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Update from OpenWorld

I recently spent a week in San Francisco at the Oracle OpenWorld event. Among top speakers were Larry Ellison and Michael Dell. (For details on Dell's news and the Dell keynote, see the Open Source and Special Focus sections of this magazine.)

Oracle used its event to talk about its cloud strategy and expanding product line. Oracle Cloud delivers Customer Experience, Enterprise Resource Planning, Human Capital Management, and Social service suites. And at the event in late September the company announced that Oracle Cloud services also now includes Billing and Revenue Management Cloud, Business Intelligence Cloud, Compute Cloud, Database Cloud, Database Backup Cloud, Documents Cloud, Mobile Cloud, Java Cloud, Object Storage Cloud.

The company also has opened for busi-ness its Cloud Marketplace, where Oracle partners can publish their applications and customers can access them. It includes more than 100 business applica-tions developed by Oracle partners.

Chris King, senior director of product marketing-communications industry at Oracle, explained that Oracle Billing and Revenue Management Cloud helps enterprises evolve from selling physical to digital goods by providing them with a subscription-based billing system. Billing, King added, is a relatively complex pro-cess, so this solution removes one of the key challenges in this customer transition.

Most organizations offering solutions on this front, King added, are startups, so they don't have the depth of experience offered by Oracle, which already provides on-premises billing solutions for hundreds of customers.

"This represents a safe choice," King said, adding that Oracle offers a proven solution and has the financial and human resources to support its customers.

He went on to say that customers using the new Oracle Billing and Revenue Man-agement Cloud can bill on a wide variety of metrics, including time, volume, or just about anything else.

As for the Business Intelligence Cloud, it provides visual, interactive dashboards, available via the web and mobile de-vices, for administration, analysis, data loading, and modeling. Compute Cloud offers elastic compute capabilities to run any workload in the cloud. And Database Cloud lets customers spin up dedicated database instances as needed, and sup-ports any Oracle Database application.

Meanwhile, Database Backup Cloud allows Oracle Databases to be backed up and replicated to the Oracle Cloud. Docu-ments Cloud enables folks to do secure file sharing and collaboration via desktop and mobile devices. Java Cloud provides Oracle WebLogic Server clusters for deployment of Java applications and gives full administra-tive control over the service with auto-mated backup, recovery, patching and high availability capabilities. Mobile Cloud lets businesses build and secure any application to run on any device connected to any data source. And Object Storage Cloud offers a highly-available, redundant, and secure object store for lots of unstructured data.

I got into San Francisco for Oracle Open-World on Monday afternoon, so I missed seeing Larry Ellison's opening address. But I caught part of it via the stream available on Oracle's website, and during his talk Ellison discussed the data center of the future. He said more purpose-built machines in the data center of the future, and that by designing hardware and software together you enable people to use fewer machines, less floor space and electricity, and allow for better management. That will also make things much more reliable, he added.

Isn't that what the growing network functions virtualization camp keeps tell-ing us is exactly what we're supposed to be moving away from?

I understand that concepts usually aren't as simple as they may at first seem.

In any case, Ellison's discussion about de-veloping hardware and software together was a real jolt after hearing so much about disaggregation of the two. **IT**

GENBAND Buys Fring to Make Carriers Sexy
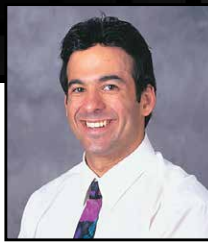
Carriers are scrambling right now as they see OTT services such as Skype and WhatsApp eating into their revenues. Indeed, David Walsh, GENBAND's new CEO, noted that OTT players have taken 30 percent of voice traffic in seven years and how service provider voice growth is now around 3 percent per year.

In response to this onslaught of new competition, carriers have come together to develop standards that will allow their telecom equipment to run on off-the-shelf servers so they can more effectively compete with their app-based competitors. This initiative, known as network functions virtualization, or NFV, will help turn hardware-based telcos into software telcos – allowing them to be more flexible in rolling out new offerings while saving money in the process.

This, however, will take time to happen. In the meantime, carriers need to respond to this threat.

To get carriers into the OTT game immediately, GENBAND has purchased OTT player Fring, one of the earliest apps on the iPhone, to support VoIP. The company has amassed 40 million users, and Walsh infers they are big enough to scale but small enough to not be a major threat to telcos, which of course make up GENBAND's customer base.

GENBAND has just turned itself into the arms dealer allowing carriers to fight back against OTT with their own white-label solutions.

Think about it – what is the biggest problem a carrier has when competing with a software company run by a bunch of hackers who live on chicken wings, Mountain Dew and pizza? The answer is corporate culture. Carriers aren't software companies. They don't understand user interfaces, slick design, or much of what consumers are looking for today.

In a way, GENBAND has become like Hitch, the movie in which Will Smith plays a character who helps men look and act in a way that allows them to get dates. Yes, GENBAND is making carriers sexy.

Fring will be the consumer offering and complement NUViA, the company's white-label unified communications-as-a-service offering for the business market.

Walsh added that GENBAND is taking SBC market share away from Acme Packet/Oracle and will continue to do so with a competitive feature-set and significantly lower maintenance costs.

But if this idea were so smart, why isn't everybody doing it? Why aren't all equipment vendors running out and buying OTT communications providers? The answer is that someone has to lead, and GENBAND is doing so.

The idea may not work as well as intended, but there are a lot of reasons why this move could be very successful. OTT has the potential to kill a carrier relationship as customers churn, but if the operator can come up with a way to bundle the best of OTT with better quality and reliability, it could keep more of its customers from defecting. Walsh mentioned users get knocked off Viber calls when a network call comes in. But carriers can keep this from happening if they control the OTT experience. Another plus is carriers can use Fring to enable enhanced services like an immigrant calling plan for a group of people in a new country who want to keep in touch with their family overseas. Picture a calling package in one country that comes bundled with a local number in another.

Walsh said that carriers need to reinvent themselves. He is right. And GENBAND aims to help them do that by providing real-time communications services to customers, even if they are of the OTT variety.

How the market reacts to this news will be interesting. Whether carriers decide they want to be sexy or not is their decision. But it seems this move by GENBAND could fast-track many carriers into solid OTT slayers. If this works as GENBAND plans, there will be a solid response (lots of copycatting) across the competitive communications infrastructure landscape, and it will be fascinating to see how this story plays out. **IT**

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By Barlow Keener

Why the FCC's 5gHz Move is So Important

The FCC is into spectrum sharing. The FCC's 5gHz rule making, opened on Feb. 20, 2013, is perhaps the most significant spectrum sharing proceeding yet because of the complexity of issues it is tackling.

That involves opening up more unlicensed spectrum but protecting shared – such as defense radar, satellite up links, civilian weather radar, and the new ITS safety-critical, transportation vehicle to vehicle program. The spectrum proposed to be shared is used by NASA, DoD, NOAA, and Homeland Security for radar and for uses such as drone communications. Moreover, 802.11ac is being finalized by IEEE for use in U-NII 5gHz bands.

Spectrum at 5gHz is used for Wi-Fi radios and a new IEEE 802.11ac standard, designed around 5gHz, is about to be released and should deliver what's being called gigabit Wi-Fi. There are now more than 150,000 cable company Wi-Fi hotspots in the U.S. and an estimated 2 billion Wi-Fi devices worldwide. Cisco, a major proponent of Wi-Fi (last year Cisco brought Wi-Fi mesh networking software startup Meraki for $1.2 billion cash), supports the improvement for the 5gHz rules as a way to satisfy what it says is the "exploding demand for… the 802.11 family of Wi-Fi standards."

One study determined that 300mHz of spectrum would create $100 billion in value through cost avoidance. FCC Commissioner Ajit Pai explained the significance of the proceeding and referred to the new use as Super Wi-Fi.

"What excites me," Pai said, "is that we are building on these past successes and using spectrum ideally suited for unlicensed use. The short-range propagation characteristics of 5gHz spectrum enable localized reuse with minimal risk of interference. The next-generation Wi-Fi standard, IEEE 802.11ac, will be finalized soon. Manufacturers are already building devices to work on 5gHz spectrum. And enhancing the contiguity and size of the 5gHz blocks contemplated in the item should allow wider channels for higher bandwidth transmissions. For example, a 160mHz-wide channel could deliver 1 gigabit of data per second. That's Super Wi-Fi."

> One study determined that 300mHz of spectrum would create $100 billion in value through cost avoidance.

In 1997, the FCC addressed spectrum sharing for unlicensed use in 5gHz spectrum bands creating 300mHz of unlicensed spectrum. The FCC worked at making 5gHz more efficient since 1998 using power limitations and radar sensing. If the radio senses radar pulses, it turns off. That's very simple but more efficient than not using unused spectrum. On June 11, 1998, the FCC initiated a new innovative spectrum program proposing to allocate 75mHz of 5gHz spectrum (the equivalent of 12 TV channels) for dedicated short range communications. DSRC (emphasizing the D for dedicated) was spectrum dedicated for the U.S. DOT's Intelligent Transportation Systems, which is important in lowering the number of fatalities on the road – currently 270 deaths per weekend. Vehicles using 5gHz will automatically know when another vehicle is headed toward impact.

There are currently four IEEE U-NII spectrum bands generally using 802.11a/h/j/n. The new NPRM proposes adding two more U-NII bands. Apple drove the FCC in 1997 in the direction of wireless networking for schools. The FCC first allocated three 5gHz bands for this unlicensed networking school-focused use and then added a fourth 5gHz band, the worldwide band, in 2003. Now, the FCC proposes adding a two new bands for a total of six bands.

The FCC hopes to solve the FAA radar interference issues, create more spectrum for broadband use from ineffectively managed 5gHz U-NII spectrum, and increase the amount 5gHz spectrum to match with bands allowed by other countries – creating opportunities for manufactures to sell lower priced devices.

A neutral database can be used to coordinate power levels between the radios without requiring spectrum sensing in the devices. The databases can tell radios within tightly defined geographies to turn on or off, or to change channels based on the database information of other radios operating in the same geographies and same channels. The databases would operate to give priority to higher power (1W) radios over lower power (50mW) radios but at the same time allow lower power radios to occupy the bandwidth that is unused in a local geography by a higher power radio. **IT**

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

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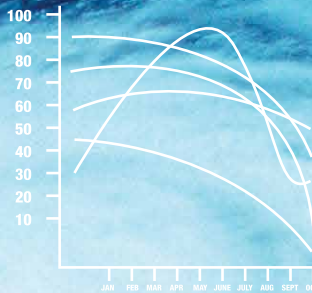
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S E E   T H E   B I G   P I C T U R E

By Hunter Newby

How Verizon's Buyout of Vodafone Relates to FirstNet

In all financial transactions involving a buyout there is a value ascribed to what is being purchased. That value is derived from many factors including, but not limited to, revenue, costs, margins and assets. This is fairly standard industry practice.

As the recent transaction involving Verizon buying out Vodafone's 45 percent of Verizon Wireless shows the valuation of Verizon Wireless was roughly $289 billion because Verizon is paying Vodafone $130 billion for the 45 percent.This value of Verizon Wireless was determined based on whatever metrics were ascribed to whatever elements of value they currently have. That's where this transaction gets very interesting.

There are two dimensions of this transaction that haven't received much, if any, coverage: the benefit of not having a foreign entity with an ownership interest in a major U.S. mobile operator necessarily

baked in to the value of national security and protecting that metadata, or was the price paid not a premium at all, but rather a steal?

To understand the true value of Verizon Wireless, it is imperative to understand what FirstNet has been created and funded to build, and what that potentially represents to Verizon Wireless.

From the MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, as described on the NTIA website:
(4) EXECUTION OF AUTHORITY.—In carrying out the duties and responsibilities of this subsection, the First Responder Network Authority may-
(A) obtain grants from and make contracts with individuals, private companies, and Federal, State, regional, and local agencies;
(B) hire or accept voluntary services of consultants, experts, advisory boards, and panels to aid the First Responder Network

> To understand the true value of Verizon Wireless, it is imperative to understand what FirstNet has been created and funded to build, and what that potentially represents to Verizon Wireless.

eliminates any rights and, or access that entity would have to the processes and actual mobile data that is being collected by certain agencies on everything that occurs over the mobile devices and network; and the value that the First Responder Network Authority (FirstNet) will bring to Verizon Wireless and then therefore Verizon.

The first point is more a matter of national security from the perspective of those in the seat of power and control. A Verizon executive recently even stated that collecting user data is a societal choice between privacy and security.

"There is another question that needs to be kept in the balance, which is a question of civil liberty and the rights of the individual citizen in the context of that broader set of protections that the government seeks to create in its society," said John Stratton, Verizon Enterprise Solutions president, and former COO Verizon Wireless.

"The laws are not set by Verizon, they are set by the governments in which we operate," he added. "I think it's important for us to recognize that we participate in debate, as citizens, but as a company I have obligations that I am going to follow."

What is interesting about these statements is the timing of the transaction relative to the disclosure that Verizon has been handing over metadata for calls on its systems on an ongoing and daily basis. The discussions between the two companies have been ongoing for some time, but perhaps there was some level of urgency on the part of Verizon to offer the 30 percent premium that it did. Was the premium

Authority in carrying out such duties and responsibilities;
(C) receive payment for use of— (i) network capacity licensed to the First Responder Network Authority; and (ii) network infrastructure constructed, owned, or operated by the First Responder Network Authority; and
(D) take such other actions as may be necessary to accomplish the purposes set forth in this subsection.

