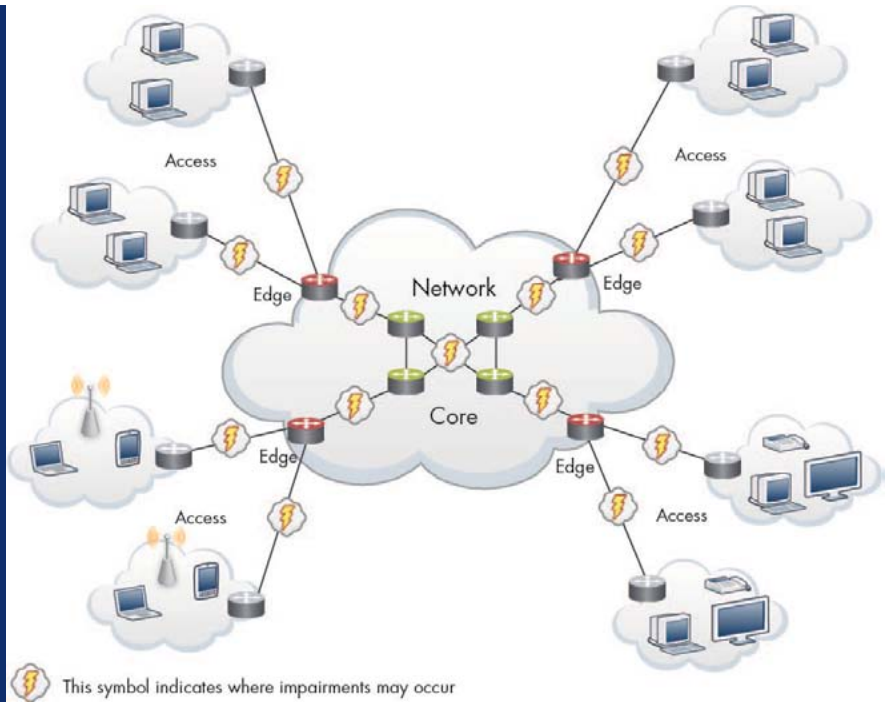
Network operators must ensure that the QoE of their services feels right. VoIP calls must sound as good as land-line service; IPTV must be absent of pixelated, blurred, or frozen frames; and high-speed Internet services must appear responsive. For Internet telephony services, voice call quality is very sensitive to delay and jitter. In addition, voice applications must re-sequence out-of-order packets and keep on providing service in the face of delayed or lost packets.

To ensure interoperability between devices and minimize service degradation across long distances, it is important that there are limits set on the maximum level of the most relevant impairments present at an output interface and the minimum level that can be tolerated at an input. Adherence to these limits will ensure interworking between different vendor equipment and networks, as well as providing the basis for isolation of problems.

Impairments are Fickle

As we've all experienced, working networks do not behave in a deterministic way. Caused by cumulative random events, impairments affect traffic packets that are traversing a network differently at any given moment. Most of us have experienced slower Internet upload/download speeds in the afternoon when the kids in our neighborhood get home from school. Distance of the path dynamically built for each packet as it traverses a cross-country network can impact application performance. And what about the media frenzy that happens when there is a wide-spread service disruption?





NETWORK WITH IMPAIRMENT

Causing problems that delay and disrupt vital services, network impairments are unavoidable weaknesses that data center operators must mitigate.

Since impairments are fickle, coming and going with whatever is trending, network operators need test solutions that can help to predict when and where they are most likely to occur. At the forefront of the battle to prevent latency and packet loss are test tools that have the ability to emulate WAN cloud impairments to simulate various network and cloud conditions and validate whether the end-to-end performance is impacted by the delay within the WAN cloud.

Testing Impairments

Pre-deployment impairment testing offers a controllable, simulated network environment that lets you evaluate how networks and services are impacted under various impaired traffic conditions. This saves time, effort, and money that would otherwise be spent using expensive network resources to replicate real-life conditions. With an impairment testing solution, you can easily emulate a real-life network with a few clicks of the mouse, running network protocols and sending data traffic over an emulated network that has impairments impacting those packets.

Pre-deployment impairment testing offers a controllable, simulated network environment that lets you evaluate how networks and services are impacted under various impaired traffic conditions.

Functions to look for in impairment test systems:

- high density 1GE, 10GE, and 40GE support so the system can grow with your needs;
- realistic, high-scale WAN emulation for precision testing of expansive networks;
- hardware-based impairment generation for full line rate impairments, superior network performance, and cost-effective testing;
- integration with traffic generation, protocol emulation, and analysis – all from a single user interface – for faster time to test, lower costs, and ease of use;
- high levels of latency to emulate long network distances and corresponding network latency (600ms delay with 10GE port pair, 6s with 1GE port pair, and 500ms delay with 40GE port pair) at line rates;
- flexible and definable classifiers that allow you to impair traffic differently by class of traffic, such as QoS priority or application-specific impairment profiles; and
- the ability to emulate large network clouds using a combination of router/host emulation and impairment.

Companies use the results of their impairment testing to determine where to focus efforts to improve performance problems. One view is to keep the network simple and depend on applications to most efficiently manage traffic flows. Others point out that networks may need to be better provisioned or tuned to handle certain high-bandwidth, time-sensitive traffic. I expect that the answer lies somewhere between the two, with a fine-tuned network and impairment-aware applications working seamlessly together. IT

Asim Rasheed is a technical marketing manager for Ixia (www.ixiacom.com).

By Paula Bernier

Broadband Stimulus Update

Vermont Telephone Readies for an Eventful 2012, 2013

It's been a while since we've heard much about the federal government's broadband stimulus effort, so this month INTERNET TELEPHONY decided to check in on one of the funding award winners to see where the company is with its network build out and service launch. That company is Vermont Telephone.

VTel, one of the country's largest family-owned telephone companies, is building a fiber-to-the-home network that will cover the company's 14 exchanges and will be capable of supporting end user broadband speeds of up to 1gbps, and delivering new video services. It's also extending its middle mile network within and beyond Vermont. These efforts are being funded by VTel's own investments, paired with grants and loans from the Rural Utilities Service and the National Telecommunications Information Administration.

The largest outside infusion comes from RUS, which is providing VTel with $92 million in broadband stimulus grants and loans for the FTTH build and a 4G LTE build, both of which fall under what the company calls its Wireless Open World, or WOW, project.

A separate, $12 million grant from the NTIA will be used to enable VTel to build a highly redundant, 100gbps middle mile network to connect hospitals, businesses and other key community stakeholders.

"We're really excited with our federal funding to deliver state-of-the-art service to every single premises in our telephone footprint," says Sharon Combes-Farr, director of marketing at VTel, adding that RUS gave VTel high marks for its application, probably because it came from a small, independently-owned company with strategic assets in an extremely rural area – and with an ambitious broadband plan.

About 17,000 customers in VTel's service territory and a few thousand businesses will benefit as a result of the efforts, she says.

Both the wireline access and middle mile networks will be powered by infrastructure provided by Alcatel-Lucent.

"It's really showcasing all of our technology with Vermont Telephone," says Amit Patel, CTO of national wireline accounts at Alcatel-Lucent.

The middle mile build involves the installation of Alcatel-Lucent's 1830 Photonic Service Switch, which enables traffic to traverse multiple wavelengths over a single fiber. On top of that will be an MPLS backbone, which will rely on Alcatel-Lucent's 7750 Service Routers. Organizations in the area will benefit from VTel's new network builds through the availability of new business-class services, which will be delivered courtesy of Alcatel-Lucent's OmniSwitch 9800E. And both organizations and consumers in the VTel footprint will have access to more high-speed broadband services and new facilities-based video services, which will leverage the Microsoft Mediaroom video middleware, explains Patel.

VTel says the middle mile project will dramatically increase connectivity in its service area, and expand its existing 1,000 mile four-state optical fiber network from Vermont with connections to New York City, Boston, and Montreal.

Delivering facilities-based video will be completely new for VTel, Combes-Farr says. While the company has delivered telephone services to customers since 1890, and was the first Vermont telephone company to introduce DSL services, which it did in the 1990s, the company to date has only been able to offer video services through a resale deal with satellite TV outfit DirecTV.

By delivering IPTV over its own fiber infrastructure, however, VTel will be able to provide its customers with faster channel changing; a wider array of programming; better affordability and reliability; and, potentially in the future, a multi-screen capability.

VTel is also updating its phone infrastructure. The company, which had used DMS 100 platforms, is moving to Metaswitch infrastructure. As a result, VTel is transitioning from TDM- to IP-based voice, and will be able to offer more functionality to its business and consumer users.

As for the LTE wireless broadband network, which Combes-Farr says is a significant portion of the federally funded project, VTel expects to announce its technology partner for that the effort soon.

"We have selected our [wireless] vendor, have engineered the network, and are presently in site acquisition mode," she says, adding that approximately half of the wireless sites have been acquired and that the company expects to roll out the wireless network late this year and throughout 2013.

On the fiber side, VTel and its partners as of mid April had completed engineering for all of the company's 14 exchanges and had completed drops of the company's two largest communities. And they were in the midst of laying fiber and doing additional fiber drops.

VTel also has been working to forge deals for video programming and aimed to do a video trial with friendly users in the near future, with a goal of rolling out video on a more widespread basis by later this year.

The entire transition from the current network to the new networks and services should be complete by the end of 2013. IT

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AT THE SPEED OF IDEAS™

Good News for Telecom Vendors

There are positive indicators relative to the telcos and their vendors. Service provider revenues passed the $1.91 trillion mark in 2011, compared to $1.79 trillion in 2010, according to recent comments from analyst firm Ovum. Carrier capex also rose in 2011, but was depressed late in the year. "Economic worries caused budget cuts late in the year, hitting service provider capex," says Matt Walker, a principal analyst in Ovum's Networks practice. "Overall for 2011, capex grew 9 percent to $306 billion, due to double-digit percentage growth in the first three quarters; capex declined 1 percent year-over-year in the fourth quarter of 11. Among the top 10 capex spenders were two from North America (AT&T, Verizon), China's three big carriers, NTT, and four European operators with multinational operations (DT, Telefonica, Vodafone, and FT)." Going forward, Walker adds: "Signs have emerged in 2012 of a slowly improving economy, and further improvement should help reach the revenue goal and capex growth targets of 3 and 6 percent respectively."

E-SBC Demand Grows

The enterprise-session border controller market is on the upswing in light of growing SIP trunking adoption, according to Infonetics Research. "The market for enterprise session border controllers jumped 60 percent in 2011 and will grow significantly over the coming years as the adoption of SIP trunking continues to expand," says Diane Myers, directing analyst for VoIP and IMS at Infonetics Research. "The enterprise SBC market is a sweet spot in the enterprise market because [it fills] a growing need for security, interoperability, and network border traversal." SIP trunks grew 88 percent in 2011 over the previous year. And Infonetics Research forecasts the global enterprise-SBC market to grow to $527 million in 2016. Acme Packet leads the E-SBC space, with 34 percent worldwide revenue share in 2011. Cisco occupies the No. 2 position.

