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# INTERNET TELEPHONY

VOLUME 15/NUMBER 2 MARCH 2012

The IP Communications Authority Since 1998™

## SIP Revolution

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Telx CEO Eric Shepcaro

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## M&As and IPOs

As discussed in **INTERNET TELEPHONY's** January cover story, despite the prolonged economic

drag, only slightly improving employment numbers, a depressed housing market and the sovereign debt crisis, business as a whole – and related to the communications industry in particular – is doing quite well. That has created an environment that's more welcoming of mergers and acquisitions and IPOs than what we saw in the recession-era years, in which M&A and new stock offers came to a relative standstill.

Given I've spent most of my 20-some years in the industry reporting on the Bells and other communications service providers, one of the key deals that stands out in my mind is Ericsson's recent purchase of Telcordia. This \$1.15 billion acquisition had one of two leading providers of both wireline and wireless network infrastructure and services to the world's major service providers, envelope the former research and development arm of the Bells, which has a strong operational support and billing portfolio, not to mention what I imagine is a treasure-trove of intellectual property.

Telcordia, formerly known as Bellcore, has for years focused on all the messy behind-the-scenes stuff that makes telephone, and now broadband, networks so wonderful and reliable. As the communications environment changed, and things got more competitive, the former Bellcore was spun off as its own entity, renamed Telcordia, and pushed to expand its solutions to others beyond just the former RBOCs. The company had limited success in that last part, but Telcordia's importance in back office network systems cannot be underestimated. And, as networks and the services offered over them continue to evolve, so too have Telcordia and the back office systems that support service provider networks.

As Grant F. Lenahan, vice president and strategist for service delivery solutions at Telcordia, now part of Ericsson, discussed in his September 2011 column in *Next Gen Mobility* (a sister magazine to **INTERNET TELEPHONY**) services traditionally have been facilities like voice or data lines, or connectivity tied to spe-

cific devices. "This lent itself to a few, big, monolithic, expensive, entirely internal, massively scalable management processes, exhaustively tested," he added. But the nature of the operators' business is changing.

"The biggest difference I see is that software-enabled services will be simpler, but there will be many more of them," he said. That means service providers and their partners need the ability to bring up, and if needed take down, services more quickly.

As Martin Sundbladd, director of portfolio management at Ericsson said in a mid-January call following the close of the Telcordia deal, all this means that "the cost of producing services needs to come down, and we need to prepare ourselves for that."

Meanwhile, while we all continue to wait for the gargantuan Facebook IPO, there were a good amount of initial public offerings in 2011 and expectation for a healthy market in 2012, at least according to PricewaterhouseCoopers.

In its year-end outlook for the U.S. IPO market, PwC noted that as of Dec. 16, there were 28 pricings, which raised \$6.4 billion in the fourth quarter of last year; new filing activity remained robust in the fourth quarter, with 38 companies entering the pipeline; there were larger offerings and a diversification of industries in the IPO pipeline – namely technology and energy companies; 18 of the 28 IPOs were backed by a financial sponsor (either a PE or VC firm), which accounted for \$4.9 billion of total fourth quarter proceeds; and there was a steep decline in the volume of foreign issuers coming to the U.S., with only four offerings.

"The market reignited in December with the return of larger offerings, including Michael Kors and Zynga, which combined with Groupon and Delphi raised \$3.2 billion – half of fourth quarter total proceeds," according to PwC. "The surge in activity and relative strength in the number and diversification of industries in the IPO pipeline are early signs of a healthier IPO market in 2012, according to IPO Watch, a quarterly and annual survey of IPOs listed on U.S. stock exchanges by PwC's transaction services practice."

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# Genachowski Makes Brilliant Move in Hiring Schulzrinne

FCC Chairman  
Julius Genachowski  
recently announced

the appointment of Henning Schulzrinne as chief technology officer – a major move forward for the commission and the U.S. communications regulatory environment. This move was made in part because the FCC has had to keep up with fairly rapid changes in the communications and networking worlds.

Telephony was once a circuit-switched service provided by a handful of large telecommunications companies and a number of regional players. It was relatively easy to understand and regulate. But when VoIP and other forms of IP communications came on the scene, the world became less defined. Vonage didn't own the pipes to people's houses, but it provided telephone service. Thus the move from circuit-switched communications to packet switched was under way.

**Schulzrinne has played an absolutely crucial role in the standards process and advancement of IP communications. He co-designed SIP, RTSP, RTP, and GIST.**

This raised issues of net neutrality, but also changed the way communications service was to be regulated. Moreover, the FCC under Kevin Martin decided that VoIP providers had to deploy rapidly E911 service just like LECs and CLECs. This additional cost caused some VoIP players to go under but as Martin told me in a keynote interview at a recent ITEXPO – it wasn't anything personal but a safety issue that needed addressing.

Fast forward to recent times, and you know I have spoken about the death of the PSTN in this space. Although we are a number of years away from the inevitable death of the public switched telephone network, it will happen. But much of the technologies and standards to make this transition aren't yet in

place. And to make matters worse, it is only a matter of time before special interest groups get in on the action and make statements about how the evil government and phone companies want to take away grandma's telephone service.

So when the switch happens, it needs to be absolutely perfect – flawless in fact.

This brings us to the news of Schulzrinne, who has played an absolutely crucial role in the standards process and advancement of IP communications. Recently he was chair of the Computer Science department at Columbia University as well as co-chair of the Internet Technical Committee of the IEEE Communications Society. Perhaps most importantly, he co-designed the session initiation protocol, which we affectionately know as SIP, and also the real-time streaming protocol, the real-time transport protocol, and the general Internet signaling transport protocol.

Schulzrinne has spoken at past TMC events and has been an important part of the content we have created over the years – going back to the early days of *INTERNET TELEPHONY* magazine, which launched in February of 1998.

The FCC is a government agency, which generally means it is bogged down by bureaucracy, red tape and politics, so a logical question is how much change can one man bring? I am unsure. But this move is a stroke of genius by Genachowski, and I give him the highest marks for his foresight in choosing Schulzrinne for such an important position at a time when the nation's communications network will be experiencing absolutely revolutionary technological advancements.



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By Jonathan Rosenberg



## Buddies Forever?

May 2012 will mark the 15-year anniversary of a concept that has been at the heart of modern real-time communications applications since its introduction – the buddy list. The term was first used by AOL as part of its AOL Instant Messenger application, released in May 1996 to the general Internet community. At its core, the buddy list experience combines four concepts: a scrollable list of users, user addition through a friend request of some sort, an indication of whether the user is reachable for real-time interaction, and a capability to initiate a real-time interaction (most notably an instant message). This experience established a design paradigm that became foundational for many applications that followed it, and it is still in usage today. Happy birthday, buddy list!

In Internet terms, 15 years is a very, very long time. A lot has changed since the buddy list was introduced. These changes have started to put real pressure on the buddy list as a design concept. In particular, three changes in the technology landscape are challenging the venerable buddy list: mobile address book matching, social graph overlays, and e-mail links. Behind all of these are the bigger industry trends around mobile and social.

The mobile address book matching concept has been utilized by several recent smartphone applications. These applications, once installed, scan the mobile address book. The contents of the address book are uploaded to a server. In addition, the application determines (and sometimes verifies) the user's mobile phone number on that device. Verification typically happens by having the user type his or her mobile number into the app, and then a backend service sends an SMS to that number, containing a code. The user enters the code into the mobile app, and this serves as proof that the user truly owns that number. The backend service builds up a database of address books (which contain mobile numbers for many if not most entries), along with mobile numbers for their users. Any number in the user's mobile address book that matches the mobile number of another user becomes instantly reachable. Indeed, some applications take this to the next level, and send push notifications to existing users when a new user signs up that is a match for their address book.

Mobile address book matching does away with the friend request concept, and instead relies on the social graph present in the mobile address book itself. It also does away with the notion of a scrollable list of users unique to the app; rather, the scrollable list is the mobile address book itself, and a subset of them are reachable for some new real-time interaction. Mobile address book matching has only become feasible in the past few years; it relies on smartphones, app stores, and mobile push notification services.

The second change is social graph overlays. In this approach, a user installs an application and then links that application to an existing social network – typically Facebook. Any friends on that social network who are already users of the same application become instantly reachable. Any friend not already using the same application can be sent an invitation to obtain the application. This approach has been used by a wide variety of web and mobile applications – not just real-time communications. Like mobile address book matching, it does away with a distinct friend request, and instead relies on relationships built on an existing, third-party social graph. It has been enabled through the emergence of social networks and through the connect model, allowing third-party applications to access a user's social network.

The third change – and the oldest of the three – is the use of e-mailed hyperlinks. When users install an application, they can enter the e-mail address of anyone they wish to talk to (or import e-mail addresses from the mobile address book or other source). The target user is e-mailed a hyperlink, and when that link is clicked on, the user is brought to a page that enables them to have a communications experience without signing in or signing up for the application. E-mailed hyperlinks also do away

**Though we wish the buddy list a happy birthday, it is clear that new technologies that bring new and different approaches for communications are arriving.**

with the friend request, and also abandon the scrollable list, opting instead for a reach anyone model based on e-mail address.

A common theme across all three of these new technologies is the reliance on larger, external social graphs to bootstrap communications. Mobile address book matching relies on the social graph of the telephone network itself, using the mobile number as an identifier and the universe of mobile address books as the social graph (arguably this is the largest social graph in the world today). Social graph overlays rely on third-party social networks for the graph, and leverage the identifiers in those networks. E-mailed hyperlinks rely on the social graph of the e-mail network and e-mail address books, using the e-mail address as the identifier.

Though we wish the buddy list a happy birthday, it is clear that new technologies that bring new and different approaches for communications are arriving.

*Jonathan Rosenberg is chief technology strategist at Skype ([www.skype.com](http://www.skype.com)).*



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By Dave Caputo



## Managing the Explosion of Mobile Video in Your Network

Internet consumers are spending more time using Internet applications for activities such as streaming mobile video that require a high quality network. Sandvine's Fall 2011 Global Internet Phenomena

Report revealed the use of video and real-time entertainment applications are on the rise, now accounting for 60 percent of peak downstream traffic. This environment creates new challenges and opportunities for Internet service providers.

The good news is that service providers now have business intelligence tools to help manage the explosion of mobile trends and are in a unique position to mine an unparalleled amount of information about how and when the Internet is being used that can enable monetization of their networks through creative marketing programs.

The core enabling technology for network business intelligence is network policy control, which supports all access technologies and can identify subscriber, application and location information. For an ISP to truly reap the benefits of network insight, the data must also be analyzed quickly and efficiently to present the actionable, real-time intelligence that is critical to effective business decision-making.

To help ISPs specifically with video, Sandvine added a Real-Time Entertainment Dashboard to its library of network analytics dashboards. The new dashboard provides business

Sandvine's Real-Time Entertainment Dashboard also quantifies the subscriber's quality of experience using a patent pending QoE metric based on observable factors, like start latency, buffer stalls, resolution downshifts due to lack of bandwidth, as well as resolution compared to the capability of the device. This provides an unparalleled holistic view of transport quality in combination with presentation quality and enables the service provider to ensure customers a great QoE, thus reducing subscriber churn.

Sandvine's ability to provide complete network business intelligence insight, including mobile device awareness, is also being increasingly used by innovative providers as the basis to create and market new, more profitable service plans. Device awareness determines what devices are generating the Internet traffic, e.g. smartphone, tablet, PC, video game console. A network policy control system provides the full context awareness that is required by the ISP to gain visibility into what impact applications and devices are having on network resources, and to develop new revenue streams based on that information.

For example, marketing departments can deliver personalized campaigns tailored to subscribers using tablets to watch movies in real-time, who may choose a service tier that assures QoE, prioritizing video streaming over other applications and providing lower latencies. Such movie buff service level agreements could be based on device-type as well as on bandwidth and usage quotas that are optimized for video streaming.

**The move toward measuring quality, time, adoption and revenue metrics for real-time entertainment applications is revolutionary to the industry.**

Intelligent redirection to video optimization platforms based on device type, as well as type of media being consumed, is another way to leverage device awareness and ensures that the most suitable media optimization policy is applied. For example, there is no point in sending high-definition

intelligence that is particularly relevant to streaming audio and video traffic from providers such as Netflix, YouTube and Spotify, including measurements regarding the quality of the video experience, the viewing duration, and the associated revenue generated by the adoption of over-the-top services.

The move toward measuring quality, time, adoption and revenue metrics for real-time entertainment applications is revolutionary to the industry, and has numerous benefits for both ISPs and broadband subscribers. Other solutions in the marketplace merely measure video byte consumption, which is the product of factors like video resolution, codec and duration, combined with the number and duration of videos actually viewed by subscribers. Sandvine's dashboard measures and reports on these fundamental metrics individually, providing insight for CSPs into the quality achieved per network location, per time of day, and per device type – leading to more informed network operations decisions.

video to client devices that are not equipped for it. Optimization techniques include client buffer management, application-aware bandwidth allocation, network-aware video rate adaptation, and intelligent caching.

Mobile video trends are only going to gain momentum as devices become more sophisticated and bandwidth-hungry. At the same time, Internet broadband penetration is reaching nearly half the population in mature markets, so service providers cannot depend primarily on new subscribers alone as a source of revenue growth. By applying the principles of network policy control and business intelligence, broadband providers are able to defer capital investment, reduce operating expenses and increase revenue by capitalizing on marketing opportunities.

*Dave Caputo is co-founder and CEO of Sandvine ([www.sandvine.com](http://www.sandvine.com)).*



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By Michael Stanford



## Professionals Hack People

Bruce Schneier tells us that notions of security are meaningless unless linked to specific threats. He also points out that security policies are tradeoffs: Increases in security are often at the expense of usefulness or usability. This also holds in the opposite direction.

Mobility is so useful as to be indispensable, but introducing mobility adds several categories of vulnerability to enterprise networks: Smartphones and laptops taken off the company premises can be lost or stolen; when a device is lost or stolen the data on it can be stolen; if the device is connected to a network other than the corporate network its traffic can be looked at, and it is more vulnerable to being hacked, since it is outside the corporate firewall. When you add Wi-Fi to the mix, additional threats appear; for example, even on-premises traffic can be vulnerable to interception by somebody parked outside, and hackers have demonstrated that a malicious transmitter can gain control of computers with vulnerable Wi-Fi device drivers.

Compounding these vulnerabilities, an increasing number of organizations have thrown in the towel on smartphones and iPads, and now allow users to bring their own devices to work.

This means a vastly increased variety of devices with company secrets flowing through them.

Mobility doesn't change the greatest security vulnerability: people. Again, Schneier gives the uncomfortable truth: "Amateurs hack systems, professionals hack people." The disquieting consequence is that if your network isn't already compromised, then it is likely to be, regardless of your countermeasures.

So you need measures to mitigate the damage when the inevitable happens. Much worse than getting hacked is getting hacked and remaining unaware of it. Fortunately there is something you can do about this: Intrusion detection systems monitor your network traffic and issue alerts when they encounter suspicious behavior.

To be adequate, your mobile security plan must include not only conventional measures like firewalls, AAA, VPNs, storage encryption and remote wiping, but also explicit user training and intrusion detection.

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

## Ask the SIP Trunk Expert

By David Byrd



## SIP Delivers More than Voice over Internet Protocol

Although a SIP trunk can be viewed as a phone line delivered over an IP trunk connection to a network using Ethernet, broadband, copper, etc., voice is not the only thing the protocol can handle. It also manages data, video, chat, e-mail, presence, collaboration and conferencing.

SIP is a specific IETF-defined signaling protocol, and a SIP trunk is an integral part of the delivery of this protocol. However, the term SIP trunk means little to businesses looking to implement a communications solution. The matter is further complicated by individual service providers, who explain SIP to their customers by branding the term in order to reflect their own specific set of service offerings. The number of definitions contradicts and confuses the meaning.