It is clear that FirstNet is not exclusively being designed and built for public safety and that the language in the Act clearly states that the independent authority is open to making contracts with private companies and receiving payments for capacity and infrastructure. So, what does that mean? Basically, it means that the infrastructure and wireless spectrum and backhaul capacity that is being funded by the federal government and built by FirstNet can and most likely will be used by Verizon Wireless. This will save Verizon Wireless from having to deploy its own capital to build the same and rather will allow the company to simply lease the turn-key capacity it needs and know what its margins will be and will realize them much sooner if not immediately upon deployment.

So, what is the value of Verizon Wireless if the government is going to fund its capital expenditures on a nationwide network rollout? The exact answer is presently unknown, but certainly it is a much higher valuation than $289 billion if capital expenditures for new infrastructure were baked in to that number as being funded by the company. **IT**

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

By Amit Daniel

From Business Protection to Business Growth
Why CSPs now see fraud management and revenue assurance as a platform for growth

Getting urgent requests from internal users is nothing new for revenue assurance and fraud management teams in communications and digital service providers. But the nature of these requests is changing and in a fundamental way. These teams are now receiving many new requests related to growing the business, not just protecting revenue streams. For example, marketers might want to correlate margins and revenues for specific customer segments with demographic information derived from the customer relationship management system. Finance executives might want to make a similar correlation, but in reverse, so they can include segment information about customers when making decisions about margins and risk prioritization.

This is a curious trend. I mean, why are financial and marketing specialists turning to revenue assurance and fraud management systems to identify growth opportunities when these companies generally already have a data warehouse designed to help them gather business intelligence?

It turns out there are two key reasons why the data warehouse is being bypassed: Marketers and financial executives are looking for both a fast/flexible response and better data. Being an IT-controlled platform, data warehouses are constrained by the IT department's priorities, workload, internal processes and the data sources that IT loads into the warehouse. By contrast, a revenue assurance/fraud management platform can be tuned to the needs of a small user group and is able to quickly harness new data sources.

Support for specific use cases
However, expanding the use of a revenue assurance/fraud management platform in this way requires careful planning. If you simply bolt on a generic business intelligence tool, business users then face the daunting task of figuring out what data sources, reports, dashboards, and key performance indicators to pull together.

A better approach is to simplify the analysis problem for business users by embedding intelligence into the platform. Ideally, the revenue assurance/fraud management platform should be enhanced with a new layer of software that supports specific use-case functionality. The beauty of layering is that the extensive extracting, loading, normalizing and enrichment of data required for revenue assurance/fraud management doesn't have to be repeated. It's ready to immediately serve up insights around profit and margin assurance to the CFO and around usage patterns and customer preferences to marketing specialists.

Going far beyond a general purpose business intelligence tool, the analytical layer should incorporate dashboards, reports and KPIs pre-built-in to support specific use cases, meaning the business user doesn't have to figure out what analysis and insights he or she needs.

Monitoring and growing LTE services
Let's consider how a cross-product intelligent layer can deliver value in the LTE service area. The first step is to monitor and remedy risks. The CFO should be alerted to problems related to margins and revenue risks, which must be closely monitored since exposure is typically high for a new service like LTE.

At the same time, the fraud management platform goes to work identifying customers who are taking unfair advantage of their price plans. Once the fraud management team finds users abusing their data plan, the operator can take steps to get those customers on to alternate price plans. Rather than cut service off or limit a customer's quality of service, the best remedy is often to offer the customer greater bandwidth if they agree to move on to a more suitable (and profitable) tariff.

Meanwhile, the revenue assurance team can analyze LTE revenue leakages and measure the profitability of specific price plans, sub services and third parties' costs and revenues. The system should flag which LTE services have low margins and conduct a thorough segment analysis to see how customers are consuming data traffic, monitoring over-the-top app usage, and verifying bill/ settlement processes.

Delivering greater value to marketing
As they seek to drive uptake of new services, marketers are also keen to tap the data gold mine in revenue assurance/ fraud management systems. Marketers are looking for easy-to-use analytical tools in a range of areas, including customer retention, the rollout of new tariffs and the sale of LTE/3G data plans. For example, marketers looking to drive uptake of LTE will want information on customers' ARPU, profitability, usage types and content, price plan, location, handset-type and other attributes. They also need statistical models showing which customer segments have already adopted LTE, so they can identify the next segment of customers to target. An LTE dashboard, for example, should enable marketers to view customers' usage patterns – how much data they consume per month, from which locations, what content types they use and how much money they are generating.

Ideally, the marketing analytical layer should also go one step further, calculating the next best offer/action for individual customers, including offers across shared data plans where usage is aggregated across family members. **IT**

Amit Daniel is executive vice president of marketing and business development at cVidya (www.cvidya.com).

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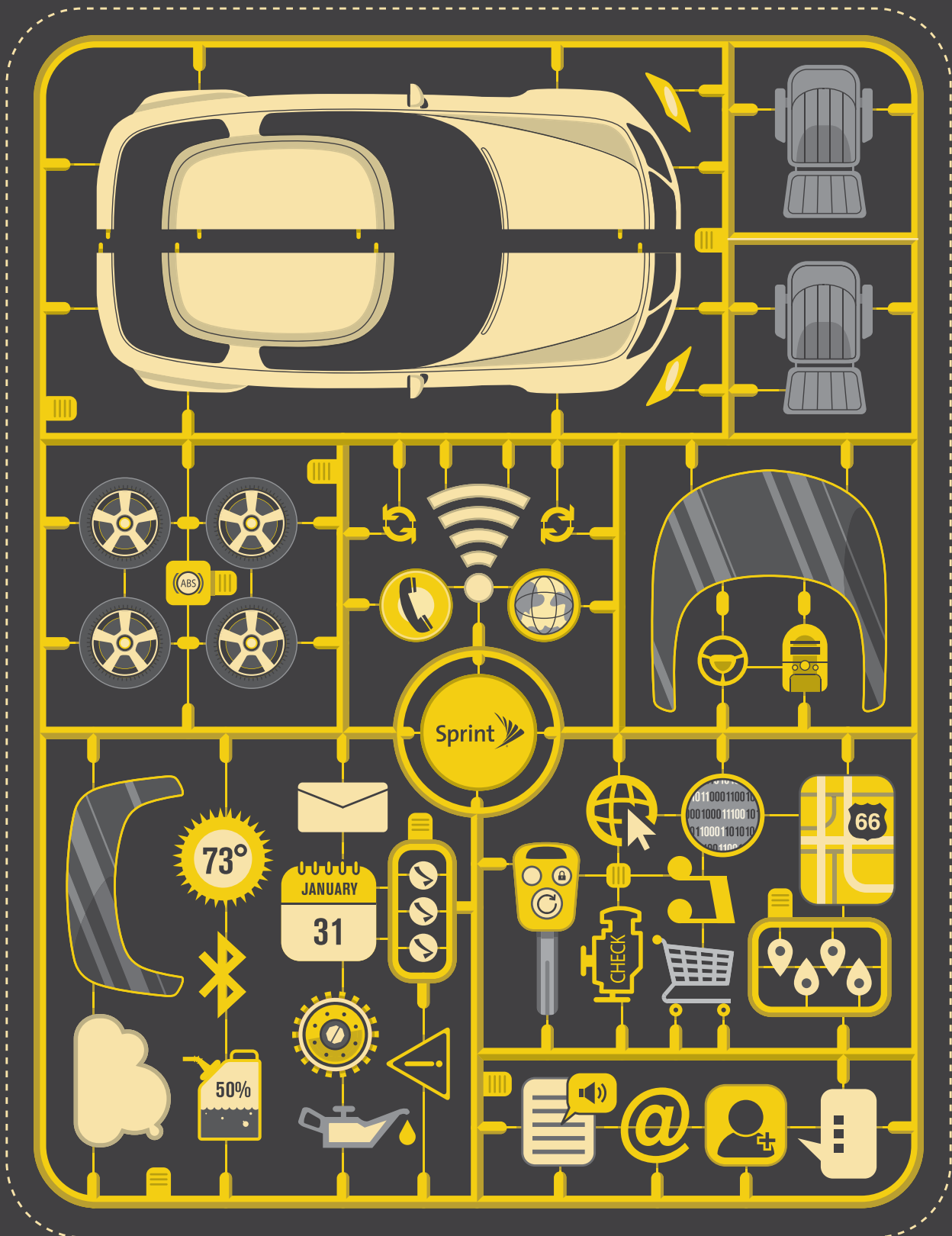
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By Jon Arnold

What Millennials Can Teach Us about Collaboration

Over the course of my recent columns here, I've been exploring the dynamics of technology personalization and how this impacts unified communications. Personalization means different things to different people, and my focus has mainly been on millennials. Vendors have a certain worldview of how UC should be deployed, as does IT, but getting those to line up with what end users think is supposed to happen will likely be a bigger challenge than expected.

To address that challenge, my position is that personalization has a lot to do with how effective UC will be once it gets rolled out across your organization. As noted previously, the underlying technology can certainly perform as advertised, and in a perfect world, IT would only need to be concerned with optimizing the network to support all the applications under the UC umbrella. Of course, this could easily consume all of IT's resources, but just getting the technology right will not ensure success with UC.

Moving past this, IT must accept that every end user will utilize UC in his or her own way, regardless of how many guidelines or best practices you put in place. This is part of what makes IP-based technologies a dual-edged sword. On one hand, the flexibility inherent in all things IP provides IT with powerful options to integrate UC with a wide range of applications that drive business value. Conversely, this also gives end users great flexibility in how they use UC, most of which is beyond IT's control. This means you have to place faith and trust in end users that they will use UC largely in its intended manner.

I've written previously of the need to view employees as equal partners in your UC implementation. You really can't force them to use it, yet IT's credibility rests on getting their buy-in. In this regard, you can provide lots of suggestions and training, but ultimately take-up will happen more on their terms than yours.

> Personalization has a lot to do with how effective UC will be once it gets rolled out across your organization.

This brings us to the role of personalization, with the main idea being that the more employees come to view UC as their UC – instead of your UC – the more effectively they will adopt it. As addressed earlier in this series, personalization can be both a driver and an inhibitor for collaboration, which is really the main behavior UC is trying to stimulate. Your view here will likely be highly subjective, and I've been maintaining that much of this is generational. Millennials and older employees (pre-Internet) have different views on many things, including work styles and their relationships with technology.

While one can be quick to dismiss millennials as being too over-stimulated to be effective team players, you should keep in mind that their perspectives have not yet factored much into how UC solutions are developed and deployed. There is no rulebook for what constitutes collaboration, and if your workplace is millennial-heavy, you may be imposing expectations that are not aligned with how your employees view collaboration. **I**T

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I hope you now see how the ideas of personalization and IP's flexibility start to intersect with UC. Instead of laying out a set of best practices for collaboration with UC, you should instead present it as a clean slate from which employees can pick and choose. Every situation calls for its own set of communications tools as well as work styles for team members. Millennials place a high value on personalization, but that doesn't mean it's just to serve their individual needs. That same desire can also be channeled into collaborative activities, but they may not quite synch up with what you had in mind. To illustrate, consider the following examples:

• Accessing UC applications almost entirely from mobile devices, even while working from their desk. This means your UC platform must have solid support for mobility and that the user interface be optimized for smaller screens and touch devices.

• Millennials will be inclined to use different sources and methods to find information needed for a project. Online search engines will play a key role, and they will likely have highly evolved skills that go well beyond what a casual search would generate. This may well result in superior results that take less time based on other approaches, and if a lot of this work is done on the go, then UC will work best if it can somehow integrate mobile search results with other workflows.

• Social media will also play a key role, especially for things like validating information sources and doing ad hoc testing of new ideas. Millennials will know how to connect with individuals and communities this way, enabling them to quickly assemble resources, crowdsource ideas and identify hard-to-find experts.

These are just a few ways that millennials will collaborate, and note how highly personalized each one is. This is probably not the norm for how collaboration typically gets done in your organization, and these approaches are probably not factored into the UC solutions you've been looking at. If these conditions reflect your current reality, is it any wonder why millennials may not see much utility for UC? If you don't provide the tools they are inclined to use, it's probably unfair to conclude they are poor team players or inept UC users.

I realize this analysis will not hold up in the mainstream, but I do believe it reflects how the workforce is evolving. If you have a lot of millennials in your midst, there may well be a disconnect between your expectations of UC and the results from your end users. In that event, you probably have a thing or two to learn from millennials about what collaboration means to them, and once you have that, you'll probably want to have a chat with your UC vendor. **IT**

Jon Arnold is principal of J Arnold & Associates, an independent telecom analyst and marketing consultancy.

By Steven Johnson

SIP Trunking Benefits: Minimize Business Interruption

Disaster recovery, or more properly avoidance of business interruption, has become a key element of network planning. Enterprises require always on services – there's no room for downtime when you have customers, or employees, depending on the network. This is especially true with voice applications that are mission-critical to any business.

SIP trunking enables the enterprise to use the strengths of the Internet and solid network planning to provide high reliability and an almost instantaneous recovery in the event of a disaster:

• Rerouting to another office – SIP trunk traffic can be rerouted to a secondary office to ensure that business continues to run smoothly even if one location goes down.

• Redundancy with multiple ITSPs – With an E-SBC, businesses can shift traffic to alternate service providers should the service from one go down.

• Redundancy with multiple PBXs – Similar to the previous comment, the enterprise can install multiple instances of the PBX. In the event that one of those does not respond, the E-SBC can automatically reroute the traffic to an alternate instance of the device.

• Redundant E-SBCs – Good practice dictates that there should be no single points of failure. Just as there may be multiple service providers and PBXs, good practice also recommends that the E-SBC be installed as a failover pair, where the second unit can automatically start processing calls if the first unit fails.