RAD Intros Aggregation Platform

RAD Data Communications has unveiled the ETX-5300A service aggregation platform, which the company says allows providers to converge business, wholesale, and mobile backhaul services onto a single efficient network infrastructure. The ETX-5300A aggregates up to 80 GbE or 16 10GbE access links into redundant 10 GbE ports. Amir Karo, vice president of marketing at RAD Data Communications, says: "RAD has applied its wide experience and technological expertise in access networks to design a central-site carrier Ethernet solution tailor-made for pre-aggregation in larger networks but equally able to be deployed as a service hub in smaller operations or private networks. And we've addressed the 'sweet spot' for operators requiring full-blown functionality and high port capacity but packaged in a small-form factor box that uses less than half the power consumption than any competitive product in the market."

Axia Partners Helps Lower WAN Costs

Businesses that want to save money and outsource as much of their communications as possible may find what they're looking for in Axia Technology Partners. So says Josh Ross, a managing partner with the company, who adds that Axia can provide WAN solutions that can save companies 40 percent. Axia, founded by Josh and his brother Jason, can take on an entire package of services for customers. The company puts together customized solutions for customers through its consultative sales approach. That may include such things as fiber construction, Internet services, network convergence, nationwide local phone service, hosted dialer services, and cloud PBX services. Co-location is also an ancillary part of the business.

Blue Coat Unleashes New Version of PacketShaper

Blue Coat Systems Inc. recently announced PacketShaper version 9, a new software operating system release for Blue Coat PacketShaper appliances that introduces what the company says is the industry's first network-, application- and content-level visibility and control for IPv6 shadow networks, which have, up until now, run undetected on existing corporate IPv4 networks. The software enables performance of up to 8gbps. "PacketShaper version 9 uniquely provides visibility of IPv6 traffic secretly traversing corporate IPv4 networks," says Qing Li, Blue Coat chief scientist. "PacketShaper gives businesses the ability to regain control of their networks to monitor compliance with IPv6 evolutions, audit against security and infrastructure migration plans, and align with business priorities."

Open Channel Offers Better Performance

SEVEN Networks' Open Channel traffic optimization solution has been shown to reduce the time a device is on the network by 40 percent without impacting the user experience, the company says. This translates into a data traffic reduction of up to 70 percent and an increase in battery life by up to 25 percent without application or network changes.

Threesome Partners for S.E.C.U.R.E.

LynuxWorks, Inc., TransLattice and Fritz Technologies are collaboriating to provide a new platform for building cloud deployments in sensitive environments. The resulting S.E.C.U.R.E. (Secure, Enterprise, Cross-Domain, Unified, Resilient Environment) platform solution was designed for situations requiring secure hosting of applications, geographic redundancy of applications and data, and secure cross-domain transfer of information. "Customers today are looking to move their applications and data into the cloud, while maintaining the security of sensitive data," says Frank Huerta, CEO and co-founder at TransLattice. "We are very confident that the S.E.C.U.R.E. platform will help meet the needs of our customers. By working closely with LynuxWorks and Fritz Technologies, we have been able to leverage both the technologies and expertise that provide a great environment for our TAP solution."

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Microsoft Launches Open Source Subsidiary

Microsoft has announced a new wholly owned subsidiary called Microsoft Open Technologies Inc . The aim of this new business, according to Microsoft, is "to advance the company's investment in openness – including interoperability, open standards and open source." The Microsoft interoperability strategy team – which has worked with the W3C's HTML5, IETF's HTTP 2.0, cloud standards in DMTF and OASIS, and in many open source environments such as Node.js, MongoDB and Phonegap/Cordova – will form the nucleus of this new subsidiary. "This structure will make it easier and faster to iterate and release open source software, participate in existing open source efforts, and accept contributions from the community," according to a Microsoft blog. "Over time the community will see greater interaction with the open standards and open source worlds."

Matt Asay Questions Microsoft Effort

Matt Asay, senior vice president of business development at Nodeable and an emeritus board member of the Open Source Initiative, in his regular column for The Register says that "Microsoft's new Open Technologies subsidiary may be many things, but one thing it's not is further demonstration of Microsoft's long-term commitment to interoperability, greater openness, and to working with open source communities', as Microsoft has positioned it." Asay goes on to write that "While it's true that Microsoft's self-interest has increasingly aligned with open source and open standards like HTML5 over the years, it's not true that isolating its open technology efforts will somehow help the software giant engage more in this world. If anything, openness will increasingly be 'what our subsidiary does' for Microsofties still hoping to win a 21st-century battle using a 20th-century strategy." And Asay quotes OSI board member Simon Phipps remark that: "The new Microsoft Open Technologies Inc. provides an ideal firewall to protect Microsoft from the risks it has been alleging exist in open source and open standards."

Oracle Chief on Java: 'I Don't Know'

Oracle CEO Larry Ellison in the U.S. District Court in San Francisco recently said "I don't know" when asked whether Java is free, according to reports from CNET and ZDNet. As the CNET piece on the Google-Oracle conflict notes, Java is free, but licenses are required for specific use cases. "Google's defense is that the 15 million lines of code in its Android smartphone software contains only the parts of Java that are freely available and not restricted by licensing or copyright," CNET writes. "Google's strategy, in part, was to fork from the standard Java implementation to ensure that Android provided a differentiated platform for app developers."

IBM Readies Linux Server

IBM is readying Linux-only servers to compete with x86-x64 servers from outfits like Dell and HP, according to The H website. The report indicates the IBM PowerLinux 7R2 servers will be two rack units and are designed for big data analysis, to support business programs like SAP, and to enable open source infrastructure services. "A PowerLinux 7R2 system with two 3.55 GHz POWER7s, 32GB of RAM, two 300GB hard drives, four 1Gb network controllers, SAS (Serial Attached SCSI), RAID and a DVD drive costs $21,282," according to The H piece. "When compared to an x86-64 server with vSphere 5.0 Enterprise, PowerVM for IBM PowerLinux comes out worse because it can only accept Linux guests; the virtualisation component refuses to accept AIX 6.2 or i5 and earlier versions. However, the 7R2 scores with its four threads per core, a hardware hypervisor, 16 virtual CPUs per VM and unlimited virtual memory – VMware limits its licenses to 64GB of virtual memory and eight CPUs per socket."

Google Delivers New Translation Tools

Google in March unleashed new additions to its Google Translator Toolkit, an online translation tool for amateur and professional translators. New are four translation-related file formats, which include Android Resource (.xml), Application Resource Bundle (.arb), Chrome Extension (.json), and GNU gettext-based (.po). "With these new file formats, you can use Translator Toolkit to localize your apps and other products and content much more quickly and easily," according to the Google open source blog. "For example, to translate your Android application, go into the res/values directory and upload strings.xml into Translator Toolkit – Translator Toolkit will now automatically translate it. You can then share your translations with amateur or professional translators, who can localize the text using Translator Toolkit's WYSIWYG online editor."

Kovacs Promotes HTML5

Mozilla CEO Gary Kovacs used his keynote speech at this May's CTIA in New Orleans to sing the praises of HTML5, which he says addresses what the Internet is today – with video and rich media. By 2016, he said, 2.1 billion mobile devices are expected to support HTML5. And this technology already is in use by such content giants as The Boston Globe, Facebook, Microsoft and The New York Times. He finished his speech by saying that the web offers us a common language, and that can offer the leap forward (which he indicated earlier in his comments we're more than ready for, given the biggest advance we've made on the mobile front is miniaturization). "My call to action is for the mobile ecosystem participants to stop developing proprietary platforms, requiring proprietary tools, and to start to focus on developing the open environment," Kovacs wrote in his blog that posted just before the CTIA speech. "Innovation needs to happen beyond the language of the web. We all need to work together to stress the Web as a platform, to push over a few remaining hurdles like graphics and video and native device API access, and work together on the common language – HTML5. Web technology doesn't lock you into a specific development environment. It's egalitarian and open. It enables people to create as well as consume information, to share, and the technology is standardized, free to implement, and easy to learn. It's time for us all to collaborate to create the Web of the future."

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By Paul Kenyon

Government Security

Brewing the New Presidential Task Force Secret Sauce to Eradicate the Insider Threat

The inability of the U.S. government to detect insider threats and behaviours quickly and accurately from its array of vast live databases has got to stop – it's official, and it's an order from the President himself. However, as Obama has found to his cost in other arenas, issuing an order or winning a vote in Congress is only the beginning, and this is an ambitious project being undertaken by the military's Defence Advanced Research Projects Agency which is not expected to fail.

The executive order signed by President Obama was the result of a seven-month review by his administration. The White House sought to find a proper balance between security and the need for agencies to share classified information. This was, of course, one of the weaknesses revealed by the Sept. 11, 2001, terrorist attacks.

Under the executive order, the government will create a special committee to coordinate information sharing and to ensure that agencies that use classified computer networks protect information. Each agency will have a senior official oversee classified information and be responsible for safety measures. Several departments and agencies – including the Pentagon and the Central Intelligence Agency – have already taken steps to control people's ability to place classified data on disks or removable memory devices, as well as limiting the number of users with permission to use such devices.

"Our nation's security requires classified information to be shared immediately with authorized users around the world but also requires sophisticated and vigilant means to ensure it is shared securely," says President Obama's order.

Specifically, the order mandates that Attorney General Eric Holder and the U.S. director of national intelligence, James Clapper, establish an Insider Threat Task Force to find ways to deter

and detect security breaches. Against the backdrop of existing government agencies, some critics have questioned the need for yet another agency to deal with security matters, but it is worth noting that it has been almost six years since the inception of WikiLeaks, yet the government has only just begun to identify methodologies to combat insider threats within the military.

The bottom line here is that the government needs to move swiftly if it is maintain credibility – especially in an election year.

Earlier in 2011 the White House revealed language on new legislation directing private industries to improve computer security voluntarily – and have those standards reviewed by the Department of Homeland Security.

The government, all the way from federal to state, and down to city levels, clearly has plenty of work to do on preventing insider attacks.

Establishing a least privilege environment is the first step to achieving an IT environment whereby everyone can still be productive, while at the same time remaining secure.

The executive order signed by President Obama creates a number of new interagency governing bodies that will work together to oversee the protection of classified information across federal agencies and departments, while at the same time balancing the needs of federal users that have permission to access it. The order also makes federal organizations responsible for the sharing and protection of their classified information, as well as mandating that they designate a senior official to oversee these tasks. In addition, agencies and departments must willingly provide information for independent assessments of their compliance with security policy and standards, as well as implement an insider threat detection and prevention program, which is where the Insider Threat Task Force enters the frame.