The IP industry is still maturing. Industry shapers, like the SIP Forum, acknowledge the need for new definitions and increased understanding of SIP, and call for collaboration to create strategies for SIP's growing ecosystem.

### Forces for Change

**VoIP** – A factor driving the penetration of VoIP/SIP trunking continues to be the adoption rate of VoIP by residential users. Residential bundled packages of cable and calling services enable business owners to experience the cost savings and usage of VoIP.

**Mobility** – Fixed mobile convergence, SIP-enabled smartphones and unified communications are increasing the demand for SIP. SIP-enabled devices can reduce the cost of communications via cellular networks by using the Internet for transport.

**Business Continuity** – SIP networks can be designed with multiple telephony and application service providers to ensure there are no interruptions to business applications or services in case of a failure. The use of SIP in support of an application increases its survivability and availability.

SIP is transforming how businesses communicate and collaborate. There is much to learn as businesses transition to and expand their use of SIP. However, as the protocol evolves and is updated to support additional applications like FoIP and UC there will continue to be a blurring of the lines between the protocol and the applications it supports.

SIP is changing the way communications is defined. It is no longer simply a device-to-device concept. It is instead user to user, without application or geographical limitations. SIP is therefore, a protocol supporting a user-to-user communications paradigm that utilizes any device, any application, anywhere at any time.

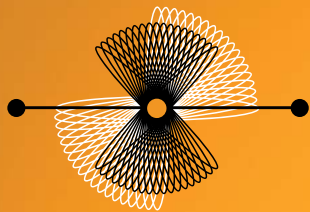
*David Byrd is executive vice president of sales and marketing at Broadvox ([www.broadvox.com](http://www.broadvox.com)).*

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By David Yedwab



## A Successful Focus of IT on Business

Late in 2011, I had the fortuitous opportunity to meet Mike Wilkinson, Ph.D., EVP and CIO of PPD Inc., a leading biopharmaceutical industry contract research organization providing drug discovery, development and lifecycle management services.

Mike, a business professional, was appointed CIO by the CEO. PPD's story is interesting because it shows that having a business leader in charge of IT and closely managing IT and business and process development works and can improve the business and make IT recognized as a significant asset.

What follows is a paraphrase of a discussion I held with Mike to discuss his and PPD's experiences as a broad hint to businesses that close alignment between IT and business operations can bring significant benefits – if well communicated and designed as overall business improvement, not as a punishment to IT or the business units.

PPD's CEO appointed Mike, who had been a significant business leader within PPD, as the CIO in 2010. As an already respected business leader, the transition may have been easier had an outsider been given the role. Mike indicated that this realignment was consistent with the broad macro-trend/desire to better align business objectives and technical strategy – to align dollars and provide value to the company, its personnel and, most importantly, its customers.

PPD wanted to align technology spends better with the business needs as expressed by customers. Ultimately, the goal was to improve PPD's value proposition and quality of delivery to customers – by having better alignment of technology deployments along with the needed process improvement, change management, training development and data analytics accomplished simultaneously, across the business.

Mike concluded that PPD has achieved significant improvement in IT ROI because it is no longer a siloed/separate operation, but instead is well integrated with the business, its processes and objectives. In fact, the IT and business leads work together (shoulder to shoulder) on projects

with joint responsibilities for success. IT now operates in a virtual matrix organization, but without dual reporting. When asked how both the business and IT folks reacted to his initial appointment and the overall realignment/change, Mike indicated that it was very positive as the vision was communicated very well as an overall focus on business improvement with both the business and IT people being well respected and treated well throughout the transition.

Over a little more than a year now, the overall benefit has been holistic improvement across the business – IT projects are not considered as a standalone, but, rather, are cross-functional programs implemented across the

business. Among the specific benefits have been shorter lifecycle improvements because the required process changes are done holistically with all relevant functions included – IT, business, process, training and analytics taking responsibility and developing their portion as part of an integrated solution.

While the details of PPD's actions are specific to its business, the idea of aligning the IT and business organizations around projects/initiatives can be readily translatable to all businesses.

*David Yedwab is a founding partner in Market Strategy and Analytics Partners LLC ([www.mktstrategy-analytics.com](http://www.mktstrategy-analytics.com)).*

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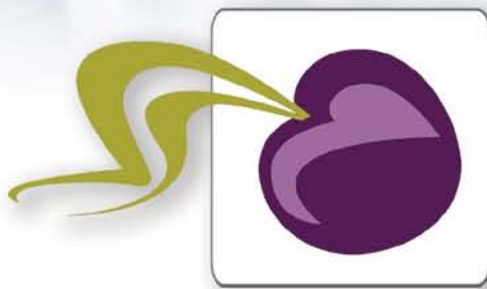
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By Mike Sheridan



## Having a Dilemma over your Disaster Recovery Planning?

This past October I had the chance to meet with customers and tour Bangkok the week before the streets were flooded by heavy rains in the north. Clearly disaster recovery plans were tested by many businesses and many contact centers.

But which option to choose? Regardless if your contact center technology is housed in your own data center or in a hosted environment, the importance of having a comprehensive disaster recovery strategy is not diminished, it just faces different challenges.

Every organization making the decision to have a disaster recovery strategy for their contact center is faced with determining what kind of environment they want and what their business can afford – both financially and in terms of acceptable downtime. On the customer premises, a hot active solution provides the most seamless solution for business continuity but at the greatest cost. A replicated cold virtual machine deploy-

ment environment provides the lowest cost, but poses the greatest risk to business continuity and challenges to getting the contact center back online. In every organization, these questions drive the need to look at the cost benefit as well as the impact that a contact center outage would mean to their business operations.

Recently, in order to manage the costs of skilled resources as well as capital expenditures, many organizations are embracing cloud or hosting technologies. So how does putting your disaster recovery site in a hosted environment impact the cost-benefit/impact-analysis for your business? First, if your organization has already established an on-premises contact center, investing in a hosted disaster recovery site will not offset the investments already being made in skills and infrastructure. As a result, the cost of establishing an on-premises redundant site is largely compared with the subscription cost of a hosted redundant system. Plus, transitioning communications infrastructure and agents from a premises-based solution to a hosted environment upon a disaster occurrence brings an added complexity which is only

offset by having both sites as hot active and sharing the load between the systems.

Based on this, when does it make sense to utilize a hosted disaster recovery site? As I mentioned above, having a hybrid solution that splits the load between a hosted environment and a premises environment allows you to maintain business operations if an outage occurs at either site. In this scenario, when you already have your primary site deployed as a hosted configuration, a disaster recovery site provides the greatest return on your investment. The host provider will likely offer a disaster recovery option at a manageable price and your organization can continue to avoid large capital outlays and investments in skilled resources.

Hosted deployment contact center solutions for your organization's primary and/or redundant deployments will provide valuable outcomes, as long as careful planning and management processes are put in place. Have you already started planning?

*Mike Sheridan is executive vice president of worldwide sales with Aspect ([www.aspect.com](http://www.aspect.com)).*

## E911 Watch

By Nick Maier



## When It Comes to E911 Solutions, the Cloud Rules

Imagine you are a highly mobile worker using a softphone app on a mobile device.

You work in the office, at home, in the airport, on the road...wherever.

Now imagine that, regardless of where you are, you are always connected to the enterprise network. And, if you dial 911 on your phone from any of these locations, your call will be automatically connected to the emergency response center closest to your location, giving you the best chance of help arriving in time.

Sound like science fiction? This scenario is closer to reality than you think thanks to the emergence of cloud-based E911 solutions.

E911 applications are now being deployed in the cloud that can track your location whether you are inside or outside the enterprise. When you dial 911, your location is automatically used to route your call to the right emergency center. If the current trend continues, the cloud will ultimately hold all voice and data applications – including E911.

What are the missing pieces to a complete cloud-based E911 solution? The only missing piece from what, until recently, was a 'science fiction scenario' is the availability of intelligent voice applications on softphones that can automatically send your away-from-the-enterprise location when you dial 911. Is there any doubt that this will be possible soon?

Like the blistering pace of change in all aspects of communications, cloud-based E911 solutions have quickly become flexible, reliable and cost-effective while protecting workers and helping organizations comply with state laws and OSHA regulations.

In the not-too-distant future, cloud-based E911 solutions will be able to accept not only emergency voice calls, but emergency video and emergency text messages. Location objects sent along with the video or text will make it possible to automatically route the information to the right PSAP so help can be dispatched.

The cloud rules!

*Nick Maier is senior vice president of Red-Sky Technologies ([www.redskyE911.com](http://www.redskyE911.com)).*

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By Rich Tehrani & Max Schroeder



Continuity Planning 101 – A Continuing Educational Series

## The Mummy in the Basement

Statistically, commonplace events present a greater financial risk to businesses than major disasters. Tsunamis and freak storms generate big headlines, but they occur infrequently. In 2011, for example, the U.S. experienced the deadliest tornado season in 50 years. Then the eastern and northeastern U.S. was hit with hurricanes, floods and a very rare October Nor'easter triggering major power disruptions. These events were costly to businesses in the affected areas, but probably did not even approach the annual cost of paying for the Procrastination Mummy.

Postponing infrastructure updates can be costly and even lethal to an organization's financial health. Every day of delay in implementing VoIP, FoIP, virtual operating systems, unified communications and other new technologies, means money is being lost and the business remains at risk of a major catastrophe. Generally, management does not have a sense of urgency because daily operations appear normal, but the foundations of their business are already slowly eroding. It is analogous to ignoring a moldering mummy in the basement – you know it is there but are afraid to look.

At TMC, we are very aware of the difficulty resellers and service providers are experiencing in selling disaster preparedness

solutions. Today's thorny economy has conditioned many managers into a postpone-the-decision-until-better-times attitude. Resellers need to motivate clients into opening the basement door and looking the mummy in the face. Point out that postponing purchasing decisions is costly and could be a self-fulfilling prophesy for never seeing better times again.

One approach is to show real-world examples with real numbers of how to reduce voice, fax and other messaging costs. Show how implementing green solutions can also increase employee productivity plus generate additional revenue. Opening with "here is what some of my clients are doing" remains a proven and effective sales strategy. Make sure you point out that hosted and managed services provide the same benefits plus are simple and quick to deploy. Also, many service providers provide trials or short-term contracts, which are attractive to managers still on the fence. Whoops, did we forget to mention that business continuity is also built into these solutions?

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

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## Regulation Watch

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By William B. Wilhelm and Jeffrey R. Strenkowski



## FCC Adopts ICC Reform for VoIP Providers, Reviews IP-IP Interconnection

On Nov. 18, 2011, the FCC released an order and notice of proposed rule-making that overhauled the Universal Service Fund distribution mechanism and intercarrier compensation. Among other things, the order establishes a new default framework for the termination of VoIP traffic, with an ultimate end-state of bill-and-keep where providers do not charge an originating carrier for terminating traffic but instead recover costs from their own customers.

The NPRM portion of the FCC's order seeks comment on a number of topics including ways the FCC can encourage

IP-to-IP interconnection. Initially, the FCC reiterates that the duty to negotiate in good faith does not depend on the underlying network technology. The NPRM requests comment on the scope of any IP-to-IP interconnection policy framework, whether the framework should be limited to the exchange of voice traffic or if it should cover other types of traffic, the statutory authority it has to impose an IP-IP interconnection mandate, and other related topics. The NPRM also signals the FCC's concerns about overlap with the backbone market as it suggests that its framework should be "narrowly tailored to avoid intervention in areas where the marketplace will operate efficiently." Finally, the NPRM proposes that if a carrier has deployed an

IP network and receives a request for IP-to-IP interconnection but instead mandates use of TDM, that carrier must bear the costs of conversion from IP to TDM and asks for comments on how such a requirement should be implemented.

This far-reaching proceeding will be significant to VoIP providers and others that operate IP networks. Through this proceeding the FCC may significantly alter the regulatory and financial obligations of IP network providers and users for years to come.

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

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By Alan Murphy



## Connecting Hybrid Clouds with Cloud Gateways

Last issue, I wrote about solutions that are available today to interconnect an off-premises cloud deployment with an on-premises data center. For the most part, every cloud provider offers some type of connectivity solution, either in the form of a long-term or permanent tunneled connection (possibly using one of the platform solutions I mentioned last time such as VMware's vCloud Connector) or as temporary links to copy and/or upload data required for applications in the cloud – think of your most basic HTTP/FTP uploader here, and many cloud providers are still offering these basic solutions. Cloud providers have to offer some way to accept customer data over an interconnect solution, but the level of sophistication can, and does, vary widely between providers. This month, I'd like to dig into how moving to more advanced cloud gateways can help bring out the true power of cloud computing, especially in a hybrid world.

Hybrid clouds are a combination of services spread between an on-premises cloud environment and an off-premises cloud. The services can be split by function – an isolated part of

the application runs off premises but the rest of the app runs on premises – or by architecture: computation or analytics are done on the data in the cloud but the user interaction is managed on-premises – or even dynamically scaled to the off-premises environment as needed. Dynamic scale is usually the example we use when talking about hybrid cloud computing because it's the most interesting to the business: using the cloud only when needed but maintaining control on premises is the best of both worlds.

A dynamically scalable hybrid cloud can be further broken down into two additional categories: cloud bursting, the really juicy cloud use case, and disaster avoidance, a combination of disaster recover, business continuity, and dynamic scale enabled by virtualization and cloud computing. Although they're both hybrid models that involve dynamically redirecting users and services between on and off premises, cloud bursting and disaster avoidance are different in their design. Cloud bursting is about bringing up services in the cloud as needed, bringing them back down when not needed, and managing user access between the two environments. Disaster avoidance is typically a longer-term solution that involves keeping multiple cloud environments cloned and ready to go when one becomes unavailable. The distinction between these two types of hybrid

cloud computing comes into play when you start looking at cloud gateway devices.

Historically, cloud gateways were known as cloud bridges because they bridged – in both general and IT-architectural terms – the on- and off-premises data centers. This term was a bit of a red herring, however; not every cloud bridge was an actual layer 2 network bridge. But some were, and those real bridges tended to be highly specialized and came with limitations, such as single vendor solutions and distance restrictions – a layer 2 bridge can only travel so far. The technical limitations eventually affected the terminology limitations and newer, more sophisticated cloud bridges rapidly became known as cloud gateways, a very apt term given all that can be done with a cloud gateway.

Cloud gateways go beyond simple network connectivity and can provide many network-related features that are missing from most off-premises cloud deployments. Cloud gateways can optimize WAN links, exchange information with the cloud provider such as resource metrics, and can even man-

age user security such as on-premises authentication and authorization. The two different hybrid computing models – cloud bursting and disaster avoidance – benefit from cloud gateways in different ways. In order for

cloud bursting to be truly successful, the off-premises environment needs to be treated as a logical extension of the local data center. Tools that manage cloud bursting events – such as application delivery controllers – need to see the cloud as an available resources pool for the application that's bursting. A permanent cloud gateway that maintains a secure and optimized WAN connection is ideal for cloud bursting because it basically becomes a long-distance LAN, and applications in the cloud become true extensions of the applications in the local data center. Cloud gateways can also help create and manage cloud environments for disaster avoidance by providing optimized connectivity to the cloud provider for moving virtual machines, large data sets, and for keeping data synchronized between the two locations.

Down the road there are some really interesting things that we'll be able to do with cloud gateways, such as dynamically creating WAN connections between providers, but for now we can be happy sticking with what cloud gateways can do for us today. These advanced connectivity and network management solutions aren't available with traditional cloud bridges; you need a cloud gateway to truly extend the data center reach into the cloud.