• Security – The architecture needed to implement SIP trunking should also incorporate security features to avoid business interruptions perpetrated by malicious attackers. E-SBCs can protect against denial-of-service attacks, which are a major source of business interruption, prevent theft of services which may cause serious financial harm to the business, and detect and prevent network intrusions.

Besides the cost and productivity benefits of SIP trunking, enterprises can also benefit from the inherent robustness of the Internet and gain advantages that support the business continuity objectives of the firm. **IT**

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

By Frank Yue

Is Mobile Security in Your Control?

Communications service providers are implementing mobile 4G LTE networks at an ever increasing pace. This means that subscribers are accessing data and services on the Internet and intranet more frequently and they are depending on mobile data access for their daily needs. Security is important as applications are delivered to provide access to sensitive content as well as to post content from the mobile subscribers.

Security in the mobile environment needs to be evaluated from different perspectives and applied appropriately. One can look at the security model in three different areas. First, there are consumers who are concerned about the security of their mobile devices and the personal data that they send over the network. Second, the enterprise is delivering intranet access to the individual subscribers or employees through BYOD services where VPN access is made available. They may also be providing mobile applications such as e-mail, chat, or file sharing that are connected to the corporate network. Last, there is the CSP that must understand the all-IP nature of the LTE network, how the security model differs from the older 3G and 3.5G mobile networks, and how to secure the infrastructure that transports all of this critical and sensitive data.

Consumers are leveraging the availability and high speeds on the 4G LTE networks, and smartphone adoption is increasing rapidly. According to one survey, subscribers on 4G LTE networks are consuming 23 times more data than subscribers on the older 3G and 3.5G networks. Much of the data being consumed is streaming video, but subscribers are also using the data network for mobile banking, location-based services such as hailing taxis, self-guided tours, and, of course, GPS navigation. It is critical that the mobile device, the applications, and their data be secured. Consumers must know that their personal data is secure for them to be comfortable using these services.

Many companies are also leveraging mobile services to extend the reach of the corporate environment. Access to company e-mail is the most common use, though enterprises are also looking to make CRM databases, internal applications, and other confidential and proprietary data available to the customer. These companies, in conjunction with the service provider, are responsible for making sure this data is delivered in a secure manner and only to the employees (and their devices) who have the appropriate privileges to access this information.

With the introduction of LTE networks, all communications in the mobile network are IP-based. This introduces new security concerns for the CSP. They need to be able to manage and protect the core network infrastructure within the evolved packet core to ensure the privacy and integrity of the data being utilized by the subscribers and companies that use their network. Control plane messaging such as Diameter and SIP become exposed in the new network architecture. DNS continues to be vulnerable. The speed and availability of these new networks along with the architectural changes make it easier for one to purposefully or accidentally attack the CSP network and compromise the data.

> All three parties – the subscriber, the enterprise, and especially the CSP – must be involved in the availability and delivery of the sensitive content.

It is important to take measures to protect the components within the mobile network infrastructure that one has control over. But, one would be short sighted to believe that securing any single perspective will ensure the protection of their data. Take care and secure the aspects of the network and application where you have control. Also, you must make sure that the other parties involved in the content storage, delivery, and presentation validate their security policies as they apply to your situations. All three parties – the subscriber, the enterprise, and especially the CSP – must be involved in the availability and delivery of the sensitive content. Until everyone works together to ensure that the entire mobile ecosystem is secure, there will always be potential for abuse. **IT**

Frank Yue is technical marketing manager with F5 Networks (www.f5networks.com).

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Traveling the Uncanny Valley

By Michael Stanford

As robots become more and more human-like, researchers have observed that there is a sudden dip in appeal, a feeling of revulsion, close to the most human-like end of the spectrum. They call this the uncanny valley, since a near perfect simulation can transition out the other side.

Your effortless world-grasping pattern recognition capabilities instantly lock on to the most subtle dissonances. Conversely, one of the many breakthroughs in the iPhone when it first came out was the physics-inspired behavior of the screen transitions, with inertia, friction and elasticity. This subtle innovation helped to make iPhone comfortable at a subconscious level. It is telling that while iOS 7 has abandoned many other skeuomorphic features of its predecessors, the physics-based screen behavior remains.

Siri, on the other hand, demonstrates that speech recognition (ASR) and speech synthesis (TTS) remain obstinately on the other side of the uncanny valley. There are many successful implementations of ASR and TTS, but they are in narrowly constrained applications. What makes Siri particularly infuriating is the general-purpose claims that its behavior implies. When you have spent 10 minutes struggling to get Siri to dial a person in your contact list, you tend to be less impressed by its ability to respond to questions like: How good are you at speech recognition, Siri?

Listening to a real person talking, it is easy to think of the cadences and emphases that differentiate between question and command, or sincerity and irony as being analogous to the accelerations and inertias of physical objects, and to surmise that there must be

some physics of expression that could be applied to them the way we apply the physics of rocks and springs to on-screen elements. As with so many intuitive judgments, this turns out to be monumentally wrong.

I am confident that one day a computer will be able to speak and listen as well as a person can, but it will not be through a small set of yet-to-be-discovered physics-like rules. It will be when the computer can reliably detect meta-communications like irony or confidence – a task that challenges the most verbally adept of us. **IT**

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

The Dog and Pony Show Is Still Critical

By Max Schroeder

In the late-19th and early-20th centuries Dog and Pony Shows were small circuses that traveled mostly to rural areas. Eventually, the expression evolved in the 20th Century as a generic term for a sales process/presentation.

Prior to laptops and PowerPoint presentations, physical slides were used at customer sites. The preparation time and cost was considerable, so the sales team made sure every issue was addressed and handled correctly. Now, the Internet allows us to make remote demos or presentations on the fly almost instantly, but is this development resulting in better sales outcomes?

Recently I observed a sales vice president driving home her message that the customer still merits the full dog and pony show. She was simply emphasizing that, to guarantee success, sales procedures must still be followed meticulously. The cloud

may allow a sale to move faster, but it does not invalidate any steps in the process.

Basically, today's sales process consists of making/handling prospect calls/chats; initial session to qualify the prospect; product introduction and information collection (Q&A); and closing presentation. Some resellers perform all four steps remotely. This method can be very effective but only if the sales process is followed rigorously.

The Internet and websites make step one a lot easier. A prospect can simply call and say: I looked at your site, and you have the solution I need, how much is it? This appears straightforward but only if the solution is quite simple. Many prospects do not fully understand the technologies involved, for example, in a converged messaging solution, nor should they. That is the job of the sales professional. Therefore, you cannot skip or

rush through steps two and three. You must fully qualify the opportunity. You have to drill down on the questions and make sure the prospect really understands the solutions being offered. The alternative could result in a sale but with a very unhappy customer and a lot of support calls.

Some customers, particularly those that previously contacted a competitor, will try to rush the process and get impatient during the Q&A. However, from my personal experience, their attitude changes dramatically once you uncover some issues (90 percent of the time) and they realize your competitors did not take the time to ask the right questions. **IT**

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

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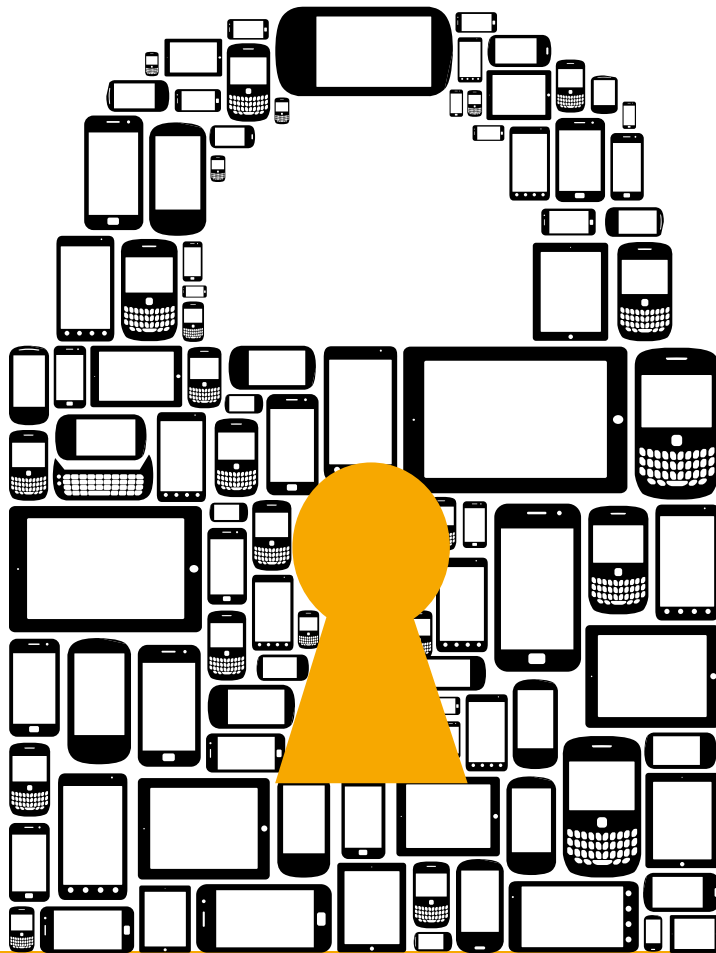
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By Ken Osowski

Monetizing Content Intelligence

All different types of web-based content are viewed by subscribers on fixed and mobile broadband networks. This diversity of content is, in fact, the allure of the Internet. Internet content can be readily sorted using pre-defined categories like gaming, music, news, streaming video, advertising, chat, photography, malware, phishing or adult content just to name a few. By adding content categorization to a DPI platform, new innovative services can be created and a new lens can be used to analyze subscriber network traffic.

In combination with DPI's primary mission of identifying a network subscriber's data usage context (in terms of identity, service plan, location, device, and application), content categorization can also be performed in real time. For example, the streaming video category would identify network usage by Netflix, Hulu, and YouTube users. Depending on the DPI technology used, content categorization can

content from the specified categories could only be accessed for a specific time of day or day of the week.

* Content Filtering Service – This helps businesses, government agencies, and educational institutions control content access during business hours.

* Content Limits Service – This is a value-based, subscriber specific service plan that creates category-specific data usage limits by time or day.

* Phishing and Malware Protection Service – This stops access to sites that are a security threat by informing the subscriber in real time using a pop-up captive portal. This service can take some of the security burden off network subscribers and IT departments.

* Government regulations that restrict access to specific content, for example, to shield children from violent or pornographic im-

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Content intelligence can be used to drive new subscriber services and create new business models.

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be performed even if the content is accessed using web security protocols such as SPDY or SSL.

The mechanism for categorizing content uses both industry-supplied information about content (called metadata) that is available from third-party sources or metadata that is internally generated by service providers themselves. The external sources classify tens of millions of URLs that point to existing content that is assigned to approximately 100 pre-defined categories. This information is accessed in real time while DPI traffic analysis is under way, and is used to categorize the traffic flows so that content category statistics can be generated.

From a service provider perspective, content intelligence can be used to drive new subscriber services and create new business models that can generate significant revenue streams in conjunction with policy enforcement. While existing purpose-built content categorization solutions provide some capabilities, these solutions cannot scale to provide subscriber-centric, revenue generating services in broadband service provider networks. Examples of services that can be offered by service providers to monetize content intelligence include:

* Parental Control Service offered directly to consumers – This identifies sites containing objectionable material so they can be blacklisted for a specific subscriber. This would help the primary account holder of a family plan to block access to a content category all the time or for specific time periods. Service providers could allow the primary account holder to select from a list of categories on a service provisioning web portal so that

agery – This enables all organizations and businesses to comply with strict government rules and regulations on content access within the context of the base data service plan.

* Zero-rated Content Service – This gives network subscribers unlimited access to specific content categories as part of base data service plan offerings.

* Video Streaming Priority Service – This offers subscribers the ability to get better quality video streaming independent of the bandwidth offered by their base data service plan.

Many of these services can dovetail well with businesses and other organizations pursuing a BYOD policy and restrict content access while providing security.
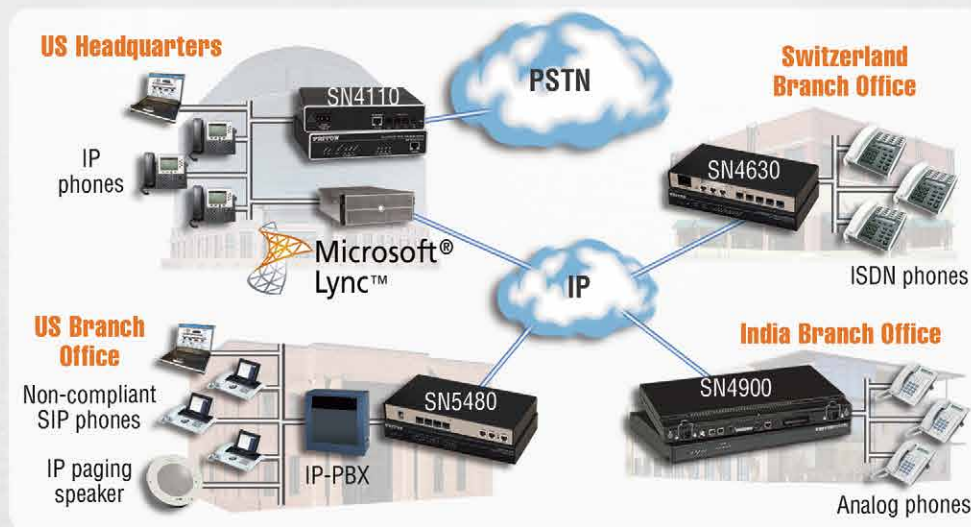
Another significant monetization opportunity for content intelligence is through the use of content analytics. By analyzing content usage of their network subscribers, service providers can identify usage trends at a macro level, helping them to determine how to spend on network enhancements and expansion. Content analytics also contributes to profiling content usage so that service providers can create and offer services that address emerging customer needs. When supported by a DPI platform, content intelligence can clearly be monetized as part of cost saving programs or brand-new, value-based subscriber services. **IT**

Ken Osowski is director of solutions marketing at Procera Networks (www.proceranetworks.com).