In addition to the task force, the executive order sets up a series of committees to ensure agency compliance with the security measures and to facilitate interagency coordination. The Senior Information Sharing and Safeguarding Steering Committee will have overall responsibility for the new policies and be held accountable for department and agency compliance.

Senior officials from the Department of Defense and the National Security Agency will jointly act as a new Executive Agency for Safeguarding Classified Information on Computer Networks to develop technical policies and standards to protect classified information. The plan is for this Executive Agency to also be responsible for third-party assessments of agency compliance.

It's also worth noting that, as officials were laying the groundwork for the new policies, the Insider Threat Task Force has been working informally since June of last year to clarify policies in several priority security areas. For example, a number of departments and agencies already have standardized policies for removable media, limiting the number of users who are permitted to use such devices. To beef up their online identity management, administrators of classified systems have also enacted measures to strengthen online identity management policies and their ability to track information being accessed by these users.

So will the executive order stop sophisticated attacks, as exemplified by complex and targeted malware such as Stuxnet and Duqu? Our belief is that this is debatable, but the use of augmented security layers – such as privilege management – can greatly assist in this regard.

Effective privilege management allows IT professionals to control who has access to specific applications running on the corporate IT platform, as well as the underlying data. This means, for example, that if the admin team only run control and security software from within the network perimeter on known PCs, then access to those applications can be locked down to specific on-network and even on-workgroup computers. Then, even if a set of admin account credentials are compromised by hackers or other external (and unwanted) agencies, they cannot use those credentials from the Internet – they would still have to gain physical access to the terminals used by the admin staff. This security methodology revolves around the principle of least privilege, which in turn translates into a least risk scenario, since the attack surface of the network is significantly reduced.

In view of the looming elections, there is an argument that the Department for Homeland Security should take a leaf out of the security industry's best practices by adopting this least privilege approach. But how should the White House go down this path?

Our observations among clients are that the President needs to designate a senior official to be charged with overseeing the project, as well as implementing an insider threat detection and prevention program on a multi-agency basis. In parallel with this, the government and its agencies also need to ensure that their information is properly classified, as well as start research – if they have not already done so – into the many types of data leak prevention technology that are available to today's businesses. Coupled with regular self assessments of current security arrangements, as well as not being afraid to bring in external advisers, this cannot help but engender a positive approach to data security in all its various shapes and forms.

The final step that needs to be taken is to implement a policy of least privilege a process that is easier to implement than many professionals think. Researchers found that, when analyzing published Windows 7 vulnerabilities through March 2010, 57 percent were no longer applicable after removing administrator rights. In comparison, Windows 2000 was at 53 percent, Windows XP was at 62 percent, Windows Server 2003 was at 55 percent, Windows Vista was at 54 percent, and Windows Server 2008 was at 53 percent. IT

Paul Kenyon is COO with Avecto (www.avecto.com), a company specializing in Windows privilege management solutions that help organizations deploy secure and compliant desktops and servers.

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By Paula Bernier

Ditech Taps Agents to Sell Voicemail Transcription Services

The ease-of-use benefits that voicemail transcription services offer are pretty simple to understand. But that's just the tip of the iceberg.

Some industries require that employees record phone interactions. That means it's very helpful if those records can be easily located and searched after the fact, and having those records in written form helps with all of that.

Voicemail transcription is also a very handy tool for such professions as reporters. Yet many businesses have legacy voicemail systems that don't support this kind of thing. Ditech Networks is among the companies offering voicemail transcription services, and its services work with any PBX.

"This service is very sticky," says Vishal Agrawal, sales director of North American Voice to Text at Ditech Networks.

Ditech Networks this year launched a channel program through which it sells its voicemail transcription services.

While it has already offered its voicemail transcription services through carriers like VoIP providers, now it's expanded the go-to-market strategy to also work directly with master agents and subagents, says Agrawal. The Ditech Networks program provides agents with a dedicated channel manager.

Ditech Networks has been around for more than 15 years selling voice processing solutions. Its products are used in a wide variety of networks, including in VoIP, wireless and wireline networks. The company's customers include Verizon, Sprint/Nextel, Orascom Telecom, AT&T, China Unicom, Global Crossing, and West Corp.

In other recent news from Ditech, the company announced a partnership with StreamWIDE to deliver voice-to-text services.

"Ditech's PhoneTag Voicemail-to-Text service nicely complements StreamWIDE's messaging offering," says Pascal Beglin, StreamWIDE CEO. "Further, PhoneTag's multiple language support allows us to support our customers in North and South American as well as European markets."

StreamWIDE's voice messaging solutions enable value-added carrier services. IT

New Numbers on Enterprise Voice Gear

Enterprise voice equipment revenues reached $2.4 billion in the fourth quarter of 2011, bringing total revenues to $9.6 billion for the year. That's according to Synergy Research Group and TeleGeography, which report that the IP telephony segment of the market grew from 61 percent to 66 percent from 2009 to 2011, meaning traditional systems now account for a smaller share equipment revenues. The research firms went on to report that Cisco and Avaya have increased revenue markedly since 2009, primarily at the expense of their European and Asian competitors, and that Cisco's market share increased from 26 percent in 2009 to 32 percent in 2011, while Avaya's grew from 12 percent to 22 percent.

Aztek Becomes Part of GENBAND

GENBAND has announced the acquisition of Aztek Networks, which sells switch consolidation and network migration solutions. GENBAND plans to sell the Aztek 5000-series under the GENBAND G5 platform brand. The product formerly known as Aztek 5000LF will help GENBAND provide cost-effective solutions for service providers looking to replace legacy line access equipment. "The Aztek acquisition strategically enhances our network transformation capabilities with both innovative technology and talent," says Charlie Vogt, president and CEO of GENBAND, which has done many acquisitions under his leadership.

SOHO VoIP Grows

Global service provider revenue from business and residential/SOHO VoIP services totaled nearly $58 billion in 2011, up 16 percent from the previous year, according to Infonetics Research. "The revenue that service providers derive from their residential and SOHO VoIP subscribers still eclipses what they get from businesses, but the business segment is growing about twice as fast, due in large part to the surging popularity of SIP trunking and hosted VoIP and UC services. Adoption of VoIP services across both the residential and business segments continues to grow, and we expect strong global growth in VoIP service revenue over at least the next five years," says Diane Myers, directing analyst for VoIP and IMS at Infonetics Research. The firm adds that the number of residential and SOHO VoIP subscribers grew 14 percent in 2011, to more than 178 million worldwide.

BT, NET Partner on Lync

Network Equipment Technologies and BT have joined forces to reduce the time and cost requirements of Microsoft Lync 2010 platform deployment. Through the deal, BT will introduce NET's UX Series products as part of its Microsoft Lync solution strategy. "Businesses are seeking ways to reduce costs, increase productivity, and improve customer service," Mathew Krueger, vice president of business development at NET, says. "Being able to communicate and collaborate with anyone at any time, whether you are using phone, e-mail, application sharing, messaging or conferencing is key to achieving these goals The combined BT and NET solution offers customers an innovative option to the challenge of deploying UC and cloud-based managed services."

VoIP for the Long Run

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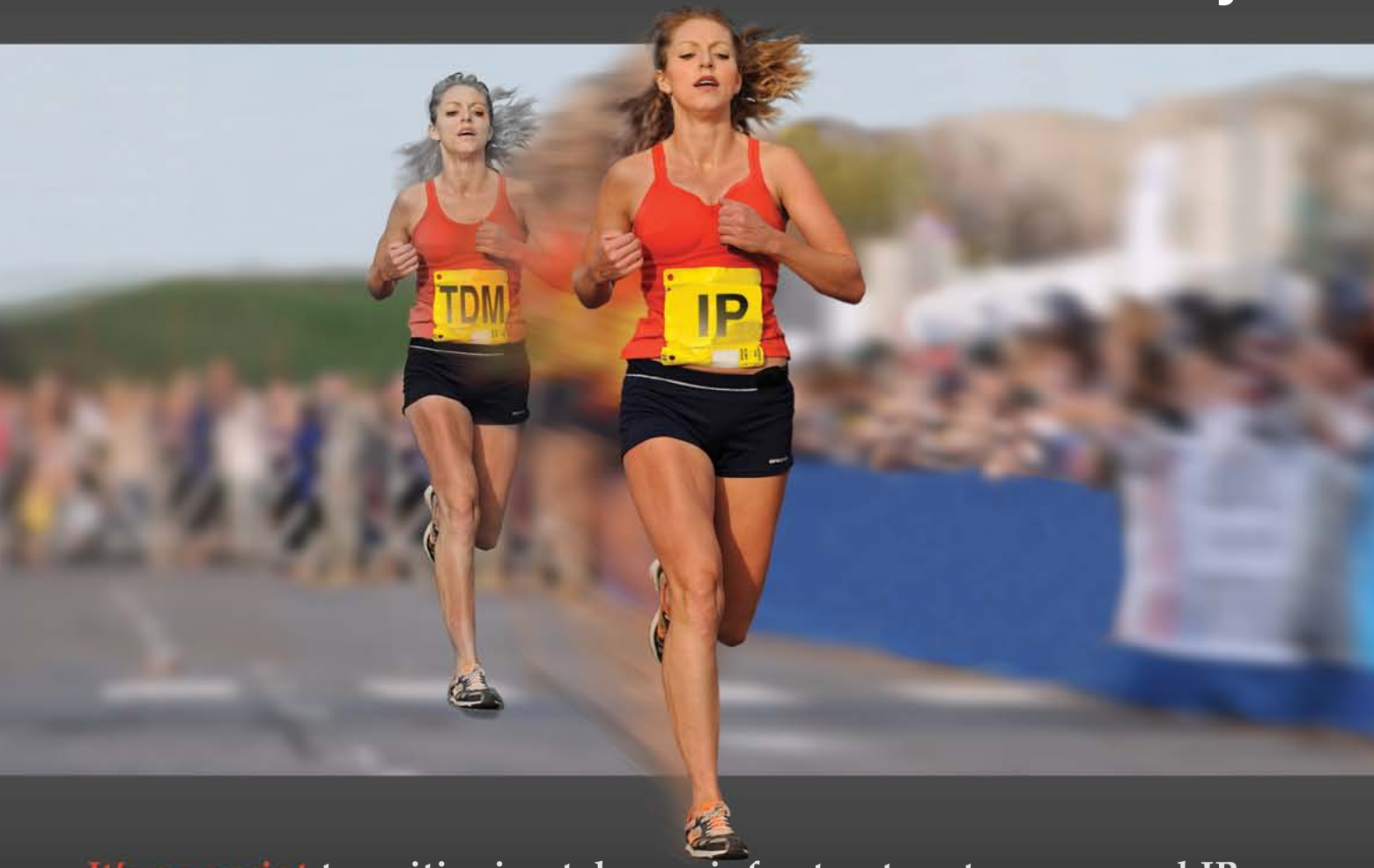

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By Brian Farrar

Happy Days Are Here Again

The skeptics among us have long been waiting for a definitive death knell for the remnants of the Great Recession. Absolute confidence in a return to growth has eluded doom-and-gloomers as fears of double dips, continuing problems in the Euro zone, and a generally skittish view of the world have lingered and caused continuing doubt.