*Alan Murphy is technical marketing manager of management and virtualization solutions with F5 Networks ([www.f5.com](http://www.f5.com)).*

**Moving to more advanced cloud gateways can help bring out the true power of cloud computing, especially in a hybrid world.**

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By Hunter Newby



## Bringing to Light the Benefits of Germany's Dark Fiber Supply

Most countries in the world have figured out that an open, neutral dark fiber network is the essential basis of fairness for all network operators, and therefore the economic growth of the country itself. Many countries have only recently discovered this key to increasing their gross domestic product, but Germany is one country that has had the benefit of an independent dark fiber provider for more than 15 years. That provider is GasLINE.

From their website:

"GasLINE GmbH & Co. KG was established in 1996 by 15 German gas transmission and regional distribution companies. It has a Germany-wide integrated fibre-optic cable network, offering dark fibre capacity to national and international telecommunication companies.

"The cables which, for safety reasons, are usually installed in the rights of way of gas pipelines, connect the telecommunication hubs of all major cities. The GasLINE network presently comprises more than 9,500 km of fibre-optic cable. It is gradually expanded in line with customer needs and specifications. In more than 100 cities, the GasLINE cable network connects to telehouses and so-called points of presence.

"GasLINE's flexibility and customer dedication make it the ideal service provider for telecommunication companies. More than 100 national and international carriers are satisfied GasLINE customers."

Aside from the fact that they spell fiber as fibre, everything else is fairly standard yet quite exceptional. GasLINE uses the natural gas utility rights of way to get around Germany, which is a key to their success. They sell dark fiber within Germany to more than 100 customers from Germany and abroad, and they invest in the expansion of their dark fiber network in more than 100 cities as demand dictates. What is important to note is that just because they already have fiber in the ground does not constitute a glut of fiber everywhere, as evidenced by the new builds that they themselves do.

Most, if not all, carriers that have and will enter Germany take GasLINE for granted. It is the only carrier-neutral dark fiber system of its kind in Germany, so imagine what the country would be like if it did not exist. Would all of those 100-plus carriers get around so easily and cost effectively? Just look at any one of the dozens of countries around the world that do not have such a neutral system, but desire one and notice the

differences, specifically in GDP. The benefits are easy to see.

In addition to offering dark fiber, GasLINE also provides associated carrier-neutral co-location in facilities that they own all along the route. This is a subtle and seemingly unnoticed component of their business, but is another one of the keys to their success. If not for the carrier-neutral GasLINE real estate, where would the 100-plus carriers place their networking equipment? The cost to any one network operator that uses the GasLINE dark fiber and co-location facilities to try and build all that GasLINE has in place is so high that it makes it impossible to consider.

In addition to the stated physical layer products that the company offers the most obvious and additional key to their success is that their dark fiber is built directly into the main telehouses (carrier hotels and, or data centers) in the country. This is incredibly important because all networks generally

**[Another] obvious and additional key to their success is that their dark fiber is built directly into the main telehouses (carrier hotels and, or data centers) in the country.**

need to connect to others at some point, and any fiber route that lacks access to common network interconnection points has a significantly decreased value as a result.

Similarly, access to the fiber at mid-points along the route provides additional benefit not only to those in the mid-points, but also those on the endpoints in the telehouses. Although this may seem completely logical, it is astonishing how many networks are not built this way and therefore how many countries lack such beneficial network access.

GasLINE was originally built to serve the purpose of managing the 15 separate natural gas companies and their transmission and distribution. The fiber was placed in duct along the pipelines and then used to monitor and control the gas flow. The additional fiber was made available to carriers for the purposes of them lighting their own networks throughout Germany. The master plan was not necessarily for a nationwide, carrier-neutral dark fiber network, but the end result was and is an amazing and essential business and resource for the entire country.

*Hunter Newby is CEO of Allied Fiber ([www.alliedfiber.com](http://www.alliedfiber.com)).*



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YOUR NETWORK. OUR CONNECTION.

# Telx Helps Companies Make All the Right Connections

No man is an island. The same can be said about a network. Networks are useful only to the extent to which they can enable us to connect successfully, securely and reliably with other networks, people and applications. Telx is in the business of enabling service providers, businesses and other organizations to make these connections.

## Back Story

Telx got its start more than a decade ago when it launched business as a carrier-neutral interconnection provider out of the well-known New York carrier hotel at 60 Hudson.

At that point, there were only a couple carriers that used the Telx service, which provided them with the needed facilities to connect to each other directly. Carrier demand for this kind of thing has grown over time, of course, and Telx has responded, first by buying a building in Atlanta at 56 Marietta St. at which to offer neutral interconnect services, co-location, and power.

CEO Eric Shepcaro refers to this time in the company's life, when it was supporting voice and TDM traffic for a heavily global carrier clientele, as Telx 1.0.

By the end of 2006/early 2007 Telx was offering its services in a dozen facilities in key U.S. cities, and it had begun providing more traditional co-location data services. Now under new ownership, the company expanded its customer base beyond just carriers and ISPs to also serve businesses and many entities seeking a higher level of application performance, lower latency connections, and the ability to connect with others within their communities of interest. Today, Telx's business with service provider customers continues to grow rapidly, but its growth with enterprise, financial services, cloud and content customers is growing even faster, says Shepcaro.

By 2007-08 Telx had 15 data centers, more of its customers' traffic was IP-oriented, and the industry had experienced a clear shift to data center outsourcing, says Shepcaro. This was the time of Telx 2.0.

## Real Time

Today's Telx is version 3.0.

Hallmarks of this include new ownership, continued expansion, and positioning to address the rise of cloud computing.

Telx, which ABRY Partners and Berkshire Partners took ownership of in September, now provides service out of 17 locations. It announced very large expansions in Atlanta; Clifton, N.J.; and Santa Clara, Calif., this year. And its facilities are now branded C3 Cloud Connection Centers.

Everything the company does starts with interconnection, says Shepcaro. That includes providing Direct Connect offerings featuring dedicated physical connectivity leveraging fiber, Ethernet and/or TDM. Telx's Dynamic Connect solutions allow for virtual, multipoint connectivity and support SDH to SONET, scalable Ethernet, converged services/CoS, and integration with legacy traffic. Customers that need in-region connections can use Telx's Network Connect solutions, which are available in point to point, wave, Ethernet, and OCR and fiber channel configurations. And Telx's Internet Connect features dedicated Internet, peering, global IP access, and IP addressing.

With those interconnection offers come space in cabinets, cages, and customized suites; power, which can be fully redundant; tech support services; and various managed and cloud-based services that Telx offers through its wide array of customers/partners.

## Placement and Partners

Telx prides itself on having what it says are the most strategically placed data centers for reaching the world's best networks and cloud providers. (See list of locations, next page.)

"When you look to outsource a portion, or all, of your data center, don't underestimate the importance of both the network outside the data center and inside the data center," Shepcaro says.

Indeed, customers at Telx's 17 facilities put customers one cross-connect away from the world's top-tier domestic and international telecom providers as well as other service providers, content providers, peering exchanges, ISPs, VoIP providers, Internet exchanges, gaming companies, enterprises, and educational institutions.

The company refers to this community of customers as the Telx Global Marketplace. Through this marketplace, Telx explains, customers at its locations can connect with others at the sites to develop business partnerships that can enable them to reach new customers and tap into new markets. The marketplace also helps Telx customers identify diverse service providers should they want to increase redundancy.

JustinTV is one Telx customer taking advantage of this plum position.

"The Internet is the newest publishing house for content produced worldwide, and consumers expect a high-quality experience every time they interact with online media technologies," says Michael Siebel, CEO of JustinTV. "As the top live online video community, with engaged users watching streaming video, we must continue to give our customers the most valuable experience possible with minimal viewing disruption. By colocating our servers with Telx, we have the ability to connect directly to the widest number of carriers available in the market today and ensure maximum uptime for our service."

To allow its customers to quickly and easily make those connections, the company provides CBX Online. This is a dynamic online tool that customers can use to foster new business relationships, self-provision interconnects in real time, as well as to keep track of their on-site inventory, such as cross-connects and the available ports on them.

### Creating Community

As part of its efforts to enable customers to connect easily with others, Telx has created communities of interest for those in the carrier, cloud, financial and media categories.

Trading Continuity Services, which provides data protection and disaster recovery/business continuity solutions, is among the members of the Financial Xchange. By taking residence in Telx's data center in downtown Chicago, TCS can more easily offer its services to outfits in the financial vertical.

"We give trading firms a competitive advantage by delivering an end-to-end, fully managed data protection and back-up solution that ensures high availability for the best electronic trading experience possible," says Jim McDonough, managing partner at TCS. "Telx's Chicago data center is one of the most important financial services addresses in the country, and as a member of the Financial Xchange, TCS can now offer these customers our 24/7 back-up solutions through a simple cross-connect."

Info-Tech Research Group's Vendor Landscape report says Telx's "sweet spot" is with financial institutions and other organizations located in urban markets and requiring close proximity to networks and communities of interest.

### Cloud and Wireless

But Telx is pushing its messaging around wireless and cloud computing (which target all types of customers) pretty hard these days as well.

That's no surprise given the enormous buzz, growth and potential related to these categories. NPD In-Stat in January said the installed base of connected devices is expected to go from 256.8 million in 2011 to 1.34 billion in 2016, which will of course continue to drive new cellular network investments. And the global cloud computing market is forecast to see a 30 percent compound annual growth rate, reaching \$270 billion in 2020, according to Market Research Media.

Data center businesses increasingly are including cloud IaaS options in their spectrum of services, as noted by Info-Tech Research Group. "Many have been replacing their traditional colocation offerings with cloud alternatives," according to the firm. "Customers must consider vendors that offer the full spectrum of services that they may need over the course of the engagement so they can evolve in their relationship with the vendor."

Telx isn't replacing its colocation offerings, but it is adding to them with various services and capabilities through strategic partnerships, many of which address the move to the cloud.

"The value Telx brings to its customers resides not only within our world class data centers located in the heart of strategic markets, but also within our company's ability to provide new con-

nectivity innovations – such as our Cloud Xchange – to better serve the changing needs of our customer base," says Shepcaro.

Appcore is a recent addition to the Telx Cloud Xchange. Through this strategic alliance, Telx can now provide its more than 1,000 colocation customers across its 17 C3 Cloud Connection Centers with direct, dedicated access to Appcore's turnkey private hosted cloud solution.

### What's Next

Telx this fall was named in the Inc. 5000 as one of the nation's fastest growing private companies, coming in at 1,711. In an effort to continue its top-line growth, which Shepcaro says has been increasing more than 30 percent year over year, Telx will continue to expand both its footprint and its portfolio.

On the data center side, Telx is looking forward to core expansions of both existing and new facilities in the U.S. and abroad. Significant news on this front is expected as early as the second quarter.

The company, which has more than 37,000 cross-connects installed, also will add to its product portfolio later this year. Expect to see from Telx new network optimization and packet optical system capabilities to allow for traffic prioritization and more efficient self provisioning, says Shepcaro. The company also expects to expand on its EtherConnect portfolio, which it introduced in 2011 and now has more than 75 customers, in the next year or two.

And, Shepcaro tells INTERNET TELEPHONY, Telx continues to look at how it can continue to enable robust services related to the cloud.

### Telx Locations

56 Marietta St. in Atlanta  
113 N. Myers St. in Charlotte  
350 E. Cermak Road in Chicago  
600 S. Federal St. in Chicago  
8435 Stemmons Freeway in Dallas  
2323 Bryan Street in Dallas  
600 W. 7th St. in Los Angeles  
36 N.E 2nd St. in Miami  
2 Peekay Drive in New Jersey – Coming Fall 2012  
300 Boulevard East in New Jersey  
100 Delawanna Ave. in New Jersey  
60 Hudson St. in New York City  
111 Eighth Ave. in New York City  
120 E. Van Buren St. in Phoenix  
200 Paul Ave. in San Francisco  
1100 Space Park Drive in Santa Clara  
2820 Northwestern Pkwy in Santa Clara

[Telx also offers services at global locations via partnerships with Tata and Interxion]



# Plixer Brings Concentrated Focus to NetFlow Reporting and Analysis

When it comes to the heart, most folks go to a specialist to address what ails them. When it comes to the network, tapping a specialist is also the ideal prescription.

That's the word from Plixer International Inc., which provides NetFlow solutions.

"Plixer focuses on NetFlow, IPFIX and all other types of flow reporting and analysis," says Michael Patterson, Scrutinizer product manager for and founder of Plixer International. "We are a pure play in this market. We are not a jack of all trades like SolarWinds and CA. We only want to be in the flow reporting market."

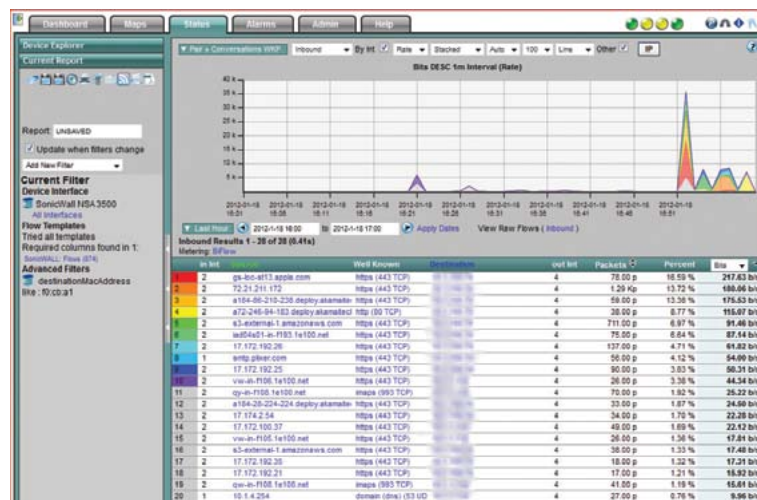
The company's Scrutinizer software helps organizations monitor their network traffic to identify individuals who are using an abnormally large amount of bandwidth. That enables network administrators to adjust the network privileges of those users as needed, and in the process ensure there's adequate bandwidth to run business applications.

Scrutinizer's domain utilization report can even provide insight related to connections to sites like Amazon.com and BestBuy that use encrypted traffic. Plixer notes this capability is especially important for businesses during the holiday shopping season, when many employees may use work time to make non-work-related purchases online.

But with all the smartphones on the networks these days, Patterson says, there is a tremendous amount of personal traffic on corporate networks year round. The company's software allows organizations to track that, so they know how much traffic is going to what applications – like, for example, Facebook. Employers typically want to do that for two reasons. First, because having employees visiting non-work-related websites during work hours is a distraction. And second, because most smartphones don't have anti-virus software on them, so they could infect corporate Wi-Fi networks.

To protect against viruses and the like, Plixer technology uses algorithms that constantly run against the flows from routers and look for phones that are acting in a suspicious manner or are scanning the network. Also, Scrutinizer has a current list of known Internet threats, so users of the software can see if devices on the corporate network are communicating with those threat sources, explains Patterson.

The company at Cisco Live in late January announced the availability of Scrutinizer 9.0, for which it provided a live demo at the event that involved the solution streaming and analyzing real-time NetFlow data collected from Cisco Live's network.



Scrutinizer v9 identifies an idle smartphone

New features delivered through Scrutinizer 9.0 include a high-performance Linux appliance that collects over 100,000 flows per second; new Cisco Advanced NetFlow reports that provide in-depth network traffic visibility including Smart Logging and Telemetry, Cisco TrustSec, Performance Routing and Performance monitoring (Medianet); advanced Citrix NetScaler reports detailing URLs, applications and latency; advanced SonicWALL VPN reports identifying VPN names as well as remote and local addresses; and CrossCheck to provide deeper integration with third-party tools (What's Up Gold, Orion, SNMPc, Uptime Devices, Nimsoft, etc.).