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By Jim Machi

LTE: The Mobile Darling's Secret Sauce

Users are snapping up features via the mobile network du jour, LTE, quicker than hotcakes. Global deployments of commercial LTE networks are ramping up – there are more than 200 right now – and subscribers are signing on in huge numbers. Rapid growth always carries consequences, but some of the most significant repercussions are those that users barely notice, even though they are directly affected by them. Because of its speed, LTE delivers an attractive mobile on-ramp to the Internet, which is changing the way smartphone and tablet owners use their devices.

Just in terms of video, viewing consumption represents approximately 50 percent of mobile data traffic, and it's expected to climb to two-thirds of all mobile traffic in a few years while it grows overall by 66 percent per year. This is possible mainly because of the partnership that comes from smartphone usage coupled with the increase in network capacity from both Wi-Fi and LTE networks.

At the same time, we're seeing Wi-Fi hotspot usage drop among LTE users since the speed experience on LTE and Wi-Fi is similar. We'll see if this trend continues once subscribers go over their data cap or the LTE networks start to get clogged – which they certainly will when the video projections above come true.

The recipe for mobile user happiness

The proliferation of LTE networks is making life pretty sweet – and fast – for mobile users right now. Consumers are spending more time watching videos from their smartphones and tablets, all the while never knowing the complex signaling protocols that are giving them a seamless experience, regardless of whether they're roaming in and out of 3G and 4G territory. LTE's signaling protocol, Diameter, makes the interactions with other networks possible, and it might be the most important enabler mobile consumers never heard of.

This leads to some less obvious impacts as well, such as what has to happen behind the scenes to ensure everything goes smoothly. Users are relying more and more on mobile devices to tune in to You-Tube, Netflix, Hulu and other bandwidth-hungry video sources. That is a big plus for anyone looking to maximize their time on the treadmill, in the waiting room or on the train, but this surge in video consumption could all backfire at some point.

For example, if a mobile subscriber were to head to her local Starbucks, she might know at first glance that the line is going to make her wait for an iced frappuccino a long one. While she waits, she might switch to the café's Wi-Fi network to catch up on the end of that "Orange is the New Black" episode on Netflix or to hold a short conversation on Skype. A lot has to happen behind the scenes for that switch to occur, and it happens in less time than it takes the barista to ring up her order.

The speed of LTE is altering the way consumers use their mobile devices. This can be good news for operators, as their customers are relying on smartphones and tablets (and networks) more and more. However, to make sure that all of this change doesn't slow down the LTE party, service providers need to plan their network handoffs to be seamless and prioritize optimization technologies alongside the usage growth expected to accompany LTE speeds.

Secret ingredients for network success

People are reportedly watching 30 percent more video on tablets, therefore more tablets, more smartphones and better networks yield more, more, more and yet even more. This could develop into the kind of slowness we haven't seen since the introduction of the iPhone on 3G networks. That's why we continue to see offloading to Wi-Fi. That's also why there are network optimization technologies such as compression and caching, because many videos don't make it to the end, so why clog the network with something that won't even be watched?

The signaling protocol for Wi-Fi networks is Radius. To switch from Diameter to Radius, there needs to be an interworking function that handles user activity, billing and the handoff. The same kind of scenario has to happen when users roam from LTE to 3G, which is still a growing network with which operators will have to work for a long, long time. The switch from a Diameter-based network to an SS7-based network needs to occur seamlessly. This is where a Diameter interworking function comes in to make sure this occurs without messing up the user experience.

LTE is also bringing HD voice more to the fore. This is the voice codec that makes it sound like you are in the same room with the person to whom you're speaking. Believe me, I've talked using these codecs, and the quality is impressive. You'll need an HD voice-capable phone (you may even have one now and not know it) but once they are standard, you'll hear the difference.

LTE is also likely to contribute to the success of WebRTC. Because LTE is a mobile on-ramp to the Internet, people will be using their mobile devices to access the Internet more and more. And when they do that, they only need to click on a URL to make a call, and this will certainly contribute to WebRTC voice and video calls taking off.

Which brings up another important behind-the-scenes point. Just like Diameter interworking for signaling interactions, there will need to be media transcoding for media interactions. If you make an HD voice or WebRTC phone call and it goes to a non-LTE network or WebRTC endpoint, then you'll need media transcoding to make sure the phone or video call goes through.

For mobile users, this activity makes up the invisible mixing behind their mobile menus for a seamless experience. Their primary concerns are that their calls, Internet usage and video downloads will work, regardless of where they are or how they move between networks. Service providers have the highest order to fill to ensure there aren't any flies in the soup along the way. **IT**

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

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Phybridge Switches Reach Out to Simplify VoIP Deployment

Optimizing the local area network for voice and data convergence is a critical starting point for any customer looking to migrate to IP telephony and unified communications. Until the Phybridge switch innovation was introduced, common practice was to rip and replace the existing data LAN to support the IP phone and UC applications. For some customers these requirements are too great an operational and financial barrier to overcome. That's exactly what Phybridge's line of Power over Long Reach Ethernet (PoLRE) switches does, delivering Ethernet and Power over Ethernet over a single pair of wires with distances up to an impressive 1,200 feet. That's four times the maximum distance offered by traditional Ethernet, which is limited to just 300 feet. Using your existing voice wiring infrastructure you can deploy the latest VoIP phone systems and IP phone endpoints completely separate from your existing LAN infrastructure, moving the convergence point from every desktop with the IP phone acting as a switch for the data device to a single point in the central closet.

Phybridge President Oliver Emmanuel explained to TMC Labs, "This is not intended to displace the data switch fabric. It's there to complement and optimize it for voice and data convergence."

He added that the company's ideal customers are those that have a single data drop and a single voice drop at each workstation and want to move to IP telephony. He explained that the product is not for smaller businesses with two data drops. In those scenarios, he admitted, it is cheaper to just have separate PoE switches than going with Phybridge's solutions. If the customer has one data drop and a voice drop and wants a robust backbone supporting its IP phones, then the Phybridge PoLRE switches are a great fit. The larger the customer, the more complex the LAN and the greater the requirements. Often what gets forgotten are IDF closet requirements given the introduction of PoE switches. Considerations include power availability, backup power requirements and cooling for all the IDF closets. With the Phybridge switches being consolidated in the MDF, these requirements go away. In addition, you can use Phybridge's network, which leverages ubiquitous phone wiring, as a backup network should the primary LAN infrastructure fail, due to hardware failure, or even a denial of service attack. More on that later.

It's important to note that CAT5 Ethernet switches max out at 300 feet, while Phybridge is rated to go as far as 1,200 feet over a single pair delivering both Ethernet and PoE. Phybridge told TMC Labs that it tested all 48 ports at 1,200 feet delivering Ethernet and PoE with no issues. Phybridge also said it has some customers running at 1,800 feet, but it's unsupported. Phybridge mentioned it has lots of universities using it products, especially since it has several buildings and can consolidate the switching fabric.

PoLRE vs. Uniphyer
Before PoLRE, Phybridge sold a product line called Uniphyer, which uses ADSL2+ technology. With the newer PoLRE, Phybridge was the first to combine Power with Long Reach Ethernet. The Uniphyer line can reach up to 5km (2 miles) distance, but the drawback is that it requires local power to the adapter and phone beyond 1,200 feet. It has asymmetric bandwidth with up to 24mbps download speeds and 1.5mbps upload speeds. The PoLRE line has a smaller distance range, but provides power (10W/port) and has symmetrical 10mbps speed. Both have their place in the market and the company will continue to sell both, but Phybridge told TMC Labs it believes the PoLRE Line will become the dominant choice of customers due to the power and symmetric bandwidth advantages.

TMC Labs took two of Phybridge's products for a test drive, including the PoLRE LPC 8 Port switch designed for SMBs, and the larger scale PoLRE PL-048 which has two RJ21 Amphenol ports (24 ports each) allowing for up to 48 devices to be connected. It also has a third model, the PL-024, which as its name suggests, has a single RJ21 Amphenol port for 24 ports of network connectivity.

Both products can guarantee the quality of service for all of the VoIP endpoints, primarily because they are based on a point-to-point topology. Packets travel in order, on time, and without contention. Phybridge told TMC Labs the company had one customer using a ShoreTel phone system and it experienced a denial of service attack, which took down the data network for about two days. Because the ShoreTel phone system was on Phybridge on a separate network from the primary LAN infrastructure, voice was unaffected. This in itself makes the product a no-brainer for certain mission-critical verticals like health care, financial services, law offices, and other sectors that cannot afford to have any phone outages.

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In unpacking the smaller unmanaged PoLRE LPC Switch, we saw it came with two PhyLink adapters, which are small inline adapters that connect the phone wire on one end and an Ethernet cable on the other, providing up to 10W of PoE power to IEEE 802.3af-compliant devices. After connecting an Ethernet cable to Uplink Port 1 on the device to join it to our LAN, we connected a standard RJ11 phone cable to port 1 of the PoLRE LPC Switch, and the other end of the phone cable to the PhyLink adapter. Next, we connected the other end of the Ethernet cable to an IP phone and the IP phone's LCD lit up and the phone booted. We made a test call from the IP phone and, as expected, it sounded flawless.

Next, we tried out the larger PoLRE PL-048, which features redundant hot-swappable power supplies and management capabilities. You can use either AC or DC power, but one nice feature if using DC power is you can easily daisy-chain the power using the input and output DC ports. Up to 4 PoLRE Switch units can be daisy-chained for Powershare and load balancing. If a power supply fails on any unit in the ring, the others are able to share the load, and the affected unit continues to operate normally. You can then replace the failed hot-swappable power supply with no downtime.

We connected the PL-048 to our LAN and then hooked up an Amphenol cable to a punchdown block, which was terminated to some ports around the office. It supports a maximum of two uplinks, each 1gbps (full duplex), using either two mini-GBIC ports or two RJ45 ports. We used the RJ45 uplink ports to attach to our LAN. Next, we did the same thing as before and connected Phylink adapters to a phone wire and an Ethernet cable that terminated to a PoE IP phone. Once again the phones booted and were able to successfully make calls.

Management Interfaces include both in-band and out-of-band management via the dedicated Mgmt port. It also has a serial console port if you want to go old-school. The web GUI is another innovation designed to simplify the configuration, management and troubleshooting of a Phybridge backbone. It is an intuitive offering that is easy to learn yet
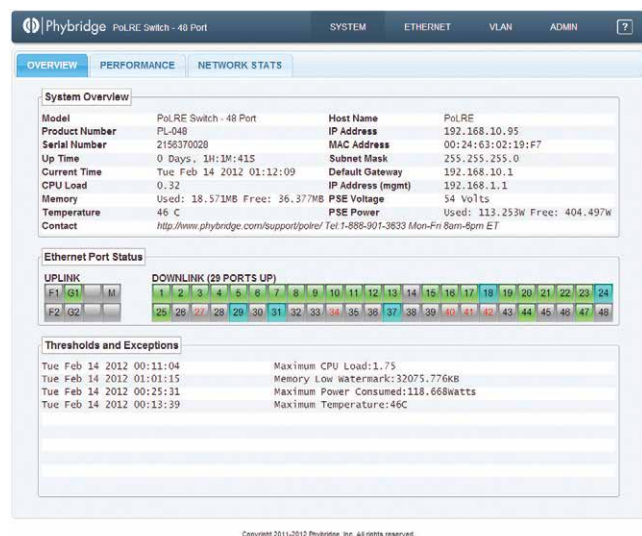
robust in its capabilities. There is no other switch GUI interface with this level of simplicity. First we checked out the web interface via the Mgmt port. We could view important stats such as status of each Ethernet port, CPU load, memory utilization, temperature, voltage, and the current amount of power being consumed by Power over Ethernet devices. Unlike many other switch GUIs, all this critical information is being updated dynamically without needing to hit the refresh button (Figures 1 & 2). In a single snapshot you can easily determine the status of all ports. Grey means inactive, blue means ready for IEEE compliant device and green means a device is connected to the port. Hover over the port and you get more intelligence on the port.

Figure 2

The web interface also displays any RX/TX errors individually by port (Figure 3), so you can easily see any troublesome ports. The PL-024/048 also lets you easily configure multiple VLANs and assign ports to each VLAN. From the Web UI you can also upgrade the firmware. Further, you can remotely manage the power capabilities – turn off or recycle ports. This comes in handy if a phone is acting up and an administrator needs to reboot it without user intervention. You can also lock down a port so only a single device will get connectivity based on the MAC address; this is handy for those looking for a highly secure platform. See Figure 4.

In addition, you can export and import the configuration for backup and migration purposes. Also in the web interface under the Admin section (Figure 5) is the ability to stop or start services as well as set them to automatically start at bootup.

For instance, you can enable the telnet service, which gives you full telnet access to the Linux kernel. We were able to login and navigate the Linux operating system and issue Linux commands. We also enabled NTP and added one of our NTP servers to get the correct date and time configured

Figure 1

Cover Story

Figure 3

Figure 5

on the device. We were able to configure logging, and even use the web-based CLI / terminal screen to issue commands. You can type commands manually or click on the web form field to see a drop-down list of commands, which you can then select. For troubleshooting, the unit has some nice features, including remote log server capabilities, SNMP, and web-based access to the log. See Figure 6.

viously, using Phybridge as your primary LAN is not the intended purpose of this device, but it's nice to know you have a backup network solution if the primary network switches fail.