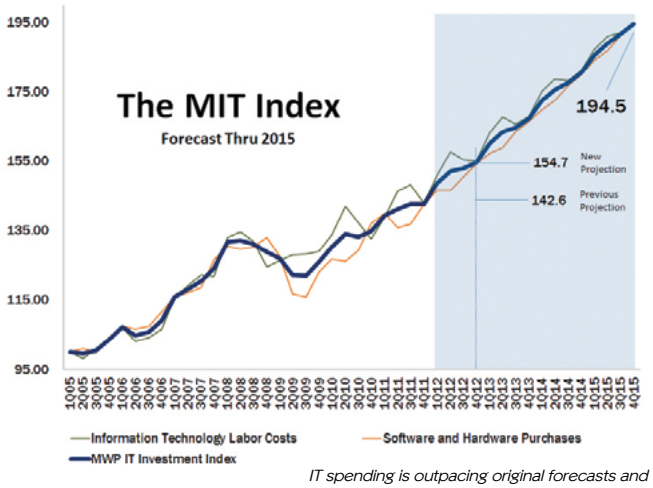
But now the wait is over for those of us who more often see the glass half empty than half full. In the world of IT, we've finally recorded several successive quarters of growth since the financial crisis of 2008 ended in the fourth quarter of 2010. Dozens of analyses completed over the last few months, not to mention the latest fourth quarter 2011 update to the Maven Wave Partners study on corporate spending on hardware, software, and the IT workforce, confirm that we're on a growth track. The forecast is very rosy indeed, and much of that can be attributed to the cloud.

The Silver Lining

Our MIT Index (a bellwether measure of aggregate spending on information technology) just released on April 18 was up as we predicted, but outpaced our projections by more than 6 percent. This increased pace was driven largely by stronger than expected hardware sales and more rapid increases in hiring than anticipated. Our previous model suggested that the fourth quarter 2011 would be a somewhat weaker quarter as companies continued to digest the substantial increase in IT investment made earlier in 2011. We projected that the MIT would step back roughly 3 to 4 percent in the fourth quarter of 2011.

That weakness did not manifest itself. Now that actual numbers for the fourth quarter of 2011 are in, we happily see that IT spending maintained its strength, remaining essentially flat from the previous quarter, but outpacing our forecast by roughly 3.8 percent. The MIT rose to 142.7 in the fourth quarter of 2011, meeting our forecast for the end of 2012 exactly one full year early.

Jeff Lee, Brian Farrar (author of this piece) and Jason Lee of Maven Wave



IT spending is outpacing original forecasts and set to reach an all-time high by 2015.

How do we account for the increased spending on IT? The way we see it, this is just the tip of the iceberg as enterprises begin to take advantage of the benefits and efficiencies of cloud computing.

After refraining from any significant upgrades and living with legacy systems for the last 3 to 5 years, companies are now ready to spend. However, they need to spend wisely and are therefore turning to cloud computing solutions. That is, in our opinion, the main reason why the MIT Index reached the projected year-end 2012 level one year early, in the fourth quarter of 2011.

Fairy Tale or Fact?

As a result, we've revised our forecast in the belief that IT spending will continue to expand as more enterprises adopt cloud computing. We believe the MIT will increase by between 35 percent and 40 percent to an all time high of 194.5 by the end of 2015. As we have noted in each of the several past quarters, the market has outperformed our model by an average of 5 percent.

Therefore, we have now revised our forecast upward for 2012 from 142.6 to 154.7 an increase of more than 8 percent. The revised positive projection syncs with our recent experience and conversations with clients, competitors and vendors in the market.

All of this is good news for our industry. The IT spending squeeze is officially over. The glass-is-half-empty contingent may still see another crisis looming around the corner, but the facts all seemingly support our thesis that the best is yet to come. IT

Brian Farrar is founder and partner of Maven Wave Partners (www.mavenwave.com).

A NID is a NID is a NID. Right?

Not exactly.

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By Paula Bernier

Forrester Offers Status Report on Cloud Standardization

We hear a lot about the cloud these days. Indeed, many suppliers and customers are jumping on the cloud bandwagon. But standards aren't keeping pace with the forward momentum of the market. However, there is movement on this front, and standards are expected to play a growing role in cloud technologies in the future.

According to James Staten and Lauren E. Nelson of Forrester Research, there's been plenty of involvement by hundreds of industry players in cloud standards. They site work by the Cloud Security Alliance, which tends to focus on security, interoperability and portability; the Distributed Management Task Force, which is working on interoperability APIs; and the National Institute of Standards Technology, a government group working to define cloud terminology. Other efforts on the cloud standard front, Forrester notes, come from the TechAmerica Cloud2 group; the Enterprise Cloud Leadership Council, a TM Forum effort that aims to overcome barriers to cloud adoption; the Global Inter-Cloud Technology Forum, a network protocol-focused effort out of Japan; and a couple working groups with the Institute of Electrical and Electronics Engineers, which are working on applying existing standards and creating interoperability standards for the cloud.

However, Forrester pronounces that cloud standardization won't happen in a significant way until 2015 because cloud operators aren't ready to adopt them, standard adoption typically involves lengthy formulation and approach processes, and existing IaaS stacks and management tools are helping fill the gap.

Says Forrester, "implementations like Citrix CloudStack look to help bridge the API gap by presenting a superset API that provides some compatibility and pass through of APIs that calls to the AWS, vCloud, and eventually OpenStack APIs. RightScale, Kaavo, BMC, and other cloud management vendors deliver a single platform and/or SaaS solution that lets end users access multiple IaaS clouds from a single UI in lieu of interoperability standards. Finally, monitoring tools such as Rackspace's Cloudkick fill the monitoring gaps within the marketplace for both public and private solutions." IT

CLEC Goes Cloud

Cbeyond, which became known as a CLEC selling bundled, IP-based unified communications, is now moving into the cloud, notes Zane Long, vice president of indirect channel sales. And the company is retooling its go-to-market strategy as part of the deal. Cbeyond in mid-February announced its new focus on the cloud, which aims to leverage the company's 2010 cloud service acquisitions. Cbeyond plans to spend 50 percent of its capex this year on cloud- and network-related initiatives. By the end of next year, according to company guidance, about a quarter of its revenue should come from cloud-only customers or cloud-added customers. Earlier this spring, Cbeyond introduced Remote Migration Services for SMB customers that are looking to do cloud implementations. The service features a four- to six-hour block of time with a Cbeyond engineer, who will help the customer migration to the cloud, bring up its application, make sure it works, and help the end users understand how it all works. Resellers are able to sell RMS under the brands of their choice.

Google Does Storage

Google was reportedly inching closer to rolling out its cloud-storage service that would directly rival Dropbox. The offer was expected to become available as early as mid April. The service, called Google Drive, was expected to offer 5GB of storage for free to anyone who signs up, and to be available across iOS, Android, Mac and Windows platforms. Drive was launched in response to the growth of Internet-connected mobile devices including smartphones and tablets as well as the rise of cloud computing, as noted by a TMCnet story by Erin Harrison.

Blogging on the Cloud

Evolve IP recently launched the Cloud IQ blog, which aims to help technology buyers make sound decisions about the future of their IT infrastructure, applications, and security services. The blog also seeks to help partners capitalize on new revenue-generating opportunities. "Since our first product launch in 2008, we have helped thousands of organizations evaluate the business impact of a cloud-based technology solution," says Tim Allen, chief sales officer at Evolve IP. "Through Cloud IQ, we want to share the experiences and expertise of our organization to help more companies realize the clear business results that the cloud offers."

Provider Intros Three Offerings

RingCentral, a cloud-based phone system provider based in California, recently launched Cloud-Touch, Cloud-Presence and Cloud-Connect. The new services allow business managers and administrators access to company phone systems through a smartphone or tablet computer, collaboration tools and document sharing in the cloud. The new Cloud-Touch features enables full management capabilities while on-the-go via any tablet or smartphone. Cloud-Presence lets users see when team members are available to chat or are busy with other projects, on the phone or out of the office for the day. The Cloud-Connect feature integrates with Google Docs, Dropbox and Box for sharing documents with other team members.

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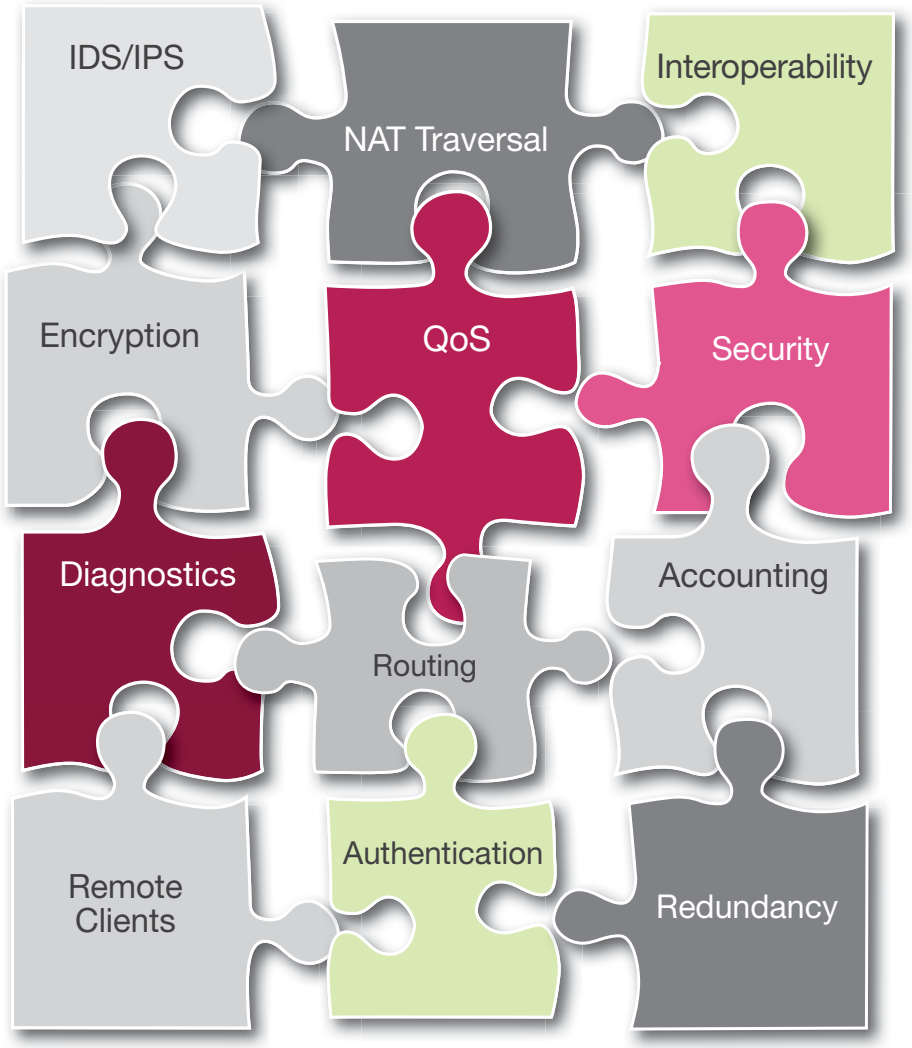