Scrutinizer NetFlow & sFlow traffic analysis and IPFIX reporting solutions address all types and versions of flow analysis including, but not limited, to:

- Cisco routers and switches, Cisco ASA NetFlow
- Juniper Jflow and Juniper IPFIX
- SonicWALL NetFlow and SonicWALL IPFIX
- Check Point NetFlow
- Vyatta NetFlow
- nBox NetFlow and nBox IPFIX
- Riverbed NetFlow
- ADTRAN NetFlow
- Enterasys Netflow
- Citrix AppFlow
- vSphere NetFlow
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Mike Patterson

"We have used Scrutinizer on multiple troubleshooting opportunities

to isolate what type of traffic was causing the heavy utilization and also what offending devices were doing it. Scrutinizer has more than lived up to its expectations," says a source from Plexier customer Pension Benefit Guaranty Corp.

Plexier has a lengthy list of customers – many of them very large entities – from a variety of verticals including education, financial services, government, health care, manufacturing, media, retail, services, technology, transportation, and the utilities. Patterson says the average spend of its customers, which include a few thousand organizations, is around \$10,000.

The company's technology is available in a software-only format or as an

appliance. Plexier delivers its solutions primarily through direct sales channels in the U.S., but abroad the channel (including LogicVein Inc. in Asia, Teneo of the U.K., and a wide variety of other systems integrators and value-added resellers around the world) is its main method of distribution.

Patterson founded Plexier several years ago, after having worked at Cabletron Systems and then offering consulting services for network management solutions involving open source. Over time he added more support people and a full time sales person to support his enterprise, which was initially named Somix and later (with a change in ownership) to Plexier. The privately-held company, which has been profitable since its first year of business, now has 28 employees.

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# Peeling the Onion

## Cloud Drives Interest in Content-Aware Security

In the movie Shrek, the title character says that ogres are like onions – in that they have layers. Turns out security and ogres have something in common.

All security has layers like an onion, says Jim Reno, security architect and distinguished engineer for CA Technologies. There's the security of the device through solutions such as anti-virus and anti-malware software; identity authentication to services like cloud applications; and security at the data center of the data itself, he says.

One of the layers of security that is getting a fair amount of attention these days, Reno adds, is application security as it relates to cloud computing. The rise of cloud computing means more data from individuals and organizations is "out there," Reno notes, so there's an obvious need to ensure the security of that data, while at the same time enabling the data to be

accessed by authorized third parties. For example, he says, a person who uses a cloud-based service for photo sharing might want to employ the service to both share pictures with select friends and family, and possibly even allow a photo printing business access to photos the person wants to have printed. That kind of access model, Reno continues, is a good match for the kind of content-aware security solutions provided by CA Technologies.

The company sells its security software via two models. Customer can run the software themselves, or CA Technologies can provide the security as a cloud service. The company offers a wide breadth of security solutions, including identity management (for authenticating users, managing users and their identities), federation services (applying identity so you can use it to access across multiple sites or providers), access management, and more.



# Web 2.0, Mobile Boom Create New Security Challenges

**Y**ou've probably heard the now-popular refrain about how while many folks are very comfortable sharing many details of personal their lives online, these same people have a high level of expectation relative to the security of their personal and professional information. What they may not know is that Web 2.0 and the rise of the bring-your-own-device trend make it easier than ever for criminals to penetrate the sanctity of our personal and professional content and networks.

While criminals used to send online denizens executable links in an effort to create high-tech havoc, Web 2.0 makes it easier for them to do as "drive-by downloads," says Scott Emo, head of software blade product marketing at Check Point, whose

Application Control Software Blade allows companies to identify, allow, block or limit usage of thousands of applications by a user or a group. A drive-by download involves spreading infection by simply waiting for people go to a link, such as a Facebook post, he says.

This is not only a problem for individuals. It also creates new challenges for organizations given a growing number of workers are tapping into Wi-Fi networks at their places of businesses.

And a new study from Check Point and Dimensional Research shows just how widespread that challenge may be. (See accompanying data.)

"It kind of nails down what we've been seeing all along," Emo says of the study, a global survey of 768 IT professionals in Canada, Germany, Japan, the U.K., and the U.S.

## Key Findings

Extensive use of mobile devices connecting to corporate networks

- 89 percent of those surveyed have mobile devices such as smartphones or tablets connecting to corporate networks.
- Apple iOS is the most common mobile platform used to connect in corporate environments.

Personal mobile devices that connect to corporate networks are extensive and growing

- 65 percent of those surveyed allow personal devices to connect to corporate networks.
- 78 percent say there are more than twice as many personal devices connecting to corporate networks now than compared to two years ago.

Security risks are on the rise because of mobile devices

- 71 percent say mobile devices have contributed to increased security incidents.
- The Android mobile platform is considered to introduce the greatest security risks.

Employee behavior impacts security of mobile data

- 47 percent report customer data is stored on mobile devices.
- Lack of employee awareness about security policies is ranked as having the greatest impact on the security of mobile data.
- 72 percent say careless employees are a greater security threat than hackers.

*Source: Dimensional Research*





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# WatchDox CEO Emphasizes Need to Secure Documents in the Age of Mobility

The bring-your-own-device trend in the work world is now very well understood. But that's not to say that businesses have fully come to terms with it. Indeed, as more employees carry work data with them on their mobile devices, and high-profile security breaches continue to remind us of the vulnerability of our networks and devices, companies are paying more attention to the need to secure important documents on the go, regardless of the user's location and device. But just how to do that remains a question mark for many organizations. INTERNET TELEPHONY recently spoke with WatchDox CEO Moti Rafalin about the challenges and solutions on this front.

## Who is WatchDox and how and when did it get its start?

Rafalin: WatchDox was founded in 2007. The company's founders had been working in business development and product management positions in various companies and had incidents of potential clients or partners forwarding specs and restricted design materials of coming products to competitors. We simply had a need for a light solution to these problems that could be implemented immediately and was easy to use – but we couldn't find any. All the available solutions were cumbersome digital rights management products that were too costly and had too many limitations that didn't fit external sharing (installations, passwords, heavy infrastructure). Additionally, as is becoming even more clear now, DRM products did not address mobile device needs. We started asking ourselves how big is this need, and we found that many people in organizations similar to ours would use a product providing document protection, tracking and control if and only if it were easy to use.

## What's your background and the experience of the other key WatchDox execs?

Rafalin: WatchDox is led by a strong team with many years of experience in enterprise software and security. [I have] an extensive background in enterprise software from [my] time at EMC, where [I] was a general manager of a software business unit. Noam Livant, co-founder and vice president of product, is a veteran of RSA's Cyota and has deep knowledge of authentication and SaaS. Adi Ruppin, chief technology officer, was founder and CEO of SofaWare, an Internet security company acquired by Check Point. He was also a founding member of BeInSync, an online backup and synchronization company acquired by

Phoenix Technologies. Ryan Kalember, chief marketing officer, brings years of experience in a variety of roles in the U.S., Europe, the Middle East and Africa. Ryan has an extensive background in information security including stints at HP, ArcSight and VeriSign. He also co-founded two security start-ups, one that was acquired and another that was contributed to the open source community. Tom Aitchison, executive vice president of sales, served as the executive vice president of worldwide sales at In-Quira. Prior to that he was senior vice president of sales at Comergent Technologies, where strong growth and results lead to acquisition by Sterling Commerce/ATT and where Tom subsequently lead a team of 400 employees for North American field operations at Sterling Commerce ATT. Tom served as the general manager and vice president, sales for webMethods and held vice president-level sales roles at Kinzan, Live Picture and McAfee.

WatchDox investors and board of directors include prominent industry figures. Chairman Shlomo Kramer co-founded Check Point (the inventor of the firewall) and is founder and CEO of Imperva, a leading data security company. The board also includes Daniel Cohen, partner at Gemini Israel Funds, a leading venture capital firm, and Dave Berman, often referred to as the third founder of WebEx.

## What specifically does WatchDox sell?

Rafalin: WatchDox technology establishes a new paradigm in securing organizations' most important assets – their documents. The proliferation of tablets and smartphones, along with increased sharing and collaboration, means that sensitive documents may be anywhere and on any device, putting highly sensitive and regulated information at serious risk. WatchDox has developed new document-centric security technology that allows organizations to control their documents, wherever they go, on any tablet, smartphone or PC (managed or not). Deployed as a cloud service or as an on-premises appliance, WatchDox gives enterprises the power to restrict users from downloading, copying, printing or forwarding documents. It also provides granular tracking and audit trails with the ability to destroy documents remotely – even after they have been downloaded.

## What makes it unique?

Rafalin: WatchDox is designed with ease of use as a primary consideration. To further ensure successful deployment and adoption, WatchDox seamlessly integrates into enterprise systems and applications like SharePoint and salesforce.com, making WatchDox the rare security measure that enables users to be more productive. By contrast, legacy security solutions have



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failed to adapt to today's collaborative and mobile world; they are unable to secure documents once they have been downloaded onto a mobile device or once they have gone beyond the firewall. Mobile device management solutions are device-centric and do not address the security of specific documents stored on these mobile devices. Additionally, these solutions are not effective when it comes to the growing bring-your-own-device trend and are incapable of securing collaboration with any third-party non-managed devices. In addition to simply securing documents, WatchDox provides a platform for securely accessing, viewing and collaborating on documents across tablets, smartphones and PCs. The platform enables a wide variety of solutions, from secure board and

executive communications and virtual data rooms to secure investor communications. WatchDox also integrates with enterprise systems to add seamless protection and control to documents residing on those systems.

#### Who is your target customer?

Rafalin: WatchDox currently services more than 15,000 companies. Key markets include financial services (banks, private equity, alternative asset management), pharmaceuticals and health care, and government.

#### How many customers or seats does WatchDox serve today?

Rafalin: WatchDox is used by hundreds of thousands of end users.

#### Study: Service Providers are Ready to Spend on Security

Infonetics Research's recent study "Service Provider Security Drivers, Spending, and Vendor Leadership: Global Survey" indicates there's a thirst by service providers for holistic security solutions. "The security market is ripe for a product manufacturer to come out with an end-to-end security story for service providers, offering solutions embedded into network elements, standalone security products for transport networks and the data center, and client solutions service providers can deliver for differentiation (or even monetizing)," says Jeff Wilson, principal analyst of security at the firm. Infonetics says that nearly every service provider it interviewed for the study expects to increase its security spending over the next year, in absolute dollars and as a percent of capex. And it explains that the biggest drivers for service providers to deploy new security solutions are protection of customer data, network uptime, changes in the data center, and the increasing number and complexity of security threats.

#### New Platform Enables Service Provider Network Analysis

Kindsight recently launched a new platform for service providers to analyze network traffic for malware and aggregate security statistics onto a single web-based dashboard. Kindsight Security Analytics offers insight into subscriber infections, enabling Internet service providers and mobile operators to reduce risk within the network and diminish the malicious consumption of network resources. That's important, notes Kindsight, given approximately nine to 14 percent of home networks are infected on a typical day and mobile malware is on the rise, having increased 400 percent over a three month period in late 2011. Kindsight is majority owned by Alcatel-Lucent.

#### Report Illustrates Benefits of NetFlow Tools

A report entitled, "The State of NetFlow: Advancing Security and Performance through Network Visibility" from Lancop Inc., says IT consumerization, virtualization, streaming video, advanced persistent threats, IPv6 and user mobility are causing IT administrators to lose visibility into their increasingly complex enterprise networks. And it suggests they should leverage NetFlow

and other types of flow data from their existing infrastructure to cost-effectively achieve more comprehensive, in-depth monitoring and protection; faster and more streamlined troubleshooting; vast savings of time, cost and resources; protection from internal and external threats; support for forensic investigations; better compliance with industry regulations; and visibility into next-generation architectures including 10G, MPLS, IPv6 and virtualized networks. Indeed, Dartmouth College reduced its incident analysis process from weeks to minutes and decreased network threats by 90 percent, according to the report. Meanwhile, Lancop says, flow data enabled the Puget Sound Blood Center to retain the \$22,680 it was typically losing for each hour of downtime. The full report is available at: <http://www.lancop.com/resource-center/industry-reports/state-of-netflow/>.

#### F5: HTML5 Creates New Security Challenges

Lori MacVittie, senior technical marketing manager with F5 Networks, says the connection between web application security and the security of consumer devices and data should not be overlooked. "Looking ahead to 2012, it is almost certainly the case that the cycle will gain even more traction as organizations adopt HTML5 as the standard for web application development," she comments. "The standard's expanded capabilities to communicate with both devices and sites provide new opportunities for attackers to exploit both traditional vulnerabilities as well as newly discovered ones. The expansion of the client environment opens up more opportunity for attackers to take advantage of consumers and use their resources and reach to execute attacks of various designs." And she suggests that web application providers need to increase their own security, ensuring they have addressed the top vulnerabilities through which attackers plant attack code or are directly able to access systems and data. "Consumer web security is increasingly tied to web application security – and vice-versa," she continues. "As the trend continues, it behooves organizations to do what they are able to interrupt the cycle of infection and distribution, and in the process reduce both their own risk and that of their visitors and end users."



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By Peter Radizeski



## Hosted vs. Premises: Sales Scenario 1

If you want to venture down the path of the trusted advisor, then you have to get better at the questions that you ask your prospects.

What would you do if your prospect had a premises PBX that was out of contract? Her PRI and Internet T1 are with different providers with differing contract terms and separate end dates. She has heard from colleagues that she should be looking at a hosted PBX for her 99-employee company, where 60 employees are mobile or remote and the rest work at the office. The productivity gains and cost savings are making her talk to you. Where do you start?

What question do you ask her to get the ball rolling? How about "What do you like about your current system?" or "What do you not like about your current system?" or "If you could design your own what would it do?" You had better have a notepad and pen at this point because these will be the basis for your proposal.

She may not even know what is possible or what a PBX can or should do. As the advisor, you need a general idea

of the features available for PBX systems. A checklist of these features can be carried with you so that you can make suggestions and mark down what she might like.

There are hundreds of providers of hosted and premises PBX solutions. It's not possible to know everything that is available – or to shop it around to most vendors. You will learn as you gain experience, but if you know the highlights that your prospect has to have, you can use that to eliminate vendors to narrow it down to the few that will indeed work.

As the advisor, your job is to funnel it down to a couple of proposals. This is accomplished by asking both the prospect and the vendors a lot of pointed questions. This will come with time and experience too, but if you aren't in the swing of asking questions, this is a good time to practice.

Look for more on this scenario next month and in my blog.

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



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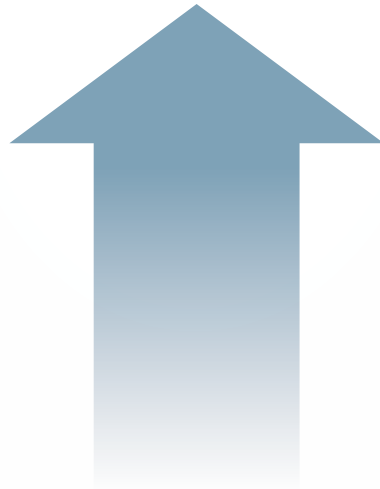
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# What's on Tap at PlanetOne

## Master Agent Delivers Savings in a Tough Economy

**P**lanetOne Communications has been named to the Inc. 5000 list and won acclaim for snagging the business of some major customers. But I'll always think of the master agent as the little joint down the street with Jagermeister on tap.

With an opening line like that, this story may raise more questions than it answers. But one thing I can report is that when you enter PlanetOne headquarters, which I recently discovered is very close to my home office in Scottsdale, Ariz., the first thing you notice is the tap machine at the company's reception desk. Ted Schuman, PlanetOne's founder and CEO, said he got the idea for the tap a decade ago when he saw one while on a ski trip in Austria.