Cost Savings

TMC Labs knew the Phybridge solutions could cut down on the network switching and IDF closet infrastructure, and we were curious if Phybridge had any interesting case studies demonstrating cost savings. We learned about TransUnion Credit in Chicago, which has 1,400 users and an initial budget of $1.8 million. With Phybridge it came down to $300,000, saving them $1.5 million. The company fast tracked the deployment by six months and completed

Figure 4

Bandwidth Test

Phybridge claims 10mbps switched Ethernet performance – so each port should have dedicated 10mbps bandwidth. We were curious how the bandwidth would perform, so for our next test we copied a large file across the network and were getting 1MB/s or 8mbps. For comparison, we copied this same file over our 1000mbps gigabit switches and achieved 60MB/s or 480mbps. Ob-

Figure 6

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the 1,400 user migration in a single weekend. The obvious savings is in cabling, but even bigger savings come from eliminating the need for IDF closet(s) on each floor plus additional network switching equipment due to distance limitations of Ethernet.

Phybridge's solution has four times the distance reach of Ethernet, thereby eliminating the need for IDF closets with additional networking equipment. TransUnion had 20 IDF closets, two on each floor (10 floors total) that required UPSs, PoE switches to power the IP phones, as well as power and cooling considerations. Add in professional services to install the equipment and the costs quickly add up. With Phybridge's solution, it resides in the MDF where your legacy phone system equipment and cooling already lives, so it eliminates the complexity and costs of getting that network change completed. Further, with Phybridge, there are no worries about whether the LAN infrastructure is VoIP ready, and you don't have to deal with the complexities of setting up VLAN and QoS settings.

While there's nothing magical or earth-shattering about our test VoIP calls, it's kind of interesting to think that we were making an IP phone call over just a single pair of wires. It's been ingrained in our minds that we must rip and replace our entire LAN to gain the benefits of IP telephony and unified communications. So to think the existing phone wires can support data and indeed VoIP is a bit disconcerting. TMC Labs can envision the IT decision maker thinking, "Wait, you mean to tell me we can easily migrate to IP telephony leveraging our existing voice infrastructure without network or business disruption?" IT decision makers are accustomed to dealing with network complexity, so the simplicity of a Phybridge backbone supporting IP phones complimenting and extending the data LAN may seem foreign. Phybridge eliminates many of the LAN barriers associated with IP telephony adoption in a simple yet effective manner by leveraging an existing, proven and reliable voice infrastructure. Add in the fact that it also lets you consolidate your switching network equipment, backup power, and cooling, and Phybridge's solutions are very cost-effective.

Roadmap & Conclusion

One cool product in the company's roadmap (one or two years down the road) is a network Y-adapter, which the company has a patent on. It has a RJ11 to two RJ45 ports – one for the Phybridge network and the other for the traditional LAN infrastructure. The adapter would sense the health of the LAN, and if it goes down it will transfer the data on the fly to the Phybridge network and vice-versa. Now you have a true redundant voice and data network using a simple Y-adapter.

Also on the roadmap is 100MB/s and potentially 250MB/s bandwidth – all over a single pair, which would really make things even more interesting.

Overall, TMC Labs is very impressed with the ease of use of the PoLRE PL-024/048's webGUI, and the plug-and-play nature of both the PoLRE LPC 8 and the PoLRE PL-048. Companies looking to have PoE IP phones and other PoE devices have a viable and reliable solution in the Phybridge PoLRE product line, and TMC Labs wouldn't hesitate to recommend it.   **IT**

Tom Keating heads up TMC Labs and is vice president and CTO of Technology Marketing Corp. (www.tmcnet.com).

Switches that eliminate network barriers and enable businesses to migrate to IP telephony and optimize their LAN for convergence
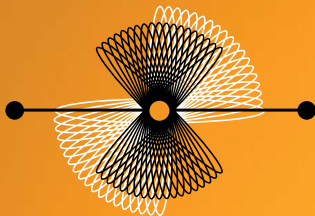
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By Randy Simmons

Fax: Keeping up with Change
Solutions for Resellers and Providers

Fax has changed, not gone away. Businesses still communicate with fax documents just as much as they have in the past. What has rapidly changed, though, is how faxes are sent. Business users do not receive paper faxes anymore; instead they get a PDF document in their e-mail inbox. Fax machines are now connected up to VoIP-based ATA's, VoIP systems and service providers, versus previously using dedicated analog phone lines.

Faxing to the cloud - this is what everyone wants. It, however, must be a complete solution and most importantly be 100 percent reliable.

Just Make It All Work
In the VoIP space, service providers can often have a hard time keeping up with their business customers that require core fax functionality. Their primary focus is on offering VoIP solutions and making sure they offer their customers the best service at the best price. Fax often times causes customers grief when they migrate their fax machine to VoIP with a simple ATA device. Providers also need to offer basic virtual fax service to be able to complete and retain business clients of all types.

Businesses simply want and need two things with fax today:
1. virtual fax accounts for all of their users, and
2. the ability to make their fax machines work reliably.

Offering virtual fax service is not difficult due to the countless options out there today for both VoIP providers and end businesses. What often times becomes more of a challenge is making the business' fax machine work when connected to the Internet provider. Enabling service providers to offer both of these solutions together would be the ideal set up.

The Challenge
Reliability is the challenge that most providers face. Most VoIP-based ATAs use either T.38 or G.711, and these connection protocols don't handle typical Internet burst packet loss issues well, resulting in a lot more fax failures, especially with longer faxes.

Resellers and providers offering virtual fax to their customer base can help significantly with reliability issues. This is especially true with inbound faxes, as the faxes are not received directly inside the customer's business premises by a VoIP connection over the Internet but rather received up in the cloud then transported to the user or business. This not only offers the reliability they expect, it also expands the features for their fax solution.

Businesses, however, still require their fax machine. Sending paper-based documents is still core to almost all business communications, and using a fax machine or MFP is still the easiest way to scan documents and send them.

As soon as businesses give up the often-costly dedicated phone line for cost savings associated with VoIP, they often times lose reliability.

Moving to HTTPS
Making the fax machine work reliably in the cost effective realm of over the Internet VoIP connections can be achieved with using HTTPS-based fax connections for the business.

FaxSIPit's Fax Service uses the HTTPS Fax protocol for connecting fax machines and MFPs instead of SIP T.38 or G.711.
The core reasons for using HTTPS are:
* HTTP avoids burst packet loss issues on the open Internet that can affect SIP T.38 submitted faxes;
* it adds a layer of security with HTTPS, which is needed for a lot of business and applications such as HIPPA and SOX;
* it minimizes any deployment issues that might be needed on the businesses firewall to allow SIP T.38 to pass;
* it reliably uses satellite and cellular data connections for faxing including internal Wi-Fi links in businesses; and
* it moves control of fax protocols from disperse and unmanaged ATAs to a central provider that is focused on fax.

It's All About Reliability and Security
A fax solution must work all the time, not just some of the time. FaxSIPit has built its backend telephony network and connections by focusing on one aspect: reliability. If it doesn't work – and work the first time – providers are not offering their customers the best solution possible.

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The Phybridge PoLRE (Power over Long Reach Ethernet) switches were designed to optimize and simplify an organization's converged local area network (LAN) by delivering Ethernet and Power over a single pair of wire with 4 times the reach of traditional data switches. Organizations are transforming their proven-reliable existing voice infrastructure into an IP path with power that is ideal for IP Telephony while optimizing the LAN for voice and data convergence. By moving the convergence point from every desktop to a single point in the central closet, you gain all the benefits of an optimized converged LAN without any business compromises.

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4. Eliminate operational and financial risk by leveraging an existing proven-reliable infrastructure designed for voice, versus the cost and disruption of a rip-and-replace strategy.
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6. Lower total cost of ownership.
7. Future-proofing your network without having to replace IP phones every time you need to increase bandwidth for users' data requirements.

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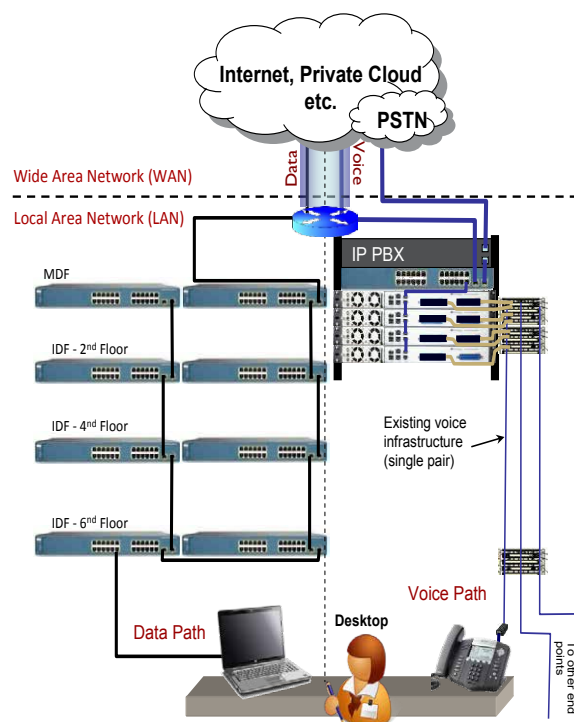
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Critical fax applications and regulatory compliance needs in the health care space require that fax solution interconnects are secure. FaxSIPit has made sure that resellers and providers can offer not just reliability, but also security that has not been easily possible with cost-effective over the Internet connections for fax machines.

AudioCodes HTTPS Fax ATA

- AudioCodes hardware for secure HTTPS based Fax Machine connections.
- HTTPS-based fax communication for truly reliable over the Internet connections. Both from the customer's premises to the provider's network and from the provider to FaxSIPit's cloud-based telephony.
- Secure connections for HIPPA and other compliance regulations.

The AudioCodes HTTPS Fax ATA is an enhanced version of the MP-20X series of analog telephone adapters that is a cost-effective and advanced fax product that connects fax machines with analog lines and multi-function printers to cloud-based fax solutions and premises-based fax servers using HTTPS.

Utilizing AudioCodes' new real-time HTTPS fax architecture, and gaining from its accumulated experience in providing IP telephony solutions, the HTTPS Fax ATA combines superior fax reliability, security, and cutting-edge features for end users and service providers alike.

By preserving the easy and familiar experience of the fax machine, users can easily transition to VoIP-based faxing no matter what type of connection is used: Wi-Fi, satellite and cellular data connections.
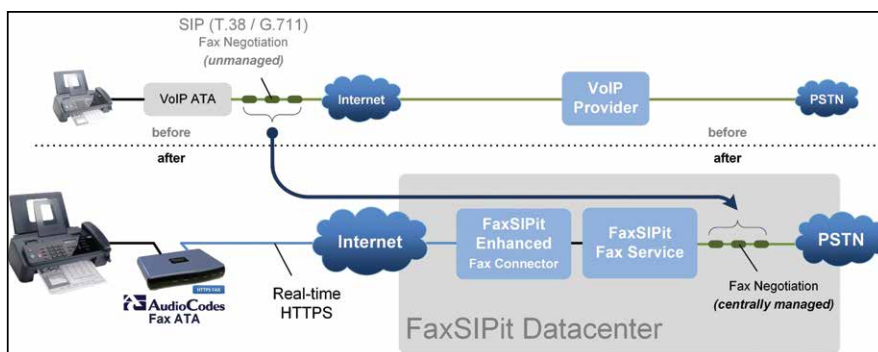
A Complete and Easy Solution
Providers want to focus on their core service offerings. Getting an easy to deploy and complete fax service solution that enables them to offer both virtual fax services and truly reliable fax machine connections is critical. Building up their own solution is often very time consuming and costly. Moving to offer services quickly and not compromising quality or features is what providers and resellers can get. **IT**

Randy Simmons is vice president of sales at FaxSIPit (rsimmons@ faxsipit.com, 866.374.6495).

Benefits for Resellers and Providers

FaxSIPit enables VoIP providers and resellers to offer reliable fax services. Using FaxSIPit's dedicated and fax tuned real-time telephony network, VoIP providers, agents and resellers can offer their customer base the best possible fax solution.

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Getting started is easy and enables:
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- hassle-free and quick deployments;
- white label options to preserve provider presence; and
- number porting.

White Label Solutions
Providers and resellers can easily brand services with their own presence. The FaxSIPit deployment team can work with you to merge your new services into your offerings reflecting the same presence and contact points.

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Dell Details His Plans to Reinvent the Company

Fresh off winning the battle to take his namesake company private, Michael Dell gave the opening keynote at the recent Oracle OpenWorld.

"The rumors are true," Dell's founder, chairman and CEO, who is doing a $25 billion buyout of the company along with equity firm Silver Lake Partners, told the audience in San Francisco. "There was a shareholder vote, and we're taking the company private."

Why take the company private? For the benefit of Dell customers, he said.

He touched on Dell's heritage in PCs, which he noted drove productivity and technology deeper into businesses, enabling collaboration and information sharing across the globe, and more efficient movement of goods and services. Today, he said, we see the same kind of opportunity with cloud, social, mobile, and big data, all of which needs to be secured.

Dell has been working to enable all that, he said, and over the past five years invested more than $13 billion to get the job done. In the last year alone, he said, Dell has spent $5 billion to build solutions to position it as a leader in the enterprise.