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By Shyam Koneru

Contact Center Virtualization Benefits: From Data to Desktop

Virtualization, while it has evolved significantly, has come full circle. It started decades ago where dumb terminals all connected to a centralized mainframe. The industry then moved away from the server farm when the technology became more affordable and shifted to personal computers that offered a faster, more robust user experience. Now, technology advancements are pushing us back to the future with the capability to virtualize essentially anything (data, e-mail, databases) at the server level and at the desktop, centrally. The updated technology and accompanying faster, more reliable network bandwidth mitigates the barriers of risk and speed and offers the flexibility that finally makes desktop virtualization achievable.

For example, without virtualization a typical 300-agent seat contact center uses eleven servers and requires dedicated power and human resources to provide call control of agent phones; facilitate the communication of multimedia coming into the call center; route and log call activity; configure the contact center via an administrative workstation; and manage call queues and enable interactive voice response or self-service applications.

While the number of components needed to maintain a call center remains the same, preconfigured architecture in a virtualized server environment consolidates not only these devices, but also the storage, support, power and network gear associated, proving real business value.

Companies also have options – looking specifically at Cisco, there are two virtualized server environments: a blade server series accompanied by an external storage area network or a rack server series with internal storage. The blade system accommodates more data capacity, but both have similar business benefits.

By utilizing a blade server system, like the one offered via Cisco's Unified Computing System Blade Series, a traditional server rack is replaced by a blade server chassis that occupies one-sixth of the original physical footprint (think fewer air conditioners, less power). The chassis accommodates eight individual servers with the capacity to map four of the necessary contact center software components to one blade, reducing the virtual capacity by 4:1. For a 300-agent seat call center, this means all data requirements live in a single chassis occupying less than half of the server capacity; lower cost of ownership in terms of power and maintenance; cost savings by purchasing support for one physical box that houses numerous components; and enough server resources remain to also host the majority of the 300 agent desktops.

That's all behind the scenes; for contact center operations, the action is at the desktop where the agent needs a phone and collaboration applications to make communication possible.


A Cisco phone

Through virtualization of both of these mission-critical units, the desktop can be transformed without affecting the agent experience. The virtualized phone, equipped with a backpack to act as the PC, and desktop client, powered via Ethernet, plug directly into the data center. For the contact center, this results in:

Faster, fewer upgrades

Every instance of the agent desktop is standardized and can be installed or upgraded simultaneously and promptly.

Flexible infrastructure management

Additional capacity is easily obtained by adding resources to the virtual server enabling existing infrastructure to scale to meet the needs of the entire organization.

More security

Sensitive customer data lives in a secure, central location and access to that data can be managed by disabling both the phone and desktop client at a specified time.

Access from anywhere

Regardless of supervisor or agent location, desktop controls can be accessed from any device via a VDI client.

Through contact center virtualization at both the data and desktop level, companies will realize an elevated value of their IT infrastructure with technology that is agile enough to grow and change as quickly their business does. IT

Shyam Koneru is the director of infrastructure at Spanlink Communications (www.spanlink.com), a Cisco reseller and integration partner focused on designing, implementing and supporting contact center and customer collaboration solutions.

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By Paula Bernier

Avnet Efforts Help Position Students for Tech Workforce

Jobs are the No. 1 topic of national discourse and the upcoming elections. That's no surprise, given the national unemployment rate at last glance was at 8.2 percent. Nonetheless, some job opportunities do exist for people who are in the right place at the right time with the right skill sets. And Avnet is enabling college and university students to develop those skill sets further, compete for scholarships, and network with some of the leading names in high tech at an event called Avnet Tech Games.

Hakim Muhammad, JaVana Brownfield and Justin Deroy from Arizona State University work to construct a robot before the Robot Race Obstacle course game at the recent Avnet Tech Games.

The most recent Avnet Tech Games took place April 14 in Tempe, Ariz., where more than 185 students (on 75 student teams) from 11 Arizona community colleges and universities came together to compete and to meet with representatives from Avnet, and others from tech leaders such as Accenture and Cisco.

"The Tech Games is really about keeping jobs in America," says Teri Radosevich, vice president of community relations and public affairs at Avnet, an Arizona-based company that is one of the world's largest distributors of electronic components, computer products and embedded technology.

This spring marked the seventh annual Avnet Tech Games, which was held at the University of Advancing Technology. Seven competitions were held on site and open to Arizona college and university students.

That included the Accenture Green Data Center Challenge, for which students created and delivered to a panel of judges PowerPoint presentations on their ideas and cost structures for making legacy data centers more eco-friendly. For example, one three-member team talked about employing technology that cools computing equipment by submerging it in mineral oil; freezing water at night and using it to cool the data center during the day; insulating floors and ceilings; centralizing cooling for efficiency gains; and using motion sensors for lighting to lower energy requirements.

Meanwhile, the Cisco Expert Battle had four three-member teams of students design, deploy, troubleshoot and repair networks that were similar to a small office configuration. And the Robot Race Obstacle Course involved 10 teams of three students each programming Lego MINDSTORMS robots to maneuver different courses.

Other on-site competitions were Building the Fastest Computer; the Digital Design Challenge, which involved creating, validating and documenting an FGPA design to work on a provided circuit board; Patch Panel Madness, which entailed building a working data network using a provided network diagram, cabling, patch panels, switches and racks; and Solar Scrimmage, which invited students to design, build, test and present a solar-powered system that could move water from one bucket to another.

The Tempe event also featured several other areas in which students could learn about technology and participate in activities. That included the Avnet Express Chevrolet Volt, which enabled attendees to learn about technology used in the vehicle; the Fastest Geek race to build a mini computer; and more. The work of college and university students outside of Arizona was also on display at the event, which has a related effort called the Spring Virtual Avnet Tech Games. The virtual games this spring included the Android APP Showdown, in which students developed Google Android apps using Google's Android SDK and Open API; the Green Video Competition, for which individuals created short videos on environmental initiatives at their colleges; Kevin's High Tech Home Makeover, for which students designed entertainment-, health- or work-related solutions for Kevin Olson, an Avnet employee and Avnet Tech Games champion who was paralyzed in a car accident; and the Microsoft Digital Signage Design Challenge.

Winning students – whether participating onsite or in the virtual games – received up to $1,000 in scholarship money. Faculty got $200 for leading teams and an additional $300 for each winning team. Since the games began in 2006, Avnet Tech Games has awarded more than $225,000.

Radosevich explains that the spark for the Avnet Tech Games involved the meeting of an Avnet employee and a person involved with the Arizona community college system, who mentioned that the tech industry typically worked with K-12 students and university students, but not so much with community colleges. That led to the launch of the Avnet Tech Games, which initially involved only students from the 10 Maricopa Community Colleges. The program has since expanded to include both college and university students in Arizona and across the nation. IT

By Rob Bellmar

Costs, Cloud and Connectivity Drive Strong Growth of Videoconferencing Market

Almost fifty years ago, AT&T demonstrated what could be possible with video communications when it showed off its patented Picturephone at the 1964 World's Fair in New York. Soon, AT&T installed these phones in booths located in Chicago, New York, and Washington D.C., but due to the prohibitive costs of using the phones, they were scuttled by 1968.

High costs would plague video communications for decades, especially in the business world, and to this day, the technology is still not considered mainstream. But that is all beginning to change, due to a variety of converging factors.

By 2017, the worldwide market for videoconferencing will reach $14 billion, according to a recent report by Global Industry Analytics, and additional industry research by Wainhouse Research shows that many organizations have documented videoconferencing usage increases of 50 percent or more in the past year alone.

So, why is videoconferencing finally coming of age?

For one thing, the technology is becoming more cost effective for business. The expansion of the Internet, with its increased bandwidth and wide availability of broadband connectivity, and the lower costs for video cameras and hardware, have combined to reduce the cost of videoconferencing. At the same time, the high cost of fuel and the impact on budgets are causing organizations to look for ways to reduce business travel. Suddenly, videoconferences are becoming a viable option.

Technological innovation is also removing usage barriers for businesses to use videoconferencing. For organizations to start adopting videoconferencing, it has to be just as easy as conducting an audio-only conference.

In the past, the lack of interoperability also served as a hindrance for growth. Dedicated systems and specially outfitted rooms were the norm, along with satellite uplinks for transmission. But now, through the use of cloud-based technology,

Rob Bellmar, who authored this article

service providers can offer solutions that allow people using Skype, Cisco or Microsoft Lync, as well as dedicated proprietary systems, to dial in for a conference and communicate with each other, regardless of their hosting platforms, their locations or the type of devices they are using.

Cloud technology is crucial to growing demand for the market, as it helps customers to avoid the high costs and complexities associated with traditional on-premises bridging solutions (commonly known as multipoint control units, or MCUs). Yet, companies can continue to use legacy equipment, rather than having to go through an expensive upgrade as user demand increases.

Wainhouse Research says that this increased interoperability is one of the drivers for market growth. The other driver it points to is the increased need for multipoint videoconferencing. In the past, it said, a typical video meeting would have included three specially-equipped conference rooms, but as the workforce becomes more mobile and video meetings become more ubiquitous, a video meeting will include a "few meeting rooms and an even larger number of personal users."

But, with all these variables working in favor for videoconferencing, there are still obstacles the industry has to overcome to make it a mainstream technology. And unfortunately, some of them have nothing to do with technology.

For starters, individuals have to become more comfortable being on camera. We are not all TV personalities who love the limelight. It is widely known that many people are more afraid of public speaking than they are of death. The idea of having their images and voices projected to a wide group of people is not enjoyable for everyone. But it is expected that as videoconferencing becomes more commonplace, people will become more comfortable with using it.