"It's there all the time," he says. "It's become more famous than I am. It is the center of many Friday meetings."

The tap machine has been the hub of PlanetOne meetings for more than two decades.

Schuman decided to get into the master agent business years ago when he was working for service provider Allnet Communications. The idea took root when an agent, wearing shorts and flip flops, walked into the Allnet office and asked Schuman for his monthly check, which totaled \$15,000. Schuman, who at the time made \$100,000 a year as a No. 1 manager for Allnet, had an epiphany. Shortly after that, he launched PlanetOne with a credit line, matching funds from his folks, and the green light from his fiancé (now wife).

Starting with a simple model that involved selling long-distance, and placing and receiving orders through the mail, it took three years to make PlanetOne into a profitable business. Not surprisingly, the company has evolved significantly over the years in terms of its customer base, finances, internal processes and product portfolio.

Today, PlanetOne's bread and butter is broadband connectivity, ranging from MPLS on the high end to integrated access on the lower end, which it offers through partnerships with a wide range of carriers. The company also sells hosted VoIP and hosted Exchange through its relationships with Broadview, CenturyLink, Telesphere and PAETEC (now part of Windstream).

PlanetOne employs a team of experts in the areas of engineering, project management, and account services. The company's average employee has 15 years of telecom experience, and most of them come from the carriers. And Schuman is proud



Ted Schuman

to report that most of the management of PlanetOne's 9,000 commercial accounts is done online, as opposed to on paper.

"It's a real business today," he says, noting that PlanetOne has about \$60 million in annual telecom revenues coming through the agency.

About 1,000 agents across country have partnered with PlanetOne, which with its preferred vendors stages about 10 events in various U.S. cities each year to educate and network with these agents.

"PlanetOne, Ted Schuman and the entire team are by far the best support group we have experienced in my career over 20 years," says Michael J. Howard, president of Advanced Business Communications Inc. "Ted protects the sub-agents and doesn't mince words in doing so. I am so pleased we rolled up under the PlanetOne umbrella 10 years ago. We can concentrate on selling and retention and not worry about fickle carriers and Swiss cheese agreements that put our livelihood at risk with every passing year."

Steve McDonald, president of Global Fiber & Data, comments: "By being easy to do business with, existing and prospective new agents to PlanetOne can enjoy greater sales impact to their client base because they will spend more time interacting with



clients and less time on admin or office work (chasing orders, chasing quotes, etc.), which bogs down the sales machine for any partnering agency. In my case, I know this unique PlanetOne efficiency allowed me to actually put up bigger sales figures than I expected in a relatively short time frame.”

PlanetOne sells exclusively to business customers, who have an average monthly spend of \$1,800. More than 90 percent of PlanetOne sales are very solutions driven and involve the master agent partnering with agents in the field, explains Schuman.

“I’m very bullish right now,” adds Schuman. “We just had our best year ever.”

Companies are looking for ways to reduce their overhead, so the PlanetOne model – which involves selling services based on partnerships with several service providers around the globe, thus enabling the master agent’s sales people to offer their customers the best deal – makes sense in this economy, he continues.

“Our business model has thrived in a down market more than in an up market,” Schuman notes. PlanetOne’s monthly attrition is less than 1 percent even in a down market, he adds, which he says is remarkable considering the rate of business closures and business challenges.

To further help business customers manage their communications costs, PlanetOne by the end of this month had expected to introduce telecom expense management tools from Pinnacle Software to its agent partners.

PlanetOne also has dabbled in selling ShoreTel equipment in addition to services. But Schuman says that effort has met with only modest success.

“I don’t know how much longer we’re going to continue down the hardware path,” he says.

“I look at hardware as a fringe product,” Schuman adds, and one that doesn’t offer residuals.

Schuman is similarly unimpressed with the prospects for growth via acquisition.

“I’m very content with our organic growth, and the numbers we’re putting up,” he says.

There are something like 5,000 agents nationally, which means PlanetOne is clearly in the top five, and its numbers are as good as anybody’s in the country, he says.

“I’m not sure I feel the need or urgency to tinker much with the model,” he adds.



The PlanetOne reception area

# Talking with Vivek Ragavan

## Actelis Leader Explains How Company is Helping Close the Digital Divide

It's well understood that broadband is playing a key role in enabling many of us to expand our access to content, and to each other. But not everybody has equal access to broadband. However, Actelis Networks provides solutions to help bridge the digital divide. Vivek Ragavan, president and CEO of Actelis, recently spoke with INTERNET TELEPHONY about the company, its customers and products, and the state of broadband today.

### What's your background and how are you applying that experience at Actelis?

Ragavan: I've worked in the telecommunications industry for 30 years. During this period, I've worked for and helped found a number of industry-leading companies, including General Instrument (now part of Motorola), ADC Telecommunications (now part of Tyco Electronics), Siara Systems/Redback Networks (now part of Ericsson) and Atrica (now part of Nokia Siemens Networks), all of which focused on developing technological advances in broadband access, but in different layers of the stack. I would characterize my career as always being involved in leveraging the latest technology to accelerate broadband adoption, and that is exactly what Actelis' mission has always been, so it was a natural fit when I joined the company in the spring of 2009. During this time, I've employed my past experience and success in growing various businesses, executing their successful exit strategies, and delivering exceptional shareholder value to guide and accelerate Actelis' business in universal broadband for both enterprise and residential markets. Subsequently, we've successfully grown the business year over year and in a very tough economic climate. I believe that all my past experiences are relevant to this opportunity with Actelis, where I plan to accelerate success for the company, our investors, our customers and partners.

### For those readers not familiar with Actelis, what does the company do?

Ragavan: Actelis' mission is to accelerate delivery of broadband services, performance and reliability for our customers, such as Frontier Communications and Cbeyond here in the US. Abroad, Actelis has longstanding relationships with innovative service providers Colt and Destiny. We also provide IP-based broadband access solutions to many of the nation's municipalities, including the City of San Jose (California), Nassau County (New York) and Montgomery

County (Maryland), which is home to many Capitol Hill politicians, as well as leading universities like Stanford University here in the Bay Area.

### How and when did Actelis get started?

Ragavan: Actelis was founded in 1998 to solve the problem of accelerating broadband without funding multi-billion dollar network upgrades. The founders had the foresight to anticipate tightening purse strings and believed that reusing existing infrastructure would become imperative. We certainly have experienced a resurgence, particularly over the last couple of years, of carriers revitalizing their existing networks and leveraging their copper.

### How has the company evolved over time?

Ragavan: Over the last 14 years, Actelis has become well known in the marketplace as the world's No. 1 global supplier of Ethernet over copper solutions, but the company has evolved from a one-trick pony, EFM-over-copper solutions provider to a company that is accelerating broadband for both enterprise and residential subscribers. Actelis is having a continued widespread impact on the broadband industry by enabling carriers to immediately deliver universal broadband services to millions of subscribers who are either out of reach or do not meet their government's current definition of broadband.

### What makes Actelis solutions unique?

Ragavan: A great example of a new technology that has enabled these greater rates and coverage is our DRB (Dynamic Rate Boost) technology. Actelis' broadband solutions with built-in DRB technology are playing a key role in a carrier Ethernet initiatives, enabling them to significantly boost symmetrical bandwidth throughput and coverage area and efficiently scale the types of business-class, managed and cloud-based services they can deliver to their businesses customers, while drastically reducing their operational costs by replacing outdated T1 circuits.

On the residential side, with the launch of Actelis' BBA in 2011, we continued that rich history of innovation. Actelis' BBA can be used to grow the customer base to which carriers can offer triple-play services, including IPTV, which, according to Screen Digest's IPTV Market Monitor Q2 2011 Report, has a global subscriber base of over 47 million. Since the BBA is powered by the existing POTS line and takes only minutes to install, carriers can see an accelerated time to market, immediate compli-

Vivek Ragavan



universal broadband service to its citizens, in January 2008, followed by Finland. Taiwan started broadband universal service in 2007. The British government planned to make broadband available to every household by 2012, but the coalition government has delayed this by three years because they believe the cost is too great – a problem that Actelis' BBA actually solves. The reality is, whether in the U.S. or abroad, universal broadband is a necessary requirement for economic growth to narrow the digital divide.

**Is there anything in the pipeline at Actelis about which you can give us an inkling?**

Ragavan: Actelis' traditional business has been to develop and bring to market broadband access solutions over existing networks for the enterprise market. And while we have achieved great success in this space, we are also focusing on the residential market, where we believe the acceleration in growth enabled by our new BBA product line provides unprecedented opportunity for Actelis and our customers. The BBA is the first solution Actelis has produced for the residential market, and we are currently developing new solutions. There remain many untapped areas in DSL technology, such as VDSL2 and vectoring, [which] will enable carriers to achieve their goals: leverage existing assets, future-proofing networks, minimizing capex and opex, and generating additional new revenue streams. Actelis is developing solutions that will help carriers realize the full potential of such key technologies to achieve their goals, which will accelerate both their success as well as ours. There has been a lot of hype recently about various other DSL enhancements, but it is important to note that these are merely tests conducted in pristine lab environments and not actual field deployments. Actelis continues to focus on our customers' practical needs, adding support for VDSL2, vectoring and other DSL variants into our product portfolio. Furthermore, we are pushing the boundaries on how much bandwidth is available on copper, further exceeding the unmatched rate, reach and reliability Actelis already delivers over existing networks.

ance with government mandates, and higher revenue with minimal capital investment and virtually no increase in operational expenses.

**You mentioned BBA represents a major paradigm shift in the way carriers can address the digital divide. Explain.**

Ragavan: No longer is the digital divide a challenge, but an economic opportunity, in my opinion. With the BBA, carriers now have a pragmatic solution that will drive increased revenues because they can finally deliver on the promise of ubiquitous broadband across their entire customer serving area. So whether carriers are trying to bridge the digital divide to meet government directives or deliver value-added services like IPTV, over-the-top video and on-demand TV, they can achieve these goals with the Actelis BBA. There is absolutely no need for any carriers and their residential customers to wait for high-speed broadband service. With Actelis' BBA, if you've got dial tone, then you've got broadband.

**Where are we with broadband adoption?**

Ragavan: Broadband has been growing at a phenomenal clip, with subscribers now totalling more than 581 million worldwide. However, whether you

look at the United States or in other developed and developing countries, the digital divide still persists. The most effective way to close that divide is leveraging the existing infrastructure. You may have seen recently that the FCC's Broadband Adoption Taskforce published statistics that showed the broadband adoption rate in the U.S. at 68 percent, leaving about one third of U.S. homes without a broadband connection. With broadband dubbed as the new catalyst for economic growth, both the U.S. government and governments abroad are motivated to develop universal broadband for all. Here in the U.S., the FCC agreed to transition the Universal Service Fund, originally created to deliver POTS to rural communities and low-income residents, toward the deployment of broadband service to unserved and underserved Americans. I believe that broadband service provides a critical ingredient to promoting economic development and enabling efficient commerce. In this context, making universal broadband accessible to everyone has always been Actelis' mission.

**How about abroad?**

Ragavan: Abroad, universal broadband differs. Switzerland was the first country in the world to provide



## Nearly Half of Developers Use HTML5

The mass migration to HTML5 is well under way, with around half of all developers having already switched to the programming language, according to a new study. Evans Data's latest Global Development Survey found that 43 percent of North American developers currently rely on HTML5. Use is even higher in the Asian Pacific regions, where 58 percent of developers have moved to the language. Programmers in Europe, the Middle East and Africa have been slower to migrate to HTML5. Even more astonishing is that Evans Data researchers found that a whopping 75 percent of the 1,200 global respondents plan to move to HTML5 if they haven't already. "There isn't any question about the adoption of HTML5, it's already the de facto standard," said Janel Garvin, CEO of Evans Data. HTML5 represents the latest revision of the HTML standard, which was first created in 1990, and is constantly being redeveloped. It follows its predecessors HTML 4.01 and XHTML 1.1.

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## Damaka Unveils Video Client

Damaka's new software client extends the video and audio capabilities of Asterisk PBX to mobile devices like the iPhone, iPad, and Android-based devices. Dubbed Xriz, the mobile client can be installed with no additional software or hardware. Once installed on iPhone, iPad or Android devices, users can participate in video and audio sessions with Asterisk PBX users.

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## Zodiac Wins MSO Business

Two tier 1 North American MSOs have tapped Zodiac Interactive for HTML5 deployments within their respective service environments. The Zodiac PowerUp HTML5 Application and Services Platform, which became available last spring, leverages a web browser presentation engine and service layer to provide what the company describes as a rich authoring environment with full browser control of all systems and subsystems for IPTV infrastructures and set-top box application platforms such as tru2way, PowerTV, Linux and GITV. "The goal of our clients is to enable a universal, advanced look, feel and navigation during the multiscreen user experience that not only meets, but also exceeds consumer expectations," says Zodiac CEO Brandon Brown.

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## Opera Opens TV App Store

Mobile browser maker Opera made a big splash at the Consumer Electronics Show in Las Vegas by officially throwing its hat in the TV app market ring, taking on industry behemoths like Google and Apple. The Norwegian company has released an HTML5-based app store, dubbed the Opera TV Store, dedicated specifically to HD-ready

televisions, whether they are web-enabled or connected to a set-top box or Blu-ray player. Many questions still remain, however, such as how many developers and hardware manufacturers will partner with a lesser-known company Opera. The company is positioning itself as being very developer-friendly, which is highlighted by the addition of the Opera TV Emulator and Opera Dragonfly tools that allow engineers to create and test their TV apps without actually going through the process of integrating with the platform.

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## Star2Billing Offers Voice Broadcasting Platform

VoIP solutions provider Star2Billing S.L. has introduced a free and open source voice broadcast application for FreeSWITCH that will enable companies to engage in automated delivery of interactive phone calls to contacts, clients and the general public. The Newfies-Dialer Voice Broadcasting Platform includes the core components for voice broadcasting or an auto dialer system, and other features including enhanced security and monitoring and native support for multiple nodes to quickly and easily scale the system. Star2Billing's Newfies-Dialer Voice Broadcasting Platform is assembled entirely from free and open source components including not only FreeSWITCH, but also Celery, Django, Plivo, and RabbitMQ.

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## AT&T Intros New API Platform

AT&T recently launched a new API platform. That includes tools to help developers create HTML5 mobile apps that will run more efficiently, save battery life and bring new apps to customers. Up until this, developers had to make at least three or four different technology and business arrangements to access network APIs such as messaging, location, advertising and payments. With the new API platform, developers have access to all the APIs they need in one place. The platform also has in-app billing technology to allow developers to receive payment for their apps through the AT&T customer bill. With a few simple clicks, developers can incorporate these and other network services directly into their HTML5 apps. AT&T also plans to launch a new HTML5 web storefront this year.

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## Wedge Addresses HTML5 Security

Strategy Analytics projects that one billion phones with HTML5 capabilities will be sold in 2013, up from 336 million in 2011. The widespread adoption of HTML5 has led to the end of Adobe's Flash Player for mobile devices. However, according to Wedge Networks, threats specific to HTML5 include malware channels that use cross-site delivery/communication, broader Javascript capabilities and WebSocket protocol as vehicles for delivery and infection. But the company adds that deep content inspection is a method used to secure HTML5 content.

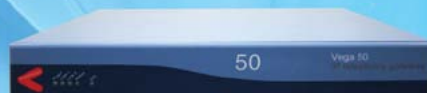


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By Paula Bernier

## The Call for Speech Recognition Grows Louder

**T**alk about speech recognition, and the first thing to come to mind is probably Apple's Siri. Indeed, Siri has become a key driver to move speech recognition into the mainstream. But there's a lot more going on with speech recognition, which is now being used to enable people to control their TVs, VCRs, set-top boxes, satellite dishes, DVD players, phone systems, and even devices like alarm clocks, in-vehicle systems and thermometers.