Its success won't be measured just in the short term but also by the longer-term future, he said. Of course, being a private company will enable Dell to have more flexibility in pursuing a long-term strategy because it won't be beholden to Wall Street.

The Dell strategy, through which the company hopes to transform itself from a hardware entity to a services business, is built around the following imperatives: transform, connect, inform and protect.

Transform is about modernizing the technology environment, be that modernizing applications, moving off a mainframe, or onto a cloud, as a few examples. Dell is uniquely positioned to help companies transform on these fronts because it is unencumbered by legacy solutions; it wants to outfit customers with the most agile and affordable solutions.

At this point in the presentation, Dell mentioned that the company is No. 1 in x86 server market share in Asia, North America, and worldwide. Of course, industry-standard x86 servers are expected to be the platforms on which network elements will run in the new networks functions virtualization and software-defined networking realms.

"We're seeing the rise of the software-defined everything," said Dell. "And that's causing the server to be the center of everything."

He went on to talk about Flash memory innovations and other tiers of memory to optimize performance, and said that Dell's VRTX server is like a private cloud in a box and is super easy to manage. You can manage a thousand VRTX devices in one environment, he said, and in a compact footprint. Dell added that VRTX is way ahead of everything else in the market place.

As part of the transform part of the conversation, Dell also brought up Boomi. This is an integration platform as a service that Dell bought; it interconnects apps and/or data so you can link and flow data, wherever that data is. It's widely in use today; in fact, Boomi is the basis of the largest integration cloud out there today, said Dell.

In terms of the connect imperative, Dell said the company realizes PCs are still very important and very widely used, but also talked about the broad adoption of the virtual client. The company is also moving aggressively into tablets, including tablets for consumers. Dell told the Oracle OpenWorld crowd that the company would be making news in the tablet realm shortly.

When it comes to the term inform, Dell is referring to the fact that data is growing big time, and organizations can use it to drive desired outcomes. Dell and its partners are working to help them do that by delivering comprehensive solutions for data analytics, he said. Dell already enables tens of thousands of customers to make data more useful and manageable, he said, and Oracle is a key Dell partner on this initiative.

Then there's the protect part of the equation, which of course relates to security – a top concern of all Dell customers, he said. Dell generates $1 billion in revenue related to security alone. SecureWorks is among Dell's solutions on this front; it offers managed security for big banks, pharmaceutical businesses, and others for which security is of the utmost importance, he said.

Dell also welcomed to the stage Deal Daly, senior director of technical operations at Ancestry.com, a customer of the tech company. Daly told the story of how traditional IT would not support the business at Ancestry.com, which now has 2.7 million subscribers, manages 10 petabytes of dynamic structured and unstructured data, has seen contributed content increase by six times since 2009, and expects to spend $100 million in the next five years to acquire new content.

So it worked with Dell to find a solution that relies on rack configurations with different compute on each rack. They assembled 13 racks per pod, and can replicate them anywhere in the world. Dell also developed for the company a supply chain model, which delivers the racks in a near on-demand method. All that will enable Ancestry.com to be more agile today and in the future, Daly said. **IT**

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Senate Approved Wheeler, O'Rielly Confirmations

The Senate in late October confirmed the nominations of Tom Wheeler for FCC chairman and Mike O'Rielly for FCC commissioner. Wheeler had a long stint as the head of CTIA, the wireless industry association, for which he was a dynamic leader and event speaker. He also has served as president of the National Cable Television Association. More recently he was with venture capital firm Core Capital, which he joined in 2005. He's also founded various companies in the communications service provider space, and in 2009 led the Obama-Biden Transition Project's Agency Review Working Group, which addressed the arts, science, space and technology. Wheeler replaces Julius Genachowski, who served as the FCC's leader from June 2009 to May 2013. As for O'Rielly, he has served as a policy advisor in the Office of the Senate Republican Whip, led by U.S. Sen. John Cornyn; as policy analyst for the Republican Policy Committee in the U.S. Senate; and as a senior legislative assistant in the Office of U.S. Sen. John Sununu.

FCC Aims to Improve Rural America's Call Completion

In rural America, an alarming number of calls are not being completed, and that is unacceptable, said the FCC's Mignon Clyburn. According to one study, she said, nearly a third of rural lines that were tested had completion problems on more than 20 percent of incoming calls. The same study found that the call-failure rate was more than 13 times higher in rural areas than in non-rural areas. To address that, the FCC is moving to enhance the commission's ability to investigate and crack down on call completion problems by requiring providers to retain information about calls on their networks and report them to the FCC. The agency's state partners will also be provided with data on intrastate calls to assist them in their efforts to address call completion issues. And the FCC's order on this front also gives providers incentives to immediately improve rural service quality by offering a safe harbor that eases data collection and reporting requirements for providers that adopt practices that are known to improve call completion rates.

U.S. Broadband – the Good & the Bad

The Telecommunications Industry Association has been urging the Senate Communications Subcommittee to take further actions to support broadband adoption, noting the United States' declining standing among developed nations in broadband deployment. "The lack of broadband connectivity inhibits job creation and other economic development, particularly in rural areas. It is essential to the nation's future that the United States not be outpaced by major trading partners in the deployment of cutting-edge technologies and networks." TIA President Grant Seiffert

wrote in the letter to the leadership of the Subcommittee on Communications, Technology, and the Internet. On the upside of the U.S. broadband picture, the locations of the up to 600,000 homes and businesses nationwide targeted to get broadband access for the first time through the FCC's Connect America Fund are now available on an interactive map at the FCC's website, and the FCC announced that providers in 44 states and Puerto Rico had requested over $385 million from the fund – which will be matched with hundreds of millions of their own dollars in many areas – to quickly expand broadband infrastructure to rural communities in every region of the nation. Broadband expansion in these locations is the result of a second round of funding from Phase I of the Connect America Fund.

M&A Hits Tech in a Big Way

Last month saw a lot of action on the acquisition front. Thoma Bravo LLC, a leading private equity investment firm, announced plans to acquire Empirix Inc., which does end-to-end network testing, monitoring and analytics. InfoVista, which sells IP and RF planning, assurance and optimization software solutions, bought Kuala Lumpur, Malaysia-based mobile network optimization specialist Aexio. Verint announced the acquisition of Victrio, a voice biometric and data science company. Five9 in late October announced plans to buy SoCoCare, a social engagement and mobile customer care solution. Genesys announced plans to buy Echopass Corp. for an undisclosed sum. And Nuance bought Varolli, marrying an inbound with an outbound call center solutions provider. BPM and CRM company Pegasystems Inc announced plans to buy Antenna Software, a mobile applications development platform business. And early in the third quarter, Oracle bought both BigMachines and Compendium.

NTT Com Buys RagingWire, Virtela

Major service providers did not sit on the sidelines during the M&A mania of the fourth quarter. NTT Communications Corp. delivered a one-two punch in the area of acquisitions, announcing plans to acquire Virtela Technology Services for $525 million in cash, and 80 percent of RagingWire for $350 million. Virtela is a cloud-based service provider that leverages network functions virtualization and software-defined networking, two areas in which NTT has shown a keen interest. As for the RagingWire deal, it will enable NTT Com to more than double its data center space in the U.S. The acquired also offers NTT Com technological expertise and patents related to efficient data center design and operation. RagingWire has $85 million in annual revenues, approximately 300 employees, and 650,000 square feet (and growing) in data center space. Virtela brings to the table more than 500 customers, including many of the world's largest multinational companies; operations in the U.S., India, and the Philippines; and 400 employees.

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A comprehensive product and service program, simplifying voice-enablement of Microsoft Lync with a product portfolio of voice network elements, advanced support services and consulting expertise.

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Lync

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By Peter Radizeski

Cloud is Expensive

Here are some of the apps that businesses run today: office suite, e-mail, newsletter, hosted VoIP, CRM, ticketing system, shared drive, Dropbox, and conferencing. So let's go low end and use Google Apps for e-mail, office suite and file storage for $50 per year per user or $5 per month. Dropbox is $10 per month for 50GB of storage. Website hosting is about $10 per month. Mailchimp is $10 per month to send newsletters to your prospects, customers and partners. Surveymonkey is free for basic usage. Hosted VoIP averages $30 per phone per month. Conferencing has free versions. Zoho CRM has a free version, but the next level is $12 per month per user. Zendesk for ticketing, support and chat has a $2 per month, but with domain mapping, support, etc., it is $29 per month.

That comes to $76 ($5+30+12+29) per month per employee plus $30 in other "team" charges. In a 10-person small business the cost for this software is $790 per month. As an agent, if you offered cloud services, that's more MRC than a SIP trunk.

For the small business though, it might be cheaper to buy software and run it themselves. Dedicated hosted servers are as low as $99 per month. I'm not anti-cloud, but if the business is a single location organization without mobility or remote worker needs, then it will not be leveraging the benefits of cloud at all. A year of rented software is $9,000 – that will buy you a lot of licenses, servers and hosting.

Everything looks like a nail when all you have is a hammer. Normally I am talking about interconnects. But in this case, I am talking about all cloud providers. Not everyone will benefit from moving to cloud. Multi-location businesses and virtual or mobile workers are the primary beneficiaries of cloud. **IT**

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

Arkadin Partners with Momentum Conferencing

Collaboration service provider Arkadin has aligned with Vancouver-based Momentum Conferencing. to broaden its global reach, especially throughout Canada where Momentum is strongly positioned. Meanwhile, Momentum gains access to Arkadin's solutions and global service network. In other recent news from Arkadin, the company appointed Didier Jaubert as chief partnership officer.

Intrust IT Joins Sangoma Reseller Program

Intrust IT, a leading Microsoft solution provider in the United States, has joined the Sangoma reseller program, and will standardize its on-premises Lync deployments with Sangoma's NetBorder Lync Express appliance. Intrust IT selected Lync Express based upon its effectiveness in simplifying deployments by incorporating Lync server functions, a session border controller, and voice over IP gateway into a single appliance. "As a Microsoft Gold Partner, and a provider of advanced IT solutions at the customer premise and in the cloud, Intrust IT is well positioned to deploy Lync to any enterprise," said Tim Rettig, CEO for Intrust IT. "The Sangoma NetBorder Lync Express removes the challenges of configuring and deploying the telephony component of a full Lync implementation. Having Lync server pre-installed on the device further simplifies the installations. The entire integrated Lync package is

expected to save a great deal of time and cost for implementing this technology."

Stampede Corralled by WyreStorm

WyreStorm, a global manufacturer that specializes in HD audio and video distribution products, has formed a strategic partnership with Stampede Presentation Products Inc. The goal is to help drive sales of its ProAV solutions through the range of channels served by Stampede's 11,000 dealer network. Stampede is the first distributor to be appointed by WyreStorm.

AMC, Astute Join Forces

Astute Solutions, a global provider of customer experience, knowledge management and social relationship management solutions, has entered into an agreement with AMC Services, an Italian management consulting company that works with several of Europe's top brands. Under this agreement, AMC Services will distribute RealDialog, the knowledge management platform from Astute Solutions that provides fast, accurate answers through a virtual assistant. RealDialog uses a patented natural language and computational linguistic technology to analyze and understand user questions and requests, resulting in what the company says is much greater accuracy of response than a simple natural language search engine. AMC Services helps companies with sales, customer services, marketing management,

knowledge management, employee development and quality management. It has offices in Milan and Rome and works with brands including Fiat, Alfa Romeo, Lancia, Banca Mediolanum, Vodafone and ENI.

Comstor Introduces Cloud Offering

Westcon Group's Comstor business unit has signed a new partnership with collab9. The agreement empowers resellers to develop significant new revenue streams based on cloud-based collaboration technology from Cisco. Built on the Cisco Hosted Collaboration Solution platform, collab9 is suited for Comstor's Cisco Advanced Collaboration Architecture Specialization and Advanced Unified Communications partners. "At collab9, we've taken the Cisco powered HCS solution to the next level, adding redundant data centers, existing legacy PBX integration and Internet support to create a highly secure solution that streamlines business communications and collaboration," said Kevin Schatzle, CEO of collab9. "The addition of Comstor as a value-added distributor will enable VARs and MSPs to add significant value to their business and leverage the Cisco branded and powered solution to their portfolio of cloud offerings while complementing their existing capabilities in on-site professional services and customer support. "

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By Paula Bernier

Dell Expands Shareplex, Toad

Dell Software Group has announced upgrades to its Shareplex high-speed replication technology and its Toad developer tool.

Shareplex has been enhanced to provide full replication support for Oracle Database 12c. As a result, Shareplex now has the ability to move data into and out of Hadoop, explained John Whittaker, director of product marketing for information management, with whom INTERNT TELEPHONY met at the recent Oracle OpenWorld event. Hadoop is initially the winner in the big data space, Whittaker added. The goal of most people using Hadoop is to drive big data analytics, he said, but many of those users also want to optimize the analytics platforms they have in place. That said, being able to move data to different environments in an efficient way is very helpful, and Shareplex can let you do that, he continued.

Darin Bartik, Dell's vice president and general manager of database management, added that Shareplex lets you move that data in its entirety just once and update only what's changed over time. That doesn't impact performance, which is really important considering the extent to which companies rely on their databases these days, he said.

"Using a traditional data movement tool is not plausible," added Bartik.

As for Toad, what's new here is what Dell calls a connected intelligence feature. To break it down, that means that the Toad interface now offers a direct link to the broader Toad World community, which has more than 3 million annual visitors and which has been around for about a decade. That way Toad users – who tend to be database administrators, database developers, and analysts – of all skill levels can more easily leverage the expertise of the peers both within their own organizations and within the world at large.

Whittaker said this is just the beginning of more to come along these lines. In the future, he told INTERNET TELEPHONY, Dell plans to offer more on this front, such as base-lining analysis.