In addition to that, the next group of professionals coming from the Millennial Generation grew up using Skype or video cameras on their cell phones, and they have posted millions of videos to YouTube and other services. They have shown that their generation is much more comfortable being on video, and they are expected to use this technology as they populate the workforce in greater numbers.

Aside from the psychological issue, there is also a problem with multitasking. Many professionals keep working during an audio conference call – answering e-mails, reviewing written materials, etc., because the pace and volume of their responsibilities has continuously increased in today's working environment. Videoconferences might make meetings more efficient by making attendees more focused and visible, but that is a topic for a whole different discussion on the misperception between activity and true productivity.

Cloud technology is crucial to growing demand for the market, as it helps customers to avoid the high costs and complexities associated with traditional on-premises bridging solutions.

When AT&T presented its Picturephone, there were too many obstacles to overcome to make the video phone a success. Today, as videoconferencing becomes more cost effective, interoperability becomes a reality, and the workforce continues to push the need for multipoint videoconferencing, it appears that the market drivers are too strong for the industry to fail. But it sure would help if someone created a lens that took 20 pounds off a video image. **IT**

Rob Bellmar is senior vice president of conferencing and collaboration at InterCall (www.intercall.com), a subsidiary of West Corp., and the largest conferencing and collaboration services provider in the world.

Window Mobile's Kim Leaves

Gavin Kim has left Microsoft, where he was involved in marketing the company's Windows Phone effort, after just five months, TechCrunch reports. The long-time Samsung employee, who left that company as vice president of content and services, has jumped aboard NQ Mobile, which sells mobile security services and applications. He has been named chief product officer at NQ Mobile, which several other former Samsung employees have joined in the recent past as well.

AT&T Brings 4G to the Heartland

AT&T recently turned on 4G LTE in Akron and Canton, Ohio, and Lafayette, Ind. That brought its total LTE markets to 35. AT&T says it operates the nation's largest 4G network, covering nearly 250 million people. Its 4G network leverages both LTE and HSPA+ technology. "The investment we've made to our networks in Ohio alone has equated to a million dollars every single day of the last three years, so bringing 4G LTE to our state is just the latest example of this significant infrastructure investment," says AT&T Ohio state president Tom Pelto. "Ohioans enjoyed more than 1,500 upgrades to our wireless network in 2011, and those enhancements continue with today's announcement."

ADVA Gets in Synch with 4G

ADVA Optical Networking has introduced the Syncjack suite, which was designed to deliver precise timing synchronization and assurance across mobile backhaul networks. Syncjack, a feature of the FSP 150, supports SyncE and IEEE 1588v2. "We believe that Syncjack is a breakthrough for the industry," says Christoph Glingener, CTO, ADVA Optical Networking. "Synchronization and assurance on one platform is something that has not been done before. Syncjack is the missing piece for mobile operators migrating to 4G networks. It provides in-depth understanding on the performance of the timing network and this is critical when leasing backhaul connectivity. Yet it also offers automated test and measurement capabilities that significantly reduce operational complexity."

Mobile and Online Deals Dropped in 1Q

Transaction volume of mergers and acquisitions in the mobile and online industry declined 4 percent in the first quarter of this year, according to Berkery Noyes. At the same time, the independent mid-market investment bank reports, the deal value of M&A in this market decreased 14 percent to $12.8 billion. The SaaS/ASP segment was responsible for five of the largest deals; that included Oracle's announced acquisition of Taleo for $1.8 billion – the largest transaction in this space. Two of the other top 10 deals were in the e-content space. And the sole top 10 e-marketing and search transaction was Singapore Telecommunications' announced acquisition of Amobee for $321 million.

Verizon Wireless Aims to Sell A & B Spectrum

Verizon Wireless aims to sell off its 700mHz A and B spectrum licenses, which cover dozens of major U.S. cities, and several smaller and rural markets, in an effort to get the Federal Communications to green-light its purchase of Advanced Wireless Services licenses from Cox, Leap Wireless, and a consortium of cable TV companies called SpectrumCo. Verizon Wireless plans to rid itself of the A and B spectrum licenses in an open auction. The company is using its 700 MHz upper C spectrum for its LTE build, and hopes to add to that by acquiring the additional licenses for AWS.

87M 4G Devices to Ship in 2012

4G devices are expected to generate 87 million in unit sales this year, according to ABI Research, which says that would be a 294 percent year-over-year increase. "The lion's share of the market is now backing LTE as service provider and vendor support has fallen away from WiMAX," says ABI Research's Jake Saunders, vice president of forecasting. Video streaming, gaming and advanced types of social networking will push 3G customers to 4G, according to the firm.

Infonetics: Diameter Signaling Control Will Grow

Diameter signaling control is becoming a hot new area of focus in wireless networks, notes Infonetics Research. That comes in the wake of high-profile, Diameter signaling-related outages at NTT DoCoMo, Telenor and Verizon Wireless. While Tekelec is a leader in this space, Infonetics says that at least 15 other suppliers will come out with diameter signaling controllers by the end of this year. Infonetics forecasts a 106 percent company annual growth rate in diameter signaling control revenue through 2016.

By Paula Bernier

Document Management

Oce Business Services Talks Trends, Requirements

It's the age of big data. And more information means not just more storage and a requirement for bigger pipes, but also different requirements when it comes to managing documents and related businesses processes.

Indeed, Ron Glaz, IDC program director for digital imaging solutions and services, in an October 2011 report, noted: "The worldwide document solutions market continues to grow at a healthy rate of 6.8 percent. Growing integration of mobility solutions within businesses is expected to drive security and mobile printing software to obtain double-digit growth rates during the forecast period."

To find out more about the document management space, INTERNET TELEPHONY recently interviewed Ken Neal of Océ Business Services.

Define document process management. What does it entail?
Neal: Document process management entails managing the linked business processes that make up this complete cycle of events, in electronic or paper form. Our services include records management, imaging, print center management, managed print services, mail and shipping, and electronic discovery (eDiscovery). Most importantly, implementing document process management, whether internally or outsourced, can help organizations reduce costs, improve efficiency and optimize performance. While Océ Business Services is a major player in document management, we are also expanding our leadership into business process management. The relationship between the two is that document management supports the business process, such as accounts payable.

The company was recently acquired by Canon USA. How does what Océ does sync with Canon's strategy?
Neal: In 2010 Océ joined the Canon Group of companies with headquarters in Tokyo, to create the global leader in the printing industry. Canon develops, manufactures and markets a growing line-up of copying machines, printers, cameras, optical and other products that meet a diverse range of customer needs. The Canon Group comprises over 198,000 people worldwide. Global net sales in 2011 totaled $45.6 billion.

Who are Océ's customers?
Neal: Océ Business Services primarily serves large and mid-sized enterprises, law firms, educational institutions and the public sector in North America. A significant percentage of our corporate clients are FORTUNE 500 companies, and a solid percentage of our legal industry clients are law firms ranked on the annual Am Law 100 list.

What exactly does Océ sell to these customers?
Neal: We supply people, process and technology; technology includes both software and hardware to which we add value through integration and subject matter expertise. Our services are contracted for by both project-based and multi-year agreements.

How does Océ stand out from other document management providers?
Neal: One key differentiator is that we do not focus on only selling equipment or providing service in one specific area such as mail management. In contrast, our integrated services span the full document lifecycle, from document creation through disposal. Second, our services are independent of deploying any specific brand of equipment, and therefore we can truly customize our services to meet our clients' business and technical requirements. Third, we can provide our services via a flexible, blended delivery model utilizing our onsite, offsite and offshore operations. Fourth, we offer clients deep expertise in Six Sigma methodologies that can help them drive continuous process performance.

What is the biggest challenge in terms of document process management today?
Neal: Many companies, for example, are struggling with a legacy technology infrastructure that is not meeting their current business needs. Additionally, many organizations have limited staff with limited expertise in document process management, and they lack the knowledge of how to optimize and continuously improve document management activities. Another big challenge is a lack of policies, processes and procedures to effectively meet government and industry compliance requirements, which increases risk.

Ken Neal of Oce Business Services

What is the biggest trend in terms of document process management today?
Neal: One important trend is that enterprises can improve productivity, achieve better customer satisfaction and drive savings in their document-intensive business processes with an optimized document intake or imaging operation. This is a finding of a recent industry survey conducted by a major analyst firm and sponsored by Océ Business Services. The study also concluded that optimizing a business process imaging operation should go beyond the deployment of technology and must also include ongoing expert management of both the workflow process and the people utilizing the technology.

What's next for document process management?
Neal: The strongest areas for spending this year according to a significant majority of survey participants are document imaging (91 percent) and records management (88 percent). IT

By Tom Keating

TMC Labs Innovation Awards UC 2012

Unified communications continues to have rapid growth, both in technological improvements and deployments. The unification of voice, video, desktop sharing, instant messaging and other communications technologies improves employee productivity and lowers the total cost of ownership.

This year we had one company (JDSU) win two awards, which is very rare. JDSU offers a couple of innovative products that improve testing methodologies and give deeper insight into your network to troubleshoot VoIP, video, and cloud-based offerings, such as hosted UC. We also have a couple of innovative high-end video telepresence systems from ClearOne and LifeSize.

This year marks the 13th annual TMC Labs Innovation Awards where we honor products and services that have unique and innovative features that often differentiate them from their competitors. For 2012 we have ten TMC Labs Innovation Awards winners. Here they are:

WINNERS

Company	Product	Website
ADTRAN Inc.	NetVanta Unified Communications (UC) solution with Notification Server	www.adtran.com
ClearOne	COLLABORATE	www.clearone.com
Hughes Network Systems	Hughes Enterprise VoIP	www.hughes.com
JDSU	JDSU PacketPortal	www.jdsu.com
JDSU	JDSU TrueSpeed Automated TCP Test Solution	www.jdsu.com
LifeSize, a division of Logitech	LifeSize ClearSea	www.lifesize.com
Siemens Enterprise Communications	OpenScape UC Suite	www.siemens-enterprise.com
snom technology	snom UC edition portfolio for Microsoft Lync	www.snom.com
Symphony Teleca Corp.	m-Suite	www.symphonyteleca.com
Toshiba America Information Systems	Strata Meeting	www.telecom.toshiba.com

ADTRAN Inc.
NetVanta Unified Communications Solution Suite with Notification Server
www.adtran.com

ADTRAN's NetVanta UC suite targets small, medium and large enterprises (two to 2,000 employees), and includes features such as voice mail, unified messaging, fax server, auto attendant and communication-enabled business processes.

ADTRAN espouses the platform's extreme level of granular personalization and flexibility enabling each user to administer its own configuration and settings.