As Global Industry Analysts noted in a study released earlier this year, "the use of voice/speech recognition technology has transcended from conventional corporate uses, such as automated speech-enabled interactive voice response systems at contact centers, to mass-market products such as mobile phones, and car navigation systems, among others."

That may explain why the global market for speech recognition is expected to increase at a compound annual growth rate of 8.8 percent between 2010 and 2015, according to a January 2011 MarketResearch.com study. The study estimated the total market was \$38.4 billion in 2010, and forecasts it will reach \$58.4 in 2015.

Nuance Communications is one of the key companies positioned to help make that happen. In fact, Apple licenses Nuance technology for some of its products, Matt Revis, vice president of product management at Nuance tells INTERNET TELEPHONY, although he declines to comment as to whether it's Nuance technology that is powering Siri.

In any case, Revis says Siri's impact on the speech recognition space has been: "Massive, massive and massive."

"Anything Apple does just has massive gravitas" across the consumer base and the mobile ecosystem, he notes. And, he adds, it doesn't hurt that Siri is fun, has a "cute personality", and is heavily advertised. "People much prefer to interact with speech if the experience is brilliant and delightful," Revis notes.

One of Nuance's more recent announcements involved the launch of Dragon TV at January's Consumer Electronics Show. Revis explains that this solution can be embedded in products such as televisions and TV remote controls to enable people to use natural language to find and/or record the programming they desire. That means that rather than scrolling through an on-demand menu or a lengthy electronic programming guide, users can simply say something like "find comedies with Meryl Streep" to locate the program, movie or general type of content they're looking for.

Revis says Nuance has partnered with just about everyone in the consumer electronics industry on this technology, and that

it announced a deal with LG the same week it did the mid-January interview with INTERNET TELEPHONY. That deal, he says, will enable LG to bring speech functionality to its Magic Remote in the first half of this year.

Natural language like that described above is what's new and exciting in the speech recognition space, notes Revis, adding this is a key area of investment for Nuance. Of course, natural language has taken its lumps from some consumers who complain that it doesn't always work as expected. Revis says if that's the case it's probably because people are trying to use Siri or other solutions to do things for which these solutions were not designed. That's why Nuance and others are working to expand natural language to new and additional domains and languages, he says.

Despite any limitations speech recognition might have, Global Industry Analysts says that the "market for voice recognition systems and software is projected to witness unfazed developments with players in the space striving to take the technology to higher grounds by improving the ability of these systems to accurately recognize and respond to natural human speech."

In addition to mobile phones, TVs and remote controls, Nuance's speech recognition technology is embedded in consumer computers. In fact, at CES Intel announced plans to embed Nuance technology in its Ultrabook chipset. A different business unit within Nuance, meanwhile, addresses speech recognition relative to call center applications. If you caught the recent CNBC special "Customer (Dis) service", you saw Nuance's Dan Faulkner talk about a next-generation answering machine that really cares, in the words of the program.

"We train the system to understand what people are saying, but more importantly what do they mean," Faulkner noted.

That's just another example of natural language at work, explains Revis, who notes that call center automation and health care are the two arenas in which speech recognition is the most widely used today. Airlines, banks and many other companies leverage voice recognition in their call center applications, while on the health care side physicians use the technology to record data that can be channeled into their databases quickly and easily.

Research firm KLAS in a study released in February 2011 said future growth prospects for speech remain strong even in areas like medicine, in which the technology already is well accepted.

"The speech recognition market is ripe for healthy growth," says Ben Brown, author of "Speech Recognition 2010: Vocalizing Benefits". "Currently, less than one in four hospitals use the technology, however, in light of meaningful use and the benefits providers point out in this study, we expect it will assume a more prominent place in the role of clinical documentation."



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By Steven Kokinos

# Aligning a UC Vision and Business Objectives via the Cloud

**C**IOs are seeking to define their enterprise communications vision. And according to senior midmarket IT executives gathered at a recent industry conference, they are increasingly looking to cloud UC solutions as a way to execute this vision simply and affordably.

Legacy premises systems, in the view of several of these CIOs, while historically working pretty well at solving individual technology tasks, are not a cost-effective choice today when the communications needs of enterprises necessitate solutions that lower front-end capital investment to meet corporate as well as IT budget realities, are open standards-based to allow ready integration of a range of business software applications, eliminate maintenance headaches, can be deployed rapidly, and offer demonstrable cross-functional business ROI.

Now more than ever, these CIOs said, a UC vision must be pragmatic and reflect not only current and future technology needs and priorities, but overall business goals. In short, CIOs in a range of industries – from manufacturing to health care, accounting to retail – now believe that aligning cloud UC and other technology investments with key business success metrics is the gauge by which their effectiveness will be judged today, by CEOs and corporate boards alike.

Leading analyst Brent Kelly, vice president and principal analyst at Constellation Research Group concurs, noting, “It no longer matters where the hardware and application servers are physically located. What is important are the applications themselves. Virtualization and centralization have made location unimportant, and it is not a far stretch to think of moving collaboration and communications capabilities from a centralized private cloud to a cloud service provider which may offer equivalent or lower TCO along with fixed opex costs, less IT headache, and no back-end servers to operate, main-

tain, power, and patch.”

## Disruptive Forces at Work

The running theme of this IT conference focused on the transformation already taking place within today’s midmarket enterprises. Of course, discussing IT evolution is not a particularly new idea at industry events such as this. Yet the change moniker here was particularly apt, as the roughly 140 attending CIOs explained the multifaceted challenges of addressing the growing strategic business nature of their professional responsibilities, the rapid clip at which new technologies appear, as well as the disruptive nature of an increasingly global knowledge workforce and the burgeoning bring-your-own-personal-device-to-work movement.

In conference roundtable sessions, executives spoke candidly and forcefully about the need to develop and implement a UC communications strategy from a myriad of business perspectives. “How well does it serve departmental needs as well as those of the organization as a whole?” “Will it provide the required tools necessary to increase collaboration and to streamline business processes?” Overall, participants said, they view implementing a cloud UC strategy as a catalyst toward helping their IT organizations become viewed more as a business success driver and high-value organizational service provider – and not simply as a cost center.

## Cloud Alignment

Call this line of thinking the business alignment imperative, running IT as a business, or one of several other analogies popular in the trade media, among industry analysts, and in the technology blogosphere. But however it is referred to, if the attendees at

this conference are any indication, more and more CIOs are viewing cloud UC solutions as a highly effective way to invest limited and often shrinking technology budgets to derive tangible business value and high ROIs for the entire enterprise.

One Chicago-based Fortune 1,000 manufacturing organization has worked hard to utilize cloud-based solutions to achieve just such strategic business objectives and is currently executing a full cloud UC solution. In developing its enterprise UC vision and strategy, the CIO sought to not only lower costs, but to enhance workforce collaboration and productivity. To achieve this, the company began by unifying its communications infrastructure, moving from a self-described “hodge-podge” of TDM and VoIP parts to a consolidated MPLS network to support such applications as point-to-point and multipoint videoconferencing via a cloud video bridging architecture. The idea was to better connect knowledge workers throughout the company’s global operations and shorten product development cycles.

## Cloud UC Drivers

Several key business drivers were at work in the company’s decision to move to a highly-integrated cloud communications solution.

First, the CIO had already driven several key business applications to the cloud, notably the company’s CRM and ERP systems. Success with these projects gave the IT team leverage to advocate for other cloud projects that mirrored the corporate mandate to utilize managed cloud services and applications as a way to better focus the company on its core business. Second, the firm’s antiquated premises-based PBX was not only at end of its lifespan, annual maintenance costs were staggering, the system had a limited range of internal applications, and business application integration was virtually non-existent. Finally, the company wanted to utilize a range of



imperative and the first step in deploying a full cloud UC service suite. As important as getting its new contact center capabilities in place and functioning fast (the initial project implementation plan was completed in little more than 30 days) was the ability of the new hosted UC platform to meet several other key business requirements.

First, the cloud solution needed to be an open-standards based platform and able to immediately integrate with the organization's homegrown CRM application, software functionality critical to the firm's day-to-day business operations. Second, it needed to provide extensive call routing and call masking capabilities to allow representatives to utilize local numbers when completing outreach to prospective clients in other locales, as well as give the parties called the ability to use this local number to return calls to specific agent representatives. Third, the cloud offering needed to be capable of combining voice and contact center applications with presence/IM, mobile UC capability for its in-field agents, and videoconferencing for branch office-to-branch office collaboration. Finally, the business intelligence engine needed to provide management with the ability to track and analyze key customer interaction and performance data, not just in the contact center, but across the organization and specifically with its hundreds of mobile sales professionals.

"Doing more with less is not a new concept to most IT organizations or overall businesses for that matter," noted the CIO of a leading healthcare staffing organization who attended the conference. "What has changed within my organization is a mandate from my CEO and our board to have all areas of the company in sync with the overall technology direction we are setting and executing. And developing and implementing a cohesive UC strategy is a high priority for us. Like never before, we are looking strategically to see how such technologies as highly-integrated cloud UC platform applications can impact workflows, allow us to provide better services, and more greatly influence our top and bottom lines."

*Steven Kokinos is president and CEO of Thinking Phone Networks ([www.thinkingphones.com](http://www.thinkingphones.com)).*

integrated cloud UC applications – including IP voice, videoconferencing, contact center, presence/IM, and analytics – to gain visibility into and streamline personnel activities, shave time off product development cycles, and be more responsive to customer demands and market fluctuations.

In just nine months, the company deployed cloud VoIP and analytics services to five of its office locations as part of a phased implementation plan. In addition, the company now benefits from video presence in 22 facilities, including its domestic headquarter offices along with manufacturing facilities in China, India, and the United Kingdom.

Now, product development and manufacturing teams meet in daily videoconferencing "scrum" sessions in which goals are set and reviewed, obstacles identified, and resources allocated. Senior management gains key visibility into these and other enterprise-wide workforce functions via actionable analytics-driven data which is gathered from across communications applications, correlated against company-

defined benchmarks, and presented in the form of tools, dashboards and key performance indicators. The results included the improved collaboration both the CIO and senior management were looking to achieve along with faster decision making in all functional areas that impact product time-to-market.

### Cloud UC ROI

Beyond the product development and manufacturing areas, this same manufacturer is using the integrated UC business intelligence environment to gain better insight into the sales engagement and customer support processes. On top of this, the CIO estimates that his organization is already realizing approximately 30 percent operational cost savings from its cloud communications investments and providing better service and support to its internal customers.

Another enterprise moving communications applications to the cloud to secure broader business advantages is a nationwide residential real estate concern. For this company, getting a new contact center online quickly was the driving business

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## **Sprint, Verizon Separately Combine Business Lines**

When it comes to convergence at the telcos, everything seems to be coming together. Both Sprint and Verizon announced in January separate moves on this front. Sprint Nextel is combining its consumer and business sales efforts under a new organization headed by Paget Alves, chief sales officer. Bill Malloy, chief marketing officer, will handle all marketing for the new effort. Four Sprint executives left the company following the change. The Kansas City Star reported that a Sprint memo to employees read: "We believe that we no longer need to support two separate business units (consumer and business) and that it is more logical now to evolve to unified marketing and sales organizations." Meanwhile, Verizon in mid January announced the creation of a new global organization that will oversee all business, government and wholesale operations from across the company's wireless and wireline businesses. The company says the move "will even more strongly enable it to provide business and government customers with fully integrated enterprise-class solutions." John Stratton, previously executive vice president and chief operating officer of Verizon Wireless, is president of the new organization, which is called Verizon Enterprise Solutions.

## **New Avaya IP Office Has the X Factor**

The latest version of Avaya IP Office, a unified communications toolset for small businesses, includes a new mobile app and communications integration with popular business productivity applications like Salesforce. At the release of Avaya IP Office 8.0 in mid January, the mobile app, called one-X Mobile Preferred for IP Office, provided what the company calls "a comprehensive set of unified communications capabilities" via Android devices. The company said it would make that available soon for iPhone users as well. Key features of Avaya one-X Mobile Preferred for IP Office include full multi-party conference management; integrated presence; instant messaging; geopresence; and visual voicemail.

## **Verizon Expands VoIP in Asia-Pac**

Verizon reports that it has expanded its VoIP service within the Asia-Pacific region, enabling multinational companies in key commercial hubs across the region to take advantage of a wide range of the latest unified communications and collaboration applications to help increase productivity and efficiency. It's available to customers in Australia, Hong Kong, India and Singapore, who can use the service to gain access to applications including social networking, video chats, mobile-device support, instant messaging and presence. Verizon says it's adding inter-company high-definition voice and video capabilities for select VoIP customers that use the service's popular VIPER feature. This is a cloud-based IP-to-IP routing option that eliminates additional per minute domestic and international charges on calls between VIPER-enabled locations customers. "Video is quickly rivaling voice in driving enterprise collaboration, and our

latest offering enables Verizon VoIP customers to employ face-to-face collaboration more cost effectively," says Mike Palmer, vice president of enterprise strategy and chief marketing officer. "We're building on a proven track record of developing and delivering enterprise-class IP-based solutions and creating a high-IQ network effect for our VoIP customers in Asia-Pacific and across the globe."

## **Sprint Launches SIP Toll-Free Service**

The recently rolled out SIP Toll Free solution from Sprint allows businesses to take advantage of their SIP trunks and existing communication system to make their own routing decisions, share capacity across the enterprise, and aggressively control costs. Unlike other service providers, Sprint SIP Toll Free supports customer-directed routing at no additional charge, the company reports. "Sprint's SIP Toll Free solution offers businesses complete control over their inbound toll-free calls, putting call management and more efficient routing and termination decisions into their hands," says Monnie McGaffigan, vice president of wireline, international and strategic alliances at Sprint. "Our customers can now rely on the features and capabilities of their own enterprise communication system, thanks to network convergence, without having to incur legacy carrier costs."

## **AT&T Launches Cloud-Based UC Services**

Earlier this year AT&T launched AT&T Unified Communications Services, which are aimed at helping organizations control costs and eliminate unpredictable expenditures. The services enable customers to unify their communications, and to do so over what the company says is its highly-secure and reliable network. As with AT&T's other cloud solutions, AT&T UC Services are accessible from almost any device, enabling employees to collaborate and communicate in real-time regardless of location. And it allows users to transition from one communication method to another – for example, seamlessly switching from an IM chat to a phone call to a web or videoconference.

## **Company Enhances UC Solution**

Teo UC 4, the latest version of Teo's unified communications platform, includes more than 200 enhancements and several new features for both end users and administrators. Users can now access all UC tools within the Teo Softphone via tighter integration with the Teo User Portal. The Call Swipe feature enables Teo UC users to transfer calls seamlessly from device to device without interruption or disruption to other people on the call, further enhancing the mobility of users. With the addition of Schedule-based Auto Attendants, users can set different auto attendant behaviors based on settings such as time of day, day of the week and more. Also, the Dial Plan Manager is more user-friendly and upgraded mass-provisioning capabilities allow administrators to provision and configure all settings for thousands of users and devices as quickly as they can provision a single user or device.

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

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# Swing and a Hit

## Hosted iPBX Does a Triple Header at Cactus League Ballpark

It's springtime, and in Arizona springtime brings the boys of summer. That means things are pretty busy this month over at Salt River Fields, the new Spring Training home of the Arizona Diamondbacks and the Colorado Rockies. This beautiful new facility on the Salt River Pima-Maricopa Indian Community in Scottsdale includes an 11,000-seat stadium, separate training facilities and clubhouses for each team, 12 practice fields, and various concessions areas. The \$100 million complex, which opened just one year ago, also offers spectacular mountain views, a plentiful supply of sunny days, and a state-of-the-art spectator experience.