In other Toad news, the company now offers a Mac Edition, for Oracle, MySQL and PostgreSQL. **IT**

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Why Today's Threats Require a New Approach to Incident Response

As we have seen in the news, some of the largest, most secure enterprises such as Google, Sony, Lockheed and many others have been targets of advanced persistent threats, leaving IT and security teams to worry that if these groups can get hit, anyone can.

It is probable that most businesses will be the target of a major cyber-attack at some point in time, and it's also fair to say that most businesses are not prepared with the latest security protection solutions – due to cost, staffing, or a complex vendor market making decisions difficult. How do organizations prepare for a major breach, while reducing risk and ensuring the security of valuable corporate data?

Performing incident response effectively is a complex undertaking. Continually monitoring for attacks is essential, and that means staffing, training, and having a plan in place. Establishing clear procedures for prioritizing and managing incidents is critical, and establishing effective processes for collecting, analyzing, and reporting data is absolutely key for mitigating risk. IT teams have an additional responsibility of building and maintaining relationships and communications with other internal departments. To have a successful incident response plan, much is required of IT beyond the normal job description. Having technologies in place that enhance the performance of security infrastructure helps in the reduction of time involved, staff needed, response and reports required.

There are countless stories being told of unique threats that find their way into the most secure organizations. Each newly discovered threat brings new challenges, and many result in the need or desire for a complete security overhaul of what some organizations have in place. But most organizations have a wide variety of network security products – including next-generation firewalls, SIEM platforms, advanced malware detection platforms and more – yet somehow attacks continue to penetrate these enterprise fortresses. So what is an enterprise to do? What's missing?

Visibility, context, time and enforcement are the most critical elements in stopping a data breach. Manual data collection processes are too slow, produce false positives and delay immediate action. Being able to respond rapidly, prioritize and analyze instantly, and take appropriate action immedi-ately, are key in mitigating risks and stopping threats before or as they happen. As good practice, every IT team should have a plan in place – a plan that evolves as threats evolve, prioritizing, analyzing and responding to existing and new threats. Traditional network defenses (firewalls and proxies) need to stay in place while their efficacy is improved. The best defense is a seamless integration of technologies that work together to reduce the burden on IT, saving organizations precious time and money. Integrating security technologies that work together for ground-to-cloud protection provides a barrier to thwart even the most advanced threats – stopping them as they get detected at the wall, shutting them down while they try to get in.

Some of the better known threats target zero-day vulnerabilities and are highly targeted. What usually makes these threats advanced is that they combine a set of unique infiltration techniques unrecognized by even the most experienced IT staff. Being able to respond to a threat in real time as it happens has been one of the biggest challenges to date, but is key to the overall success of a security operation. Being able to analyze a threat accurately and confidently using context and prioritization helps protect users no matter what device or desktop system they are utilizing. And being able to trigger controls across a heterogeneous set of enforcement points keeps data and users safe.

These new approaches to incident response will help protect against the newest waves of today's and tomorrow's attacks.

Such new approaches allow organizations to instantly respond to security incidents with a higher degree of accuracy and confidence, protecting all users from a variety of advanced attacks. In addition, the streamlined process and easy integration with existing firewall and proxy solutions delivered saves time and reduces manual security and response processes, allowing for a more dynamic environment for real-time identification, analysis and elimination of potential threats. As an added bonus, staff is now more free to address other critical areas of the financial services organization. By leveraging a solution that actively links multi-vendor, security enforcement points with a variety of security intelligence offerings, organizations can better utilize their security devices in place, and dynamically and instantly respond to malicious attacks in real-time.   **IT**

Mike Horn is co-founder and CEO of NetCitadel (www.netcitadel.com).

By Paula Bernier

Gaining a Competitive Edge with Hosted VoIP

Tadiran Telecom recently made available release 2 of its Aeonix software-based unified communications and collaboration solution. The company also revealed it has signed on several new partners.

New with this release of Aeonix is an HTML5-based dispatch console, which users can employ to manage their networks from any device, like a tablet or smartphone.

Lindsay Kintner, vice president of engineering at Tadiran Telecom, tells INTERNET TELEPHONY that the company is taking all its applications from .NET to HTML5. As a result, those applications can load on Apple, Windows, or whatever environment, he says. Offering one set of applications that work in any environment means the

bases everywhere so that users are able to maintain communications even in the event of the loss of a WAN connection; enhances security; delivers full integration with applications such as the Aeonix Contact Center; and provides additional functionality for SIP phones, such as silent monitoring, zone paging, group muting in audio conferences, and call preemption.

Aeonix already features integration with Lync, and will have integration with Lync 2013 by the end of the year.

ecosystem of distribution partners, explains Mike Long, marketing manager.

The first product offered by Tadiran Telecom was a PBX called Coral that it introduced in the mid 1980s. Tadiran Telecom introduced Aeonix, a Linux-based software-only application server than runs on VMware, last year. And now it's working to bring its Coral users over to the new solution.

Aeonix is already in use by many customers, including major players in the education, power and transportation verticals, among others.

"It's a very aggressively priced software only solution designed for distributed networks," says Long. "It's very easy and simple to use."

Tadiran Telecom will come out with release 3 of Aeonix toward the middle of 2014. That release will support WebRTC, and HTML5 web apps.

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end user doesn't have to physically deploy anything on the machine, upgrades are automated and centralized, and it's easier for third-party developers to add to the solution with new capabilities.

"This is the key direction and differentiator for our products," says Kintner. "The emphasis is being placed on pure web solutions, and moving toward utilization of WebRTC technology. These ongoing improvements allow for swift and cost-effective remote use and increased survivability."

With Aeonix R2, Tadiran also significantly increases the solution's capacity, upping support from 15,000 to 25,000 users; offers fault tolerance by replicating data-

As for the new relationships mentioned above, Tadiran Telecom has signed on 10 new channel partners. That group includes Mindlance in India.

"The partnership with Tadiran will enable us to offer an entire gamut of services in the communication sector, and help us develop new innovative solutions that will help companies maintain their voice infrastructure in a more cost-effective way," says Kamal Sharma, group CIO and IT BU Head at Mindlance. "This will help us increase our market share in this space."

Tadiran, which has been in business for 50 years, reaches its customers – businesses of all sizes around the world – through its

Tadiran Telecom will come out with release 3 of Aeonix toward the middle of 2014. That release will support WebRTC, and HTML5 web apps for user productivity, desktop, attendant console, and ACD agents.

The company is a privately held partnership owned by Afcon Holdings Ltd., which is part of conglomerate the Shlomo Group. This ownership is relatively new, as is Tadiran Telecom's CEO and U.S. general manager.

This year and 2012 were critical years for Tadiran Telecom in light of the new ownership, leadership and product direction, says Long. "This is like a relaunch of Tadiran." **IT**

Telepresence Takes a Back Seat to More Affordable, Flexible Videoconferencing

Telepresence got loads of attention a while back as Cisco and others sold us on the concept based on its exciting ability to make VIPs across town, across the country, or on the other side of the globe, feel as if they are sitting across the table from one another. But the market for such high-end videoconferencing solutions, which was very limited to begin with, has stagnated. Meanwhile, more – and much more affordable – videoconferencing solutions are becoming available and are seeing a fair amount of success.

"There's been a rush to the bottom," says Andrew Davis, senior partner at Wainhouse Research.

The bottom has fallen out of the market for multi-codec video-conferencing solutions with three screens, multiple cameras, and sometimes even special conference room design services, he said, adding that most videoconferencing requirements are more than adequately met with the $1,000 to $2,000 solutions available today.

In the second quarter of 2013, the video infrastructure business experienced significant negative growth compared to the year-earlier period, according to Wainhouse. There was growth, however, in the single codec product category, while multi-codec/telepresence systems "continued their serious decline." Meanwhile, during the same period, both sequential and annual growth rates for the endpoint business returned to positive numbers. However, the research firm added, "the growth rates are puny compared to historical averages." (This Wainhouse study did not track the personal videoconferencing market.)

"Visual communications and videoconferencing continue to permeate the marketplace, and if you're a Polycom or Cisco [which account for two-thirds of the market share], what you've seen is a drastic drop in the growth rate for these companies. But it's not because videoconference is in decline. It's because the eye of the market and the revenue has shifted elsewhere," said Davis. The shift, he said, is to more affordable solutions, including mobile and desktop offers, "some of which are virtually free."

Companies such as Tely Labs now offer sub-$1,000 huddle room systems that do a darn good job with audio and video quality, Davis says. Tely Labs in July introduced telyHD Pro, which has a list price of $649 and is aimed at secondary and tertiary conference rooms. The product now owns 14.6 percent of the North American videoconferencing market share, according to the SpotCheck Group Video Conferencing Q2-2013 report by Wainhouse Research.

AVer Information Inc. Americas is another vendor in the sub-$1,000 videoconferencing space. AVer came out with its first videoconferencing endpoint four years ago. Then, in 2011, it unveiled the HVC310, a four-way MCU selling for $4,500. But AVer Information decided that for its videoconferencing solutions to really be successful in the mid-market space it needed to get to a sub-$1,000 price point, Kris Rangarajan, marketing director at AVer Information, recently told INTERNET TELEPHONY. At the same time, the company wanted to make the solution very easy to configure, even when working with other vendors' solutions, and simple to use. The result was the EVC100, which AVer announced a couple months ago.

This solution provides all components, with the exception of the display device and Internet connectivity, in one box. The gear can be set up in 5 to 10 minutes. And AVer is partnering with cloud providers including Blue Jeans Network, Vidtel, and Zoom to ensure interoperability with the cloud.

"We are positioning [the EVC100] as the endpoint for the cloud because interoperability has to play in to the cost piece for this to be successful," said Rangarajan, who added that businesses can try the system via the AVer test drive kit.

Another new contender in the videoconferencing space is startup Perch. Presenting at the recent StartupCamp co-located at ITEXPO Vegas, Danny Robinson of Perch said that the company's solution aims to preserve company culture by delivering a solution for ad hoc videoconferencing between individuals or work groups. Perch lets people within the organization communicate more easily – and on a more personal level – for purely business or more personal reasons. And corporate culture spreads when people get to know each other on a personal level, he said.

Perch is available as a free App Store application, although the company expects in the future to charge for administrative features like managed bandwidth control and other premium features. The app drives an always-on video window (a mounted iPad) that connects spaces together and makes people feel they are in the same location. The system goes live when it detects a face. The idea is to enable people to pop in and out of meetings quickly and easily.

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Data for 1Q2013

Group VC Endpoints	Total Sales	North America	EMEA	Asia Pac	CALA	Total Units	N.A. units	EMEA units	A/PAC units	CALA units
Multi-codec	$35	$8	$13	$11	$3	275	58	98	94	25
Single-codec	$356	$101	$97	$137	$20	62,784	15,621	17,774	25,419	3,970
Executive	$33	$14	$12	$5	$2	8,946	3,776	2,813	2,026	331
Total Group	$424	$124	$122	$153	$26	72,005	19,455	20,685	27,539	4,326
Multi ASP	$128.80	$135.64	$130.28	$120.53	$137.04					
Single ASP	$5.67	$6.49	$5.47	$5.39	$5.10					
EXEC ASP	$3.66	$3.80	$4.07	$2.31	$6.80					
Total ASP	$5.89	$6.35	$5.87	$5.56	$5.99					
Video Infrastructure	Total	North America	EMEA	Asia Pacific	CALA					
Video MCUs	$100	$25	$28	$37	$10					
Other video infrastructure	$30	$9	$12	$7	$3					
Total Video Infrastructure	$130	$34	$40	$44	$13					

Source: Wainhouse Research

"The built-in video capabilities of smartphones, tablets, laptops, and desktop computers have made videoconferencing much more attractive to users in companies of all sizes," said Frederic Dickey, Sangoma director of customer services, which recently introduced a Vega Video MCU that allows SIP endpoints schedule and initiate ad hoc videoconferences.

In addition to the shift to more affordable and built-in video capabilities, the videoconferencing space has seen the introduction of some software-only solutions running on industry-standard x86 servers, the rise of the scalable video coding standard, and the arrival of a potentially disruptive technology known as WebRTC, noted Davis.

First to market with the scalable video coding was Vidyo, said Davis, who added that was disruptive in that it allowed the company to deliver a high quality solution at a low price.

Vidyo recently was recognized by Forrester Research Inc. as having the "the best overall video quality and performance" among the 10 vendors it invited to participate in a September 2013 report "Vidyo's routing architecture shifts the heavy media-processing power from bridges to the endpoints, significantly reducing the cost per port to deploy videoconferencing," according to Forrester. "In our demo, Vidyo clearly delivered the best overall video quality, even with a large number of participants. Vidyo is foremost a provider of desktop video onferencing but also sells room systems based on the same software and routing architecture. Its ability to deliver solutions from the desktop to the conference room put it more squarely in competition with room-based vendors."

Davis noted that while Vidyo was early to SVC, now Microsoft Lync 2013 uses it, as does Polycom. That, Davis said, raises the question: Once everyone adopts SVC, where does that leave Vidyo?

Meanwhile, Davis, among many others, believes that WebRTC has the potential to create a huge disruption in the video space. However, WebRTC has several hurdles to overcome before it can reach its full potential. Still unknown are whether WebRTC will be supported in the Apple and Microsoft browsers. At the same time, the WebRTC camp needs to settle the internal struggle as to which codecs to use. **IT**

> **Davis, among many others, believes that WebRTC has the potential to create a huge disruption in the video space.**

Yorktel Looks to Help Businesses with Video Compliance

HIPPA and Sarbanes-Oxley are among the rules that put new requirements on how companies and other organizations archive, secure and otherwise manage their information and communications. But how do newer corporate communications like video fit into these frameworks? That's something that Yorktel aims to figure out and share with its customers.