The NetVanta UC Solution Suite allows you to deploy the solution in virtual environments, which increasingly is becoming a requirement of IT management due to its ability to consolidate servers, conserve space and reduce costs. This also enables service providers and resellers to offer cloud-hosted solutions

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based on NetVanta UC. Virtualization also adds business continuity and disaster recovery.

ADTRAN recently added NetVanta UC Notification Server (UCNS), which is an automated notification application. It can pull data from a customer's ODBC-compatible database or business process systems and deliver information by phone and/or e-mail. An example would be outbound calling for schools sending announcements that school is being postponed or cancelled due to inclement weather; reminders about clients' appointments; or emergency notifications. Approved personnel can simply dial into the system, record a message, and send it to all or selected records within a given database.

One of the critical pieces of the UC suite is the NetVanta Unified Communications Server, which is a software application designed for Microsoft Windows platforms, can scale to more than 2,000 users per server. It is capable of supporting UC on one or more different types of PBXs from a variety of leading manufacturers. This server provides a core set of UC capabilities including unified messaging, fax server, auto-attendants, personal assistants, graphical drag-and-drop non-programmatic service creation, interactive voice response for inbound and outbound calling services, integration with ODBC databases, text to speech, one-number services, call redirection services, and notifications.

ClearOne
COLLABORATE
www.clearone.com

ClearOne is renowned for its superb audio conferencing devices with multiple microphones, distributed echo cancellation, and noise cancellation. What you may not be aware of is ClearOne's foray into videoconferencing, with the launch of COLLABORATE, an all-in-one voice, video and data collaboration solution that launched in July 2011. ClearOne took its unique HDConference audio technology and integrated it into the COLLABORATE solution. One of the key features is distributed echo cancellation, which helps eliminate acoustical echo. The platform assigns an acoustical echo canceller to each microphone, so that the echo canceller identifies the sound that would otherwise be returned to the far end as echo and eliminates it.

ClearOne was the first to introduce distributed echo cancellation in 1998, and the company incorporates it into every audio conferencing system. Another key audio feature is First Microphone Priority. When multiple microphones are active simultaneously in an audio conference phone, voice signals arrive at different microphones at different times due to the reflection of the sound from walls, ceilings or other surfaces. This causes sound distortion, which participants typically describe as a hollow or tunnel sound. ClearOne's First Microphone Priority technology minimizes this distortion by using an intelligent voice detection method to activate only one microphone at a time based on its proximity to the person speaking. One other interesting audio enhancement is ClearEffect, which creates natural, full-sounding audio by simulating the high and low tones that were eliminated by the most common narrow-band (64kbps) audio signal.

You can get the solution with one or two 46-inch LCD HD (wall-mountable) displays with an Integrated Quad core PC and ClearOne audio mixer, Windows 7 Ultimate Operating System, HD USB camera, Collaborate microphone, Collaborate Soundbar, wireless keyboard and mouse. This comprehensive plug-and-play audio and video package enables you to perform unified communications, presentations, web conferencing, audio/video conferencing, VoIP, and more. Since it runs on Windows 7, you can run popular UC clients, such as Microsoft Lync, Skype, Vidyo, ClearSea, and others.

ClearOne claims COLLABORATE costs 40 percent to 50 percent less than competitive solutions, which are not integrated and require the additional components. Due to this integration, the company claims to offer the smallest footprint available in a room conferencing system.

One other innovative feature is that when not in conferencing mode the optional VIEW Multimedia Viewer allows users to consume rich, high-definition multimedia content from anywhere on the enterprise network in the form of live media broadcasts, corporate presentations, on-demand videos, real-time dashboards, digital signage, etc. In the last six months, ClearOne has added a software-based videoconferencing codec, which has built-in SIP/H.323 interoperability, data sharing, recording and streaming option and can support up to 1080p resolution.

Hughes Network Solutions LLC
Hughes Enterprise VoIP
www.hughes.com

Hughes Enterprise VoIP was launched in January 2011 and targets highly distributed multi-site enterprises ~~th~~ose with 50 to 10,000 locations ~~su~~ch as retail, restaurant and convenience store chains. Hughes Enterprise VoIP relies on the Hughes Converged Broadband Architecture (CBA) networking platform, which incorporates innovative, proprietary technology to ensure end-to-end QoS and high network availability.

Hughes Enterprise VoIP provides distributed enterprises with all of the benefits of converged voice and data services, including the advanced features and convenience of VoIP, while significantly lowering overall telecom costs – as compared to leased line MPLS alternatives – for the branch site. As an example, for a distributed network requiring high-speed WAN and with five voice lines at each site, the total spend, including fees and taxes, would cost approximately

$700/site/month with a T1/MPLS. In comparison, Hughes' solution costs less than $400 per month. For an enterprise with 500 sites, this amounts to a savings of more than $5 million over a typical three-year term.

The architecture includes analog telephone adaptors that reside on the customer premises, and Metaswitch feature servers, Acme Packet session border controllers, and Cisco routers on the hosted side. All hosted-end components are fully redundant in the data centers, and there is another layer of redundancy provided by geographically diverse data centers. Also, the company provides the Hughes access router, HN7700SR, which incorporates Hughes WAN Optimization and Hughes ActiveQoS technologies and its peer gateway, routers, and firewalls on the hosted side.

Hughes ActiveQoS technology ensures proper treatment of real-time traffic across what would otherwise be a best-effort connection. Hughes ActiveQoS uses sophisticated premises-based intelligence to transport real-time traffic with significantly reduced jitter and packet loss end-to-end over a broadband network. The result: consistent high-quality voice calls. In addition, Hughes CBA incorporates integral WAN optimization, which creates bandwidth for multiple voice calls over broadband by applying data reduction technology for all non-VoIP applications.

Hughes told TMC Labs, "To the best of our knowledge, Hughes Enterprise VoIP is the first service to offer enterprise grade voice/data convergence over broadband VPN. This capability is of significant value to the distributed enterprises, where voice/data convergence remains limited due to the high cost of leased line access."

JDSU
PacketPortal
www.jdsu.com

TMC Labs is very impressed with JDSU's PacketPortal, which truly is an innovative network monitoring and management software tool. Targeting wireless and telecommunications operators, MSOs, enterprise service providers, and NEMs, JDSU's PacketPortal is a new software solution (with a February 2012 launch) that gathers intelligence on voice, video and data applications anywhere in the network to aid troubleshooting and optimize the customer experience. The platform offers visibility at every hop in the network, enabling a technician at a central location to locate and fix problems quickly without deploying field technicians, saving opex.

It utilizes intelligent microprobes that are easily embedded in the customer's existing routers, switches and other network elements without increasing footprint or power consumption. These microprobes are auto-discovered and registered with the PacketPortal software platform residing at the host location, providing network intelligence for the service provider's application environment. Impressively, the first generation of PacketPortal captures network data from optical transceivers using small form factor pluggables about the size of a USB memory stick. JDSU shrunk down the data collection to fit inside the microprobe. Standard optical ports can now all be data collection nodes, providing scale and reaching the network's edge. JDSU told TMC Labs, "In the long term, every network element can be PacketPortal enabled. In the near term, even if we only consider the number of access points at the edge of service provider networks, the market is about a billion dollars." JDSU added, "PacketPortal is the first to cost-effectively provide service providers with remote visibility all the way to the network edge – where 80 percent of customer issues occur – and uses an innovative cloud-based approach to separate data collection and filtering from management and analysis."

PacketPortal was introduced with five comprehensive customer experience management applications. They cover the full gambit of networking monitoring, including support for 4G/LTE, triple-play and consumer content analysis. That includes JDSU Signaling Analyzer Real Time (SART), JDSU Triple Play Analyzer, JDSU Network Analyzer, Wireshark, and nProbe with Netflow support. Combined, these five applications offer wireless analysis, VoIP analysis, voice and video quality analysis, packet analysis, and much more. Perhaps the most innovative design feature is how PacketPortal has decoupled the functions of data collection and filtering from network management and aggregation. Besides the obvious benefits of reduced size, cost, and complexity, JDSU's PacketPortal also has an innovative cloud approach to managing network intelligence gathering.

JDSU
JDSU TrueSpeed Automated TCP Test Solution
www.jdsu.com

In September 2011, JDSU developed the test methodology known as RFC 6349 in collaboration with two major global network operators. It was recently published by the Internet Engineering Task Force as a repeatable service activation test method for managed IP networks. Knowing that JDSU was deeply involved with this new testing RFC standard certainly gives JDSU deep insights into service providers' testing methodology wants and needs.

No doubt JDSU designed the innovative JDSU TrueSpeed Automated TCP Test Solution with this RFC in mind, which indeed is fully compliant to the new IETF RFC 6349, Framework for TCP Throughput Testing. TrueSpeed enables service providers to install and test Ethernet services without impacting business applications that run on the transmission control protocol layer. JDSU explained, "Traditionally, the provider installs Ethernet services using RFC2544 or other types of layer 2/3 tests, but the customer's business applications run on the TCP layer. This gap in testing is the cause of customer complaints/churn

and significantly increases opex for service providers, due to additional truck rolls per service activation."

The platform gives you the ability to ensure end customer satisfaction before service is activated, prevent customer churn, avoid future troubleshooting truck rolls, and solve the bandwidth discrepancy mystery by applying best practices per RFC 6349. With TrueSpeed, field technicians are able to evaluate the TCP and application layer in less than five minutes. JDSU customer case studies show that TrueSpeed saves service providers at least 20 percent on operating expenditures by resolving more issues remotely. Leveraging a test methodology JDSU developed (RFC 6349), it can measure the end user quality of experience when uploading and downloading video and other high-bandwidth content. Importantly, it is fully automated TCP testing ensuring that even inexperienced technicians can perform TCP throughput tests. XO Communications is a well-known company leveraging the TrueSpeed platform in its network.

LifeSize, a division of Logitech
LifeSize ClearSea
www.lifesize.com

When you think of high-end videoconferencing and telepresence systems for the enterprise, certainly Cisco, LifeSize, Polycom and Vidyo come to mind. LifeSize pioneered the HD telepresence market, bringing the first HD telepresence system to market back in 2005. LifeSize ClearSea is its enterprise-class client/server solution for desktop and mobile video collaboration. LifeSize ClearSea is open and interoperable; users can seamlessly connect from their desktops or mobile devices to any standards-based video collaboration system or infrastructure solution in seconds. LifeSize ClearSea Server is available as a hardware appliance or virtual machine software and includes a HD desktop client for PC/Mac and Android/iOS smartphones and tablets.