The facility's communications solution is also state of the art. Because the ball teams are here for just a small part of the year, Salt River Fields, the Arizona Diamondbacks, and the Colorado Rockies were looking for the utmost in flexibility and cost efficiency both in terms of pricing and in the ability to move and configure phones. They found that in a hosted VoIP solution provided by Saddleback Communications and powered by Metaswitch.

The solution, called BusinessFlex Hosted iPBX, integrates local telephone service, IP business phones (from Aastra), and high-speed Internet. Based on the MetaSphere Call Feature Server, Saddleback's hosted solution provides multi-tenancy; allows each user to administer individual voice mail, call routing options, and the like; and includes the Metaswitch CommPortal, which enables customers to do their own adds, moves and changes.

"We've been impressed with the flexibility of the system," says Dave Dunne, general manager of Salt River Fields. "IP phones that were initially installed in our construction trailer were seamlessly moved to the permanent offices, and we quickly added phones in a temporary sales office to support retail ticket sales during the holiday season."

Steven Obee, director of sales and service for Saddleback Communications, adds that kind of flexibility in moving phones, and turning service up and down as needed, is also important given the seasonal variation in usage. There are 250 stations in service between the Arizona Diamondbacks, the Colorado Rockies and Salt River Fields during Spring Training season, which runs from mid February through the end of March or early April, but that will go

Salt River Fields



My daughter, inlaws and me at the Scottsdale ballpark.



down to less than 50 seats in the off season. Flexibility is also key given Salt River Fields, the primary customer in this deployment, leverages its multiple-use venue for other events (such as a balloon festival, a food truck festival, and celebrity sports events) during the year. The hosted VoIP solution enables it to alter service quickly and affordably as needed for each of these events.

Salt River Fields has approximately 220 phones, ranging from the Aastra 6731i for general business use to full-featured Aastra 6757i models, and color touch-screen Aastra 6739i executive phones. The hosted iPBX that provides connectivity and some feature functionality to those phones is sold on a per-seat subscription basis. In fact, Obee adds, Saddleback created a seasonable per seat pricing plan, which is lower cost during the off season.

And because Salt River Fields and the ball clubs went with a hosted iPBX solutions vs. a premises-based system, there was no upfront capital expense required, and they don't have to deal with the hassles and costs of maintaining an on-premises solution, Obee notes.





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# The Videoization of Mobile Value-Added Services

On any network, wireline or mobile, there are basic calling services, but operators try to upsell users to value-added services. Why? Because while basic calling services are delivered with slim margins in a competitive environment, selling differentiated VAS increases average revenue per user with higher margins.

Voicemail is the No. 1 VAS around the globe, and ring back tones are the second most popular, particularly in Asia. However, India has arguably one of the most diverse mobile audio VAS markets in the world. With most mobile operators focused on infrastructure and basic calling services, the result has been a somewhat separate mobile VAS industry. This development has spawned an influx of unique services that can be used and consumed from basic mobile phones. For example, rural farmers in India can use their mobile phones to access a VAS offering up-to-date farming information, like weather forecasts or crop seed recommendations.

While mobile audio VAS is alive and well, the explosion of mobile video and the switch to IP-based networks in the mobile core are driving an industry-wide shift from audio VAS to video VAS.

## Here Comes LTE

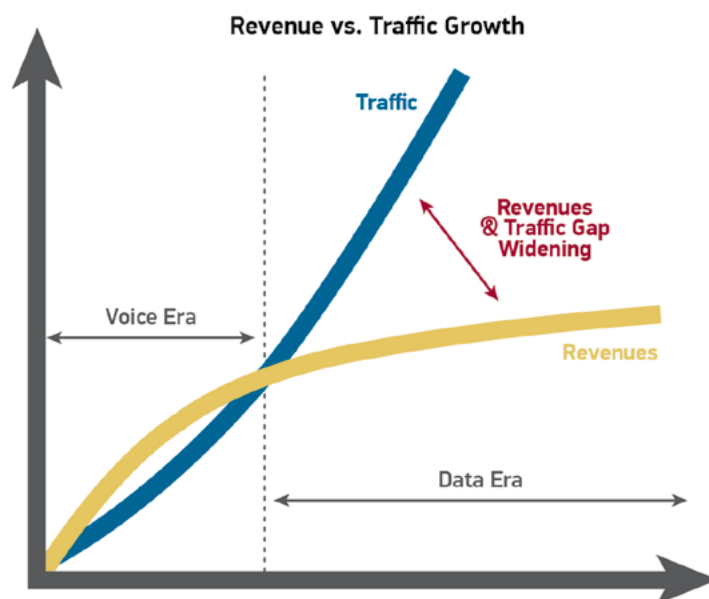
3G mobile networks have given users their first taste of IP broadband connectivity, but even in 3G, the voice path through the radio access network is a circuit. However, with emerging LTE networks, everything (including voice and real-time video) will be delivered in a pure end-to-end IP infrastructure. As a result, LTE mobile broadband will be even faster than 3G, with data speeds comparable to Wi-Fi. LTE mobile networks, with pure IP core infrastructures, will have profound impacts in many ways, including the infrastructure required to manage and deliver VAS.

## Mobile Broadband Data Plans

Even with 3G mobile networks, mobile operators are seeing a huge growth in mobile data traffic, particularly mobile video traffic. In fact, mobile video could reach 66 percent of all mobile data traffic by 2015, according to the Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2010-2015.

The current investment focus appears to be on delivering the mobile broadband connectivity and infrastructure, which is often sold to mobile consumers as flat rate data plans, limiting ARPU growth beyond adding more subscribers. Meanwhile

mobile traffic growth is increasing and outpacing data plan revenue growth. This is, and will continue to be, the primary challenge for mobile operators for the foreseeable future. Adding the LTE network migration to the mix, this trend will only accelerate and the gap will continue to diverge.



*With the increase in mobile video traffic, operators will be challenged to keep up revenue growth.*

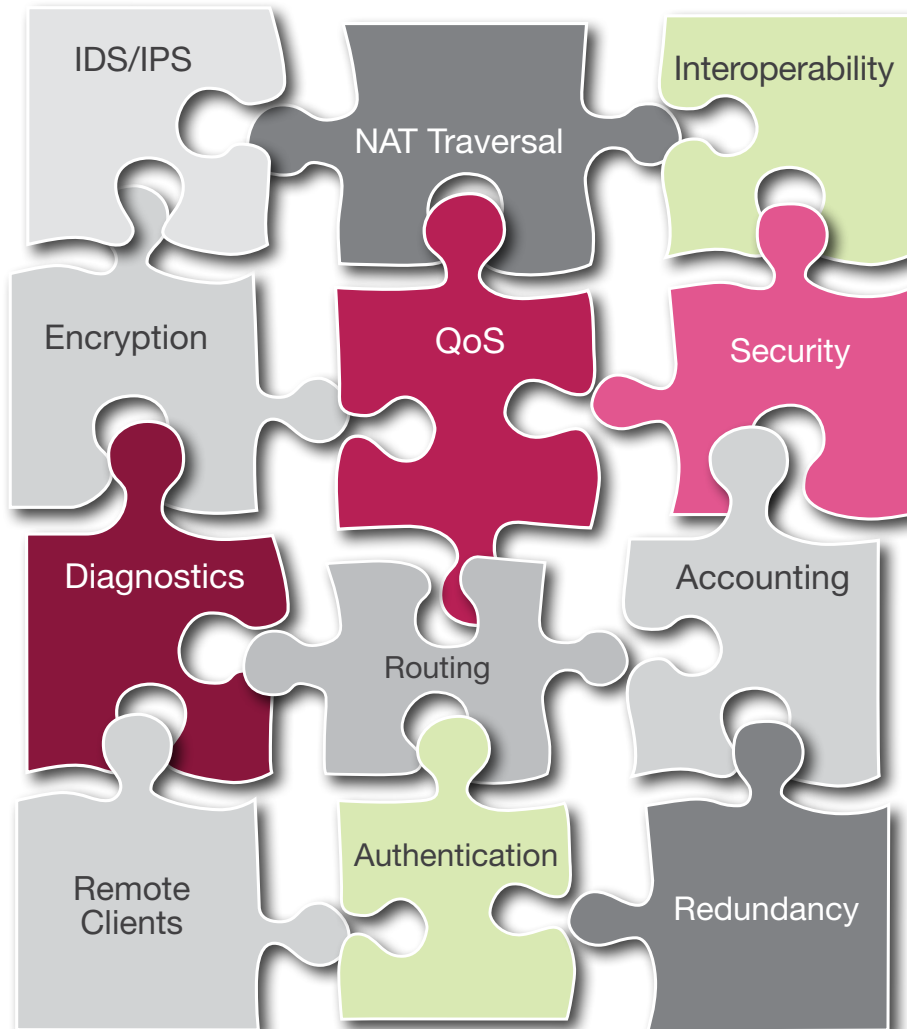
## Migrating to Video VAS

Operators need to remember where they made high-margin revenues in their 2G audio mobile networks – audio VAS. Forward looking operators need to revisit their entire VAS portfolio and plan to offer the video VAS equivalents. The videoization of mobile VAS is a solution to embrace the bandwidth and capabilities of 3G and LTE networks and monetize those opportunities. Differentiated interactive video VAS will increase ARPU. We are already beginning to see a shift from incremental to monthly mobile broadband (3G and soon LTE) data plan revenues and premium VAS applications are commanding premium high-margin pricing.

Hence, an industry-wide trend is now emerging where operators want to extend the revenues, ARPU improvements and margins from audio VAS by migrating them to video VAS equivalents. For example:

- voicemail to videomail;
- interactive voice response to interactive voice and video response;
- audio ring back tones to video ring back tones;
- audio conferencing to videoconferencing;

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- audio streaming to video streaming; and
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### Service Delivery Infrastructure

The requirements are clear: Operators need to increase the volume of revenue-generating video services. Plus, they now need to deliver these in an end-to-end IP network environment.

the call is being completed through the network. If the call can't be completed, then the CSCF could route the call to a video mail application, supporting the ability to record the video message, possibly in an H.264 HD format, for later video playback to the called party.

### IMS MRF Equipment

When someone extends the simple

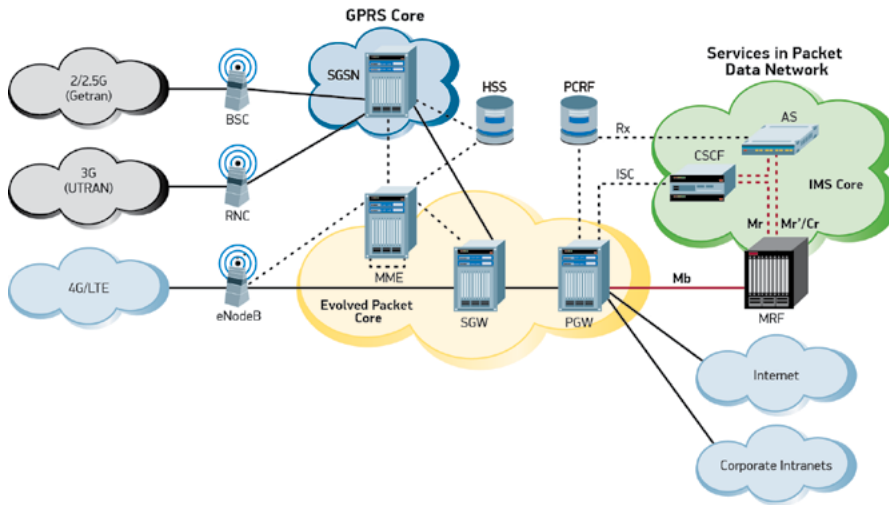
MRF capabilities support receiving real-time transport control protocol messages from an endpoint. This allows the media server to utilize adaptive multi-rate encoding techniques to adjust the bit rate of media streams during periods of high congestion.

While mobile video is growing fast, the MRF must also support voice over LTE, as mobile voice services will continue to be a significant source of mobile operator income. The MRF plays a critical role in supporting IP audio packet processing for VoLTE, including support for adaptive multi-rate wideband between LTE audio endpoints and transcoding of AMR-WB to other legacy audio codecs.

Compared to circuit-switched technology used in 3G networks, IP-based packet communications on 4G/LTE networks is more susceptible to delay and echo. Operators can implement distributed MRFs to reduce local and regional delays and increase the performance of real-time interactive services.

In 2G audio mobile networks, basic calling eventually became a commodity service commanding minimum margins. Operators of 2G networks increased revenues, ARPU and margins with differentiated audio VAS. 3G and emerging LTE networks are providing increasing mobile data bandwidth to the end user. The result is a huge growth in data traffic – especially mobile video. 3G/LTE operators are focused on delivering LTE mobile broadband infrastructure to their customers. But operators can't stop at just providing mobile broadband data services, often based on flat rate data plans. Instead, operators should remember their improved margins and ARPU from their audio VAS offerings, and extend this thinking to the videoization of mobile VAS. This is how they can increase ARPU and margins.

*Ray Adensamer is senior manager of MSBU product marketing at Radisys ([www.radisys.com](http://www.radisys.com)).*



*Within the 3GPP standards and an LTE mobile network, a role has been clearly defined for the multimedia resource function (MRF) to provide real-time IP media processing functions such as media play, record, collect digits and mix audio/video against IP media streams.*

The 3GPP has defined the IP multimedia subsystem as the services architecture within 3G and LTE networks deployments. Within the IMS architecture, the multimedia resource function delivers an increasingly important role in processing and integrating real-time audio and video media streams.

In IMS, call control is orchestrated by the call state control function. The CSCF can hand off the video call to various session initiation protocol application servers in the network, which can host the call logic for various video VAS applications. The MRF would then, under the control of the CSCF or AS, provide the necessary IP media stream processing on behalf of the application. For example, for a video ring back tone application, the MRF would play a video media clip to the calling party's video-enabled LTE device, while

use case above to literally thousands of simultaneous video streams requiring personalized video processing, the need for powerful MRF equipment in emerging LTE networks becomes apparent.

The increasing levels of traffic, particularly mobile video traffic, on 4G/LTE networks will drive the need for more real-time transport protocol media processing to support high-capacity video (including HD H.264). By including MRF capabilities, operators can support increasing video capacities, as well as required video transcoding and transrating for the large variety of two-way interactive and one-way video streaming services now in demand.

In addition, the MRF must dynamically adjust the media stream bandwidth in response to traffic congestion. For example, some IP media servers with



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# The Latest in LTE

## Wireless Providers Expand Networks, Mobile Device Portfolios

As the mobile throngs cry out for more expansive and higher-speed wireless connectivity, U.S. carriers are answering the call by bringing LTE to additional markets and introducing a wide array of 4G-enabled devices.

Many new LTE devices made their debuts at this January's Consumer Electronics show.

For example, Verizon Wireless at CES unveiled a variety of new devices – some of which have embedded global GSM/WCDMA roaming capabilities – for both consumers and business users.