Vishal Brown, vice president of professional services at Yorktel, recently told INTERNET TELEPHONY that a professional services practice that offers banking, pharmaceutical and other businesses advice on videoconference compliance could soon be added to the company's stable of products. He added that Yorktel's business model has changed from solutions in which its customers make a one-time investment to a services-based model.

Yorktel is a video managed services provider that's been in business for 30 years. It offers professional services/ advisory services related to video, managed video, media services for town halls and corporate YouTube content, and a video as a service offering. The company recently became the only video-as-a-service provider to offer Lync federation with Office 365.

Another relatively new offer from Yorktel is VideoKiosk. The high-definition Yorktel VideoKiosks enable customers to get advice and information from remotely located experts in real time.

"Investment in customer service and support is critical to achieving any measure of long-term success, and is a mission-critical priority in today's marketplace where consumer loyalty can be eroded with a single bad interaction," said Greg Douglas, Yorktel vice president of business development, public sector, in a press release announcing VideoKiosk. "Through the power of visual communications, Yorktel VideoKiosk not only ensures that customers receive an expedient, high quality service experience, but also reduces the cost and logistical staffing expense of having agents onsite."

Now available for federal government and public sector agencies, Yorktel VideoKiosk units for commercial, retail and other private businesses will be generally available starting in the fourth quarter. They can be integrated with an organization's existing website or other portals, include a dual 22-inch touchscreen display, a secure enclosure, a telephone handset for customers, a USB headset for agents, an HD camera, secure communications leveraging various protocols, a document scanner, a printer, and various other optional components such as a credit card processing unit and fingerprint scanner. **IT**

How do newer corporate communications like video fit into frameworks such as HIPPA and SOX?

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By Jeff Elliott

Next Generation Wireless
Riding On the Back of Millimeter Waves

Of all the wavelengths in the spectrum used for wireless data transmission, perhaps the least well known is the millimeter wave band. However, it is precisely this band (and the continuous bandwidth it provides) that enables wireless data transmission at speeds and bandwidth that compare to the high quality of fiber optic communication systems.

Millimeter waves (30-300gHz) are a subset of the microwave band, which is itself part of the larger radio wave spectrum. These waves derive their name from the size of the wavelength, which measures from one to 10 millimeters.

Unlike low frequency radio signals, millimeter waves are not appropriate for long distance transmissions through the atmosphere, due to higher signal loss. Instead, MMW radios typically operate over distances of several kilometers using highly directional, pencil-thin beams that also help prevent interference.

It is this characteristic, along with continuous bandwidth not available at more commonly used lower frequencies, that makes millimeter wave technology the ideal solution for point-to-point, high-speed, high-bandwidth wireless.

The technology, available as commercial transmitter/receiver units that operate at gigabit per second speed, is already being utilized in multi-billion dollar markets such as cellular communications for the next generation of micro and picocell towers, high definition/3D digital video for broadcasting organizations and the motion picture industry, and for high frequency trading on Wall Street.

The Millimeter Wave
In spite of the relative anonymity of MMW radios in the commercial area, the MMW spectrum has been utilized for military satellite-satellite communications for decades.

Due to the dramatically reduced costs recently of MMW integrated circuits (a trend that is expected to continue), the technology is now being increasingly utilized for commercial applications.

The incredible promise of the millimeter wave, however, has as much to do with the Federal Communications Commission as any other factor. The FCC was formed by the Communications Act of 1934. As part of its mandate, the FCC allocates specific wavelength frequencies for everything from FM/AM radio

stations to television, cell phones, satellites, aeronautics, and the military – to name a few. However, with the explosion of wireless applications, most are jammed into small bands at lower frequencies of the radio spectrum.

Although the millimeter wave band is also regulated by the FCC, if the more crowded bands can be compared to the population per square foot of Manhattan, then the wide open expanses available to millimeter waves are more like Yellowstone National Park. This extra space is critical because it provides the continuous bandwidth required for high-bandwidth, high-speed data transmission. Without it, lower frequency products (despite being capable of such speeds were it not for their neighbors) are hitting a glass ceiling that even refinements and improvements in wireless technology cannot overcome.

Lower frequency allocations, for example, are typically 2-5mHz. In the millimeter wave spectrum the total allocation potential is up to 250gHz, with 5, 7, 10, 15, even 20gHz of continuous bandwidth available.

With so much room to work with, practical data rates in the millimeter band top out above 40gbps.

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Wireless for Next Generation Cellular

The highly directional characteristic of millimeter waves is ideally suited to cellular communications, particularly in crowded urban environments.

In a market that analysts estimate will exceed $5 billion by 2015, the installation of small base stations called micro and picocells is expected to outnumber traditional cell towers by as much as 20 to one. Micro and picocells cover only a limited area, but require less power, cost less and have a much smaller footprint than larger macro cell towers. This makes them ideal for indoor locations such as entertainment venues, malls, airports, train stations, office buildings, and hotels.

But the advent of next generation cellular networks is creating a new backhaul connectivity problem: how to connect the growing number of smaller base stations to the core, either through wired or wireless connections. This is exacerbated by concerns over frequency congestion and interference in dense cell deployments where four or more picocells could be mounted on light poles in a single parking lot or on a rooftop.

The most obvious solution for high-speed transmission of data-intensive content would be to establish a physical connection using fiber optic cabling. However, the cost and challenge of implementing fiber to each micro or picocell site is prohibitive, particularly in urban areas where streets and sidewalks cannot easily be trenched.

As a result, outdoor, fiber optic-quality wireless millimeter products are being considered by providers. With typical link distances for picocell backhaul estimated at a few hundred meters between sites, and microcells less than two kilometers, millimeter wave products are ideally suite for such applications.

"If you can't run fiber optic cabling, millimeter wave wireless is the fastest, quickest, smallest and least expensive solution," says Wayne Pleasant, former chairman of the Wireless Communication Industry Associa-

If you can't run fiber optic cabling, millimeter wave wireless is the fastest, quickest, smallest and least expensive solution.

tion committee charged with helping the FCC establish guidelines for the 80gHz light licensed millimeter wave band.

"In many key ways millimeter wave devices can be more reliable, and even faster, than fiber optics," says Pleasant. "Due to a reduction in latency, transmission speed is improved."

Millimeter wave radios require only very small antennas, measured in inches rather than feet for Wi-Fi and other wireless options. This addresses the concern over potential visual pollution caused when mounting a large quantity of such

products to light poles, billboards, or sides of buildings.

"Narrow beam antennas allow systems in these bands to be engineered in close proximity to one another without causing interference. Since a greater number of highly directive antennas can be placed in a given area, the net result is higher reuse of the spectrum, and higher density of potential users," says Pleasant. **IT**

Jeff Elliott is a Torrance, Calif.-based technical writer. He put together this article for Renaissance Electronics & Communications LLC (www.rec-usa.com).

Making the Call on Obamacare

A contact center drama unfolded the first week of October. That's because the nation's insurance exchanges that were created by the Patient Protection and Affordable Care Act (aka Obamacare) opened for business the first day of last month. Their mandate is to begin enrolling uninsured Americans in their choice of health insurance plans that will go into effect on the first of January.

As millions of uninsured Americans have begun to go shopping by telephone and the Internet, there have been more than a few glitches reported thanks to heavy traffic, including unresponsive web pages and unending busy signals. The reports of problems varied by location, and for good reason. Fourteen states plus the District of Columbia are running their own state-based exchanges, while the other 36 states are choosing to leave administration of the exchanges to the federal government. Since even these federal exchanges are being handled by a variety of different contact centers (though all by the same company – the contact center arm of government contractor General Dynamics), the success or failure of the websites and contact centers in the first days or weeks is likely to vary widely by region.

New York's system, for example, is run by the state, and officials had been confident of its robustness to handle high traffic.

"From everything that I've seen, New York is well ahead of the game, in terms of preparation and having the technology working," Blair Horner, legislative director for the New York Public Interest Research Group, told the Albany Times-Union.

Getting the online market ready, including staffing and equipping a new customer service center in Albany, was accomplished with $370 million in federal grants, according to the Times-Union.

Still, when the day arrived, the state website saw 10 million visits on Oct. 1 alone, according to the Poughkeepsie Journal, and many of these visitors encountered error messages. Later in the day on Tuesday, the website featured a message encouraging insurance shoppers to try again later.

For Covered California, the agency that runs the Californian state exchange, the news was slightly better. The agency reported that it received one million hits on its website during the first 90 minutes after the exchange opened. By 3 p.m., this number had escalated to five million hits, and the two contact centers handling calls had received 17,000 phone calls. While traffic was reported to be slow on the Covered California website, no major glitches were reported, according to CBS Los Angeles. Officials in California reported they would be doing site maintenance overnight to optimize performance.

Idaho's new health insurance marketplace exchange (which is a joint state-federal venture) fired up Oct. 1 reporting both high traffic and just a few temporary glitches, according to the Idaho Statesman. (But then, consider the population of Idaho compared to that of New York or California.) Technical problems in Maryland and Minnesota delayed the launch of the enrollment process for all or most of the first day.

On the federal level, officials said more than 2.8 million visitors between midnight and late afternoon contributed to long wait times for access to Healthcare.gov, the website they are running for 36 states. The New York Times reported that a clear picture of the scope of the initial wave of enrollees could take months to emerge, and that states that launched their own exchanges were at varying levels of preparedness. Refinement of the contact center and website technology was expected to continue, and sites will likely work better as traffic evens out. **IT**

HEALTH INSURANCE CHANGES AHEAD

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The overriding theme of the conference will be Mobile Commerce is the New Buzz and will draw VP and C-level executives from all parts of the mobile wallet and mobile payments ecosystem. Experts will discuss current mobile commerce issues and trends, with an emphasis on retail, online and person-to-person payments and strategies.

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By Erik Linask

Technology: The Modern Swimming Lesson

Modern technology – from consumer devices to enterprise software and cloud computing – is changing our world, for the better, most would argue. Indeed, every business is constantly on the lookout for methods of improving workflows and processes to create more efficient operations. In many cases, automation plays a significant role in creating more efficient businesses.

This trend towards process automation had led to an opportunity for automation vendors, consultancies, and workforce analytics companies, all with a mission to help businesses achieve greater levels of efficiency through automation.

For instance, IPsoft was founded on the belief that automation would allow IT infrastructure to run more efficiently, behaving as an emancipator of sorts. Through automation, engineers, developers, and others would be allowed to focus on their core businesses, not their infrastructure, which would be in a constant state of optimization. With the third version of its IP Center software currently available (and v4 in development), Thomas Young, vice president of business services at IPsoft, says the company estimates 60 percent of trouble tickets can be automated in the IT service supply chain (which is substantially higher than the 47 percent reported by other studies).

At its heart, this isn't surprising, and the automation trend is largely being fueled by the big data explosion and the use of data analytics to build businesses. Many are using the concepts to understand customers better, but it's equally important to know your own business and its inefficiencies. According to Young, the idea is to allow employees to perform intelligent, cognitive functions, rather than information processing.

As I spoke with Young, I realized this wasn't the first time I had been engaged in a conversation of this nature. Four years ago, when Interactive Intelligence launched its IPA product, Joe Staples and Tim Passios visited TMC's then-headquarters at Technology Plaza, describing exactly the same concept. At the time, the concept of CEBP was starting to gain some traction, but Passios was quick to note that, while CEBP is a step in the right direction, communications-based process automation is the real key to efficiency and operational excellence (http://tmcnet.com/59243.1).

Basically, it's a way for businesses to monetize the data they collect, not externally through increased customer spend, but internally, which can create a highly destabilizing force in the market, and a potentially demotivating one within the workforce.

Young says IPsoft recognizes the impact automation can and will have on the workforce; its goal is not to increase unemployment lines, but to help businesses not only automate to increase efficiency, but to also help create career plans for those employees who will be impacted by automation. To that end, it is building out its consulting practice, which will focus less on the technology and more on its implementation and deployment.

Frankly, the effort must be collaborative to be effective. Employers must create not only actionable development plans for displaced workers, but the workers, themselves, must be motivated to become newly educated to perform new functions. It's not as much a question of should they learn new skills as it is an imperative. Many in today's workforce were trained to perform certain tasks, ones that are now becoming obsolete thanks to technology. This isn't new; it's been happening since the Industrial Revolution, the driver of unprecedented economic and social change across the globe.

We know the changes during the 18th century carried with them a period of poor work conditions, particularly for unskilled laborers, who had few options until government reform introduced labor unions and other workforce benefits. Today, not only do many of those institutions still exist, but the opportunities for education are well within the reach of most employees. Many businesses will even pay for their employees' job-related education. Why not? It's in their best interest to retain quality employees who seek growth and development, and are already familiar with the business.

As Bob Dylan sang, back in 1964:

Come gather 'round people
Wherever you roam
And admit that the waters
Around you have grown
And accept it that soon
You'll be drenched to the bone
If your time to you
Is worth savin'
Then you better start swimmin'
Or you'll sink like a stone
For the times they are a-changin'.

Those words hold true today as much as they ever have. Technology is the rising tide, and it brings with it both opportunity and challenge with its excitement. Regardless of current skillsets, though, opportunities abound for anyone with the motivation to dive into the tech waters. There are those who blame business for job loss due to automation, others will blame the employees, and many will blame government. The truth is, all three play a role but, when it comes down to it, no government or corporate program will be successful if the employee doesn't want to learn to swim. **IT**

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