ClearSea supports both H.323 (legacy equipment) and SIP endpoints (with encryption support) with video resolutions that include 1080p, 720p, 4CIF, CIF, QCIF, SQCIF; up to 2mbps on desktop. ClearSea helps lower the TCO with excellent management features, including automatic provisioning, configuration and secure authentication of LifeSize ClearSea client based on user credentials and automatic update of new client releases. It supports user authentication with external databases/LDAP and a centralized contacts directory for ease of management as well.

The platform supports H.239 presentation, H.224, H.281, H.263, H.263+, and H.264. Importantly, it acts as a session border controller to handle NAT/firewall traversal. Video supports multiparty 1080p at 30 fps, with up to 26 participants, and no limit in concurrent rooms. The audio codec support includes G.711 μ-law, A-law, G.722.1 Annex-C (Polycom Siren14), and it has full-duplex Acoustic Echo Canceller and Audio Denoise Filter with VAD. It also supports call recording with playback and export capabilities. Importantly, you can send in-band or out-of-band DTMF. Further, to improve the user experience, it supports automatic bandwidth control, adaptive to actual network conditions and adaptive low-latency packet-loss recovery. Lastly, it sports excellent mobile client access with the first HD telepresence solution to support both iOS and Android.

Siemens Enterprise Communications
OpenScape UC Suite
www.siemens-enterprise.com

OpenScape UC Suite is a unified communications platform that can scale to hundreds of thousands employees. Siemens architected UC Suite to support up to 40,000 users per cluster, and up to 500,000 users per system. The architecture also features unified domain clusters for presence, messaging, contact and directory integration. Once you get to this size, federation with other UC platforms becomes critical. Siemens UC Suite supports expanded multi-vendor presence and messaging federation enabling seamless collaboration with other XMPP-based UC, messaging, social media and collaborative solutions including Google Apps. OpenScape UC Suite is available as either a hosted or on-premises solution. In a hosted scenario, the solution resides on servers in the hosted data center; on the customer premises it requires just the users' phones and laptop/desktop computers. Siemens told TMC Labs, "Because it is an open, standards-based system, we don't create vendor lock-in, and we offer an easy migration path to UC. We offer proven enterprise-grade voice capabilities. We are massively scalable with minimal server footprint. We don't rely on third-party [companies] for service and support, and we don't impose complex and expensive proprietary technology stacks."

OpenScape Mobile UC Client for Android and iOS, featuring new OpenScape Communication Gestures, supports an innovative Call Swipe Gesture to transfer calls-in-progress seamlessly to other devices with intuitive hand gestures on a touch-screen interface. The mobile clients also feature presence, one-number service, and VoWLAN. In the last six months, the company has improved administration and maintenance, made installation and configuration easier, enhanced virtualization, security, web collaboration, desktop videoconferencing, and integration clients for the most common groupware solutions.

snom technology
snom UC edition portfolio for Microsoft Lync
www.snom.com

snom UC edition portfolio for Microsoft Lync is a line of IP desktop phones designed for unified communications and qualified for use with Microsoft Lync Server 2010. The portfolio features three phone models – the snom 821 UC, snom 370 UC edition, and snom 300 UC edition, which are currently the only phones on the market

compatible with both Microsoft Lync and standards-based (SIP) IP PBX platforms. This allows enterprises to use a single set of phones that can operate in a mixed environment of Lync 2010 and SIP on a single phone without an additional gateway – making migration to Microsoft Lync a smoother process. The portfolio also includes a fourth model, the snom UC600, specifically designed for only Microsoft Lync.

The snom UC portfolio adds support for the productivity features included in Lync, such as presence, server-side address book search, and quick dialing from Lync buddy lists. It also features HD voice, conferencing, three-way calling, multiple lines, status buttons and address book. snom claims that the snom UC portfolio of IP desktop, SIP-based phones are the first and only standards-based devices that are compatible and qualified for Microsoft Lync Server 2010 as well as hosted Lync, leveraging the Microsoft Lync Server 2010 Multitenant Pack for Partner Hosting reference architecture. This makes the snom line of IP phones perfect for cloud-based Lync service providers. The phones are capable of supporting multiple SIP and/or Lync accounts (up to 12 for the snom 821 UC edition, up to four for the snom 300 UC edition). The snom 821 executive-class desktop phones include a high-resolution TFT color display and an on-board gigabit Ethernet switch.

Symphony Teleca Corp.
m-Suite
www.symphonyteleca.com

Symphony Teleca m-Suite is a portfolio of services, platforms and partnerships that help enterprises accelerate their mobility strategies, retain control of their costs, and manage their mobile security. m-Suite includes m-Suite Mobile Enterprise Application Platform (MEAP) 2.11, m-Suite Enterprise Application Storefront (EAS) V6.0, m-Suite Mobile Device Management (MDM) based on SAP's Afaria 7.0 platform , and m-Suite Customer Lifecycle Management (CLM) 11.10. m-Suite, and associated Enterprise Mobility Services, targets large enterprises and top-tier service operators.

m-Suite is provided as a fully managed, cloud-based service. Customers just need secure browser access and VPN connectivity. It supports the major cloud providers, including Microsoft Azure, Amazon Web Services and private cloud. Symphony Teleca has developed its own proprietary technology stack to optimize cloud deployments, thereby delivering m-Suite from a mobile- optimized cloud.

Symphony Teleca claims to be the first to offer a truly integrated mobile device management and telecom expense management platform and the first to offer mobile apps for telecom expense management, which cover all major the smartphone operating systems – iOS, Android and BlackBerry. The company also claims to be the first to deliver a cloud-based MEAP, and first to provide a platform that is integrated with an enterprise application storefront. The latest release of m-Suite CLM grants enterprises the ability to define and deliver complex mobile device and telecom expense manage workflows using a simple graphical user interface.

Symphony Teleca took its popular consumer app store platform and augmented its feature set to meet the demands of the enterprise market. Symphony Teleca explained, "Enterprise employees can now enjoy a rich consumer-like user experience when discovering and accessing mobile applications and services. IT departments benefit from reduced operational and support costs, and are able to provide their end users with secure access to corporate resources and tools without sacrificing corporate governance."

Toshiba America Information Systems, Telecommunication Systems Division
Call Manager for IPedge
www.telecom.toshiba.com

Toshiba's Call Manager for IPedge gives enterprise and SMB users of Toshiba's IPedge IP business telephone systems a powerful unified communications solution that includes a friendly graphical user interface (ribbon GUI), button flexibility, fully featured call control, presence viewer, IM chat, and a softphone option.

Softphones aren't new; however, Call Manager truly emulates the complete functionality of the desk telephone. This goes well beyond the basics by adding multiple DN appearances for call coverage and easy multiple call answering, feature prompting with soft key operation, fixed and programmable feature buttons, etc., just as if you were sitting at your desk phone. Call Manager creates a dual-use scenario in which it's used both at your desk as a UC client to provide all the usual desktop call control, presence, IM/chat functionality, and also used remotely as a softphone to provide the same UC functions as those on your desk telephone.

The Ribbon UI groups all the common features and functionalities together to make it fast and easy to find the feature or functionality needed. The Ribbon format features multiple tabs, each of which is broken down into groups. Call Manager 7.5 allows the user to choose one of three display modes: regular, compact, and slim docking. Call Manager 7.5 has hot keys that allow the user to click to dial any highlighted number. Users can also assign many new functions to hot keys, including answer and hang-up, which is especially important in high-volume call centers where keystroke shortcuts are faster than reaching for the mouse and clicking on a button. Users can program up to 200 different triggers and actions, allowing them to customize Call Manager 7.5 for their own unique personal call handling applications. IT

Unified Communications is about People, not Technology

By Erik Linask

Look across the UC landscape – what do you see?

You see the two giants, Cisco and Avaya. And you see a host of other very recognizable brands that have somehow fallen into the shadow cast by the two market leaders. But, times seem to be changing, and the value proposition offered by some of these other players is putting the pressure on the frontrunners. Now, not only do they have to compete against each other for market share, they also need to look carefully at the likes of Siemens, ShoreTel, and several others.

Over the past few months, I've spoken with many of these companies – there is a distinct difference in the approaches to the market between incumbents and challengers. Specifically, the contenders – who also seem to be the ones making greater inroads as the IP communications market overtakes traditional voice – are focusing on what I'd call the basics capabilities of voice and UC and the ability to just make things work.

"The model business person has to be productive and have the capabilities to do things intuitively," says Peter Blackmore, ShoreTel President and CEO. "Getting the mobility piece right is huge – it's almost the holy grail. Everyone has some answer to mobility, but we really got down to making it truly an extension of your PBX."

It's not that the additional cloud services and collaboration features aren't useful, or that they don't add to the UC experience. But they aren't core to the day-to-day UC use case, and they tend to add complexity, rather than reduce it. And they certainly add to the price tag.

If, every time businesses want to add a new feature or capability, their monthly bill grows, the likelihood is they will forego additional capabilities in favor of cost savings.

"It's hard to do UC if you don't have access to the tools," says Bobby Mohanty, vice president, product management at Vertical Networks. "If people have to make decisions based on cost, they tend to limit what people can do and how they can collaborate."

It's more about cost efficiency than cost savings.

Perhaps more importantly, they are equally content making their stuff work with Avaya's or Cisco's pieces as they are selling a complete end-to-end solution. (We know how those two feel about playing nice with other vendor's hardware.)

"It's not a tech debate anymore – It's about bringing it all together in a way that works for the business and drives productivity and business impact," explains Siemens Enterprise Communications' global CMO Chris Hummel. "It's not hard to say, but it's been very hard to do." (Hummel will be keynoting ITEXPO West in Austin, Texas, this October. Visit www.itexpo.com for more.)

Siemens has long touted the benefits and value of openness in communication platforms, helping business leverage existing infrastructure while moving into the new world of UC, eliminating unnecessary CAPEX while driving process efficiencies.

Process efficiency has always been part of the ShoreTel story, with its "Brilliantly Simple" tagline. In fact, I've taken on the task of making moves, adds and drops on a ShoreTel system with no instruction. No problem. IT staff are able to move quickly on to other network management tasks, spending little time on the phone system.

Which is why Vertical has adopted what amounts to a single price model, where once business buy the license, they have access to all the Vertical UC apps and services, including IP PBX, conferencing, call recording, archiving and management, CRM integration, desktop call control, and IM. Vertical also has a mobility solution for iOS and is readying one for Android.

So where's the difference? It's really in the understanding that businesses have a choice and vendors cannot win by forcing them to use complex, proprietary, expensive solutions anymore. Today's UC certainly about cost savings, but it's more about being able to connect people across multiple networks and devices, increasing efficiency, thus increasing ROI. It's more about cost efficiency than cost savings.

That understanding is why companies like Siemens, ShoreTel, and Vertical will continue to succeed. They have corporate philosophies toward their UC products and customers that, as Blackmore says, are "the anti-Cisco." IT

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