New from Verizon at CES were Spectrum by LG, which features a 4.5-inch True HD In-Plane Switching display, and the Samsung Galaxy Tab 7.7, which has a Super AMOLED Plus touchscreen display offering high-definition 720p (1280x800) resolution, a 1.4GHz dual-core processor, and an HTML5 web browser. Verizon also launched at CES a handful of LTE-enabled DROID by Motorola devices. The new Verizon Jetpack – EuFi890, meanwhile, is a ZTE-developed Global Ready 4G LTE mobile hotspot that can support up to 10 Wi-Fi-enabled

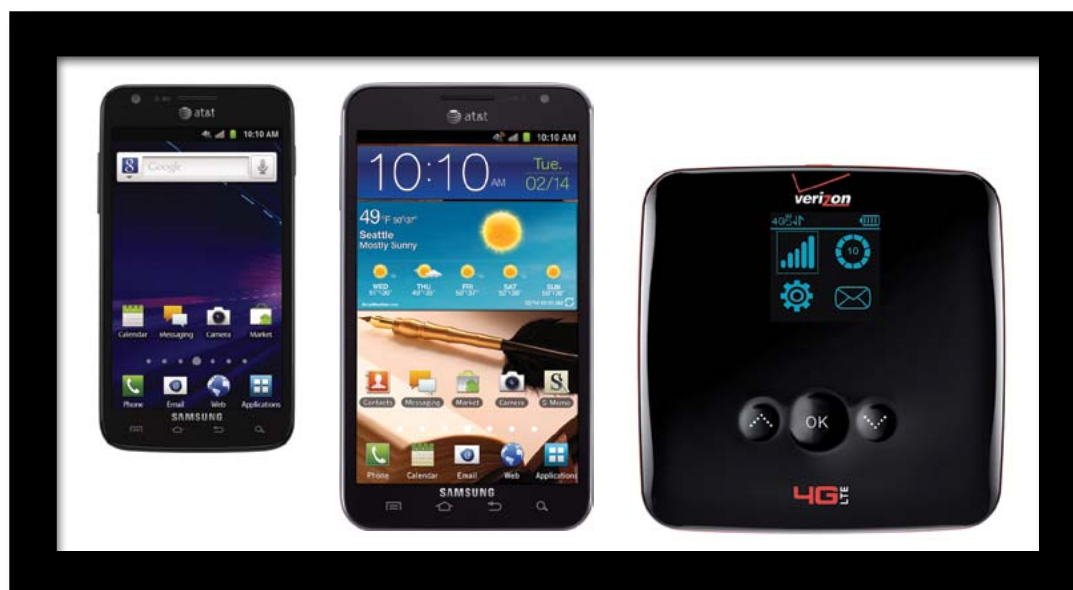
devices. The Verizon Jetpack – MiFi 4620L was also unveiled by the carrier at CES.

Verizon reportedly intends to support LTE in the vast majority of its smartphones and other devices – with the likely exception of push-to-talk devices – from here on out. The company also plans to support devices based on Microsoft's Windows Phone operating system.

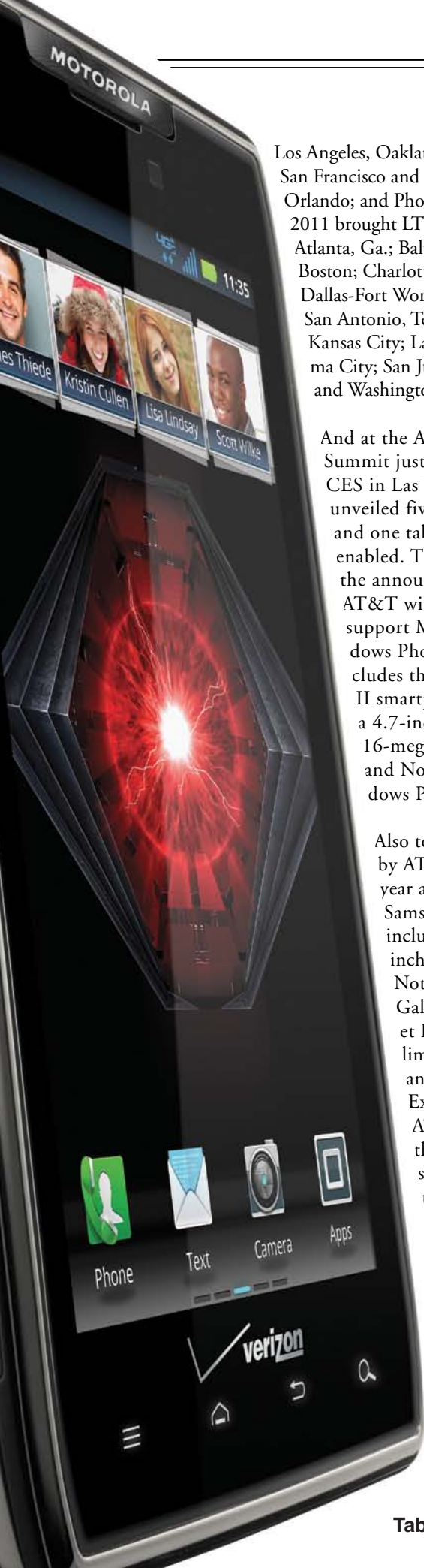
As of January, Verizon was the leader in LTE availability, with service in 190 markets covering 200 million people. The wireless telco reportedly activated a record 2.2 million LTE devices in the fourth quarter of 2011.

That makes Verizon the clear leader in LTE. But AT&T, while quite a bit behind, is gaining on them.

Just five days into the new year AT&T announced that its LTE service is now available in 26 markets, and 74 million consumers, after it recently brought 4G to 11 new markets. New markets in which AT&T LTE recently went live include Austin, Texas; Chapel Hill and Raleigh, N.C.; the New York City metro area;







Los Angeles, Oakland, San Diego, San Francisco and San Jose, Calif.; Orlando; and Phoenix. AT&T in 2011 brought LTE to Athens and Atlanta, Ga.; Baltimore, Md.; Boston; Charlotte, N.C.; Chicago; Dallas-Fort Worth, Houston and San Antonio, Texas; Indianapolis; Kansas City; Las Vegas; Oklahoma City; San Juan, Puerto Rico; and Washington, D.C.

And at the AT&T Developer Summit just a day before CES in Las Vegas, AT&T unveiled five smartphones and one tablet that are LTE enabled. The new included the announcement that AT&T will be the first to support Microsoft's Windows Phones. That includes the HTC TITAN II smartphone, which has a 4.7-inch display and 16-megapixel camera, and Nokia LTE Windows Phone devices.

Also to be introduced by AT&T early this year are new LTE Samsung smartphones including the 5.3-inch Samsung Galaxy Note; the Samsung Galaxy S II Skyrocket HD, a 9.27-millimeter smartphone; and the Samsung Exhilarate, which AT&T says is the first 4G LTE smartphone built to meet many environmental and sustainability standards. Sony Xperia ion is an exclusive to AT&T, the carrier announced earlier this year. And AT&T announced in January plans

to support and supply the Pantech Burst, a phone which will sell for less than \$50, and the Pantech Element, which will sell for \$299.99 with a two-year contract.

Sprint is also getting in on the LTE action. The carrier, which was an early support of the 4G alternative WiMAX, now says it will launch LTE in 10 markets by mid year.

At the Citigroup Entertainment, Media and Telecommunications Conference earlier this year, Sprint CEO Dan Hesse said the company's first LTE launches would be in Atlanta, Dallas, Houston and San Antonio, Texas.

"Within the first half of 2012, Sprint customers should experience first hand the wide-reaching improvements we have made in terms of boosting voice and data quality," said Bob Azzi, senior vice president of network at Sprint. "With advanced smartphones and sophisticated wireless modems, our customers are using more and more mobile data, and one of our top priorities is to provide the best technology possible to improve our customers' experience."

The LTE services will be supported on Sprint's Network Vision platform, which relies on a network of multimode base stations across many of Sprint's cell sites throughout the country. As discussed in the September issue of Next Gen Mobility, a new sister publication to INTERNET TELEPHONY, Network Vision involves replacing Sprint's existing network with brand new software-based equipment at the cell sites, installing some new gear for backhaul, and leveraging the company's spectrum assets on a number of fronts. The spectrum to be leveraged by the new network includes the 1.9GHz block used today by Sprint's existing CDMA network; spectrum, mostly at 800mHz, from the Nextel iDEN network; and the 2.5GHz spectrum used by Sprint partner Clearwire to deliver WiMAX services. Because the new gear doesn't marry the cellular technology or protocol with specific spectrum, Sprint says it will be able to combine all of the above to get the best of all worlds in terms of capacity and coverage.

As for devices, Sprint earlier this year announced support for two LTE smartphones (the Galaxy Nexus and the LG Viper) and a Sierra Wireless LTE mobile hotspot.

"The first three products that will run on the Sprint 4G LTE network exemplify the cutting-edge technology our customers can expect from Sprint as we progress with our 4G LTE rollout," said Steve Elfman, president of network, wholesale and product development for Sprint. "Galaxy Nexus packs industry-leading features and the best of Google into a beautiful design while LG Viper 4G LTE continues Sprint's commitment to green devices that don't sacrifice speed or technology. These products combine with our unlimited data pricing plans to give Sprint customers a powerful wireless experience."

# LightSquared Asks Authorities to Put GPS Industry to the Test

**T**he LightSquared saga is like the Energizer bunny – it goes on, and on, and on – but, in this case, not in a good way.

As this issue was going to press in January, LightSquared was making its case to the media, among others, reiterating the message that GPS device makers are intentionally throwing a monkey wrench into its plans to launch service on a 4G wireless network. In describing the situation, Jeff Carlisle, executive vice president for regulatory affairs and public policy at LightSquared, went as far as to say GPS device makers “rigged” their test results by using out-of-date devices. He added that they did the “invalid” testing in a way that prevented any input from outside sources, and he charged that they intentionally leaked the results.

GPS device testing to which Carlisle referred was done by Air Force Space Command on behalf of the Space-based Positioning, Navigation, and Timing Executive Committee, also known as PNT EXCOM.

“The devices tested focused on obsolete and niche devices which were chosen because they were the least resilient devices,” he said during a Jan. 18 conference call for press and analysts. Some of the devices tested were released in 1997 and 1998, some with no filtering whatsoever, he said. “Those modules aren’t even sold to consumers,” he added. “Those devices now represent less than 1 percent of devices.”

Carlisle went on to say that over the past 12 months LightSquared has spent countless hours and a mountain of dough communicating with federal agencies to find a workable solution to its spectrum woes, which involve the airline industry and GPS device makers sounding the alarm that a LightSquared network would create significant interference issues with their applications. LightSquared, he said, has made multiple efforts to make things work, but has not been met with the same effort by the GPS community.

“The testing just doesn’t reflect reality, and it probably was never intended to,” Carlisle concluded.

“Tests should’ve been conducted by an independent testing laboratory, not by the GPS [device makers] themselves,” he said, adding that the process employed “can only be described as a fiasco.” In what it views as having the potential to right these alleged

wrongs, LightSquared is asking the National Telecommunications and Information Administration to “objectively re-evaluate this initial round of testing and also to evaluate mitigation proposals the company has proposed.” LightSquared also would like to see the Federal Communications Commission and the NTIA “conduct the second round of tests on high-precision devices at an independent laboratory to ensure objectivity and transparency.”

The fact that LightSquared efforts represent a \$14 billion private investment that will create 15,000 jobs over 5 years and ultimately lower prices for consumers, Carlisle said, would seem to justify further investigation of these issues on the FCC’s part.

LightSquared has been grappling to put to rest these interference concerns for several months now. In an interview with TMCnet last year, LightSquared Chief Marketing Officer Frank Boulben said that the organizations raising these complaints primarily are device manufacturers that have had eight years to adjust their products to allow them to coexist peacefully with new technologies in the FCC-approved ATC spectrum, but instead elected a strategy of “squatting” on LightSquared’s L-band spectrum.

When the FCC approved the ATC spectrum, which is satellite spectrum repurposed for terrestrial use, everybody knew that some tweaks would have to be made to avoid interference problems between the existing satellite and new ATC technologies, Boulben indicated. GPS receivers in smartphones from Apple, RIM and Samsung already contain five- to 25-cent filters to prevent such interference, he added, but not everybody in the GPS device space has been as proactive in employing such interference avoidance technologies.

Boulben noted in the mid-2011 interview that LightSquared already had expended considerable effort to test for interference and amend its initial network build out plans in light of the GPS interference concerns, which came to light in 2010. The company offered to reduce by 50 percent the theoretical power limit of its cell sites and to use the (1525-1535MHz) spectrum that it says is 99.5 percent free of interference concerns during the first phase of its build and the other spectrum in the second phase, so it has more time to find a fix for the more problematic spectrum. The initial plan was to use the spectrum, which LightSquared is getting from Inmarsat, in the opposite order.

**Jeff Carlisle of LightSquared  
went as far as to say GPS device  
makers “rigged” their test results.**



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# INTERNET TELEPHONY Congratulates Winners of the UC Product of the Year Awards

With the rise and snowballing expansion of mobile networks and applications, communications, connectivity and collaboration seem to be everywhere. Unified communications solutions that intelligently bring together real-time and recorded voice, IM, presence, audio and video conferencing, and other capabilities continue to improve and become available to a broader cross section of the populace.

Here are some of the best and brightest offering on the UC solutions front. Congratulations to the UC Product of the Year Award winners!



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**AppNeta**  
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**AVer Information Inc.**  
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By Erik Linask

## Readying for the Cloud Era

Sansay recently announced proven interoperability between its VSXi session border controller and BroadSoft's BroadWorks platform extending its

reach into a new potential customer pool of more than 400 operators. At the same time, it now offers BroadSoft operators an alternative to Acme Packet.

"The industry will benefit from the added choice and we're excited about being able to help some of these Broadsoft operators with their growth plans," says Dave Walters, vice president of marketing at Sansay.

As operators either move to VoIP or extend their service capabilities by moving from voice-only to next-gen communications services, their new offerings are going to require mediation at the network edge for routing, interconnect, signaling, security and transcoding.

In fact, operators won't have a choice. While they have been living off voice minutes for a long time, the new digital world has stripped the revenue from voice and moved it to multimedia and other higher bandwidth and profit services. Services like SIP trunking have helped usher in IP communications, but users have also experienced other over-the-top offerings that will force their carriers to innovate and roll out new services – and quickly.

Speed to market isn't an issue. With BroadSoft, Sansay has little customization work for BroadWorks user installs because BroadSoft uses one main code stream, meaning that once interop has been proven, the extension to any BroadWorks user becomes perhaps not quite plug and

play, but a straightforward process. This is important, not only because it reduces time to market, but because it also reduces complexity, driving costs down in a market that is already struggling.

As BroadSoft and its customers continue to grow, they will be adding wireless overlays to their existing fixed line services and introducing new cloud-based services. Among Sansay's strengths is its scalability, being able to switch more than 12,000 calls per second in a 2U unit. That speed and time to deployment will prove a benefit as the cloud, in particular, becomes increasingly popular. (And that's important, given the 2011 Future of Cloud Computing Survey by North Bridge Ventures indicates that three-quarters of respondents expect to have more than half of their computing power in the cloud within five years.)

In fact, at some point in the not-so-distant future, network-based call and session control will drive the complete migration from premises-based PBXs to managed cloud services – effectively bringing the mobile model to the fixed-line space. BroadSoft already has a set of enhanced and vertical-specific features designed for cloud delivery. These will soon become mainstream capabilities with traditional voice carriers. But, regardless of where services originate, they will still require session control elements to mediate between the different network interchanges.

"Our platform can fit the cloud model equally well," says Walters. "Whether it's in the 4G wireless space, in the cloud, or across fixed IP networks, there is going to be more need to IP-to-IP interconnect, and we see ourselves fulfilling that role as more and more IP endpoints and services come online."

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At some point in the not-so-distant future, network-based call and session control will drive the complete migration from premises-based PBXs to managed cloud services – effectively bringing the mobile model to the fixed-line space.

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## Ease of Use - High Performance - Smart Design

The PJP -50USB is a conference microphone speaker with a built-in high performance echo canceller. When connected to a PC with a USB or audio cable, the PJP- 50USB enhances your softphone or Web conferencing system for a multiperson response that is as smooth as video conferencing. Eight of the PJP-50USB's high sensitivity microphones achieve equivalent or better audio pickup than twice the number of conventional mics. The PJP-50USB also supports HD audio codecs including AAC-LD.



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Professional Series



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