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Editor's Notes

Skype, Networks and Meta-Networks

by Richard "Zippy" Grigonis

It's funny how the most interesting thing about eBay also happens to be the one thing they're trying to unload faster than a hot potato – namely, Skype, the world's most popular IP communications application/service. To be precise, in 2010 the online auction house plans to spin off Skype in what in years past would have been an Initial Public Offering (IPO) of staggering proportions.

Why eBay acquired Skype in the first place is a bit mystifying – at the time eBay claimed that buyers and sellers in the midst of an online transaction could confer with each other using VoIP. The fact that both buyers and sellers already had conventional telephony services and didn't tend to speak to each other didn't seem to affect the decision to acquire Skype. Once acquired, the promised intensive integration never took place.

Getting away from eBay is perhaps the best thing that could possibly happen to Skype which continues to thrive and evolve despite eBay's bizarre management style. Although long thought of as a consumer phenomenon, in March 2009, Skype launched Skype for SIP, a service targeting business users. (About 35 percent of Skype's users are business people, interestingly enough.)

Skype, wildly popular as it is, is not a network in itself, but a sort of meta-network, running your voice and video communications from your desk and mobile devices over the Internet. It's exactly the kind of "non-telco telco" that everybody thought would have completely usurped circuit-switched voice by now. Instead of a traditional telco network that owns and operates all of the communications infrastructure, Skype piggybacks atop other networks (particularly the Internet), which has led to accusations that it's a parasite on the world's network operators.

According to TeleGeography, Skype is now not just the world's largest VoIP provider, it's the world's largest international pseudo-telco anyway you look at it: During 2008 it handled 33 billion (or 8 percent) of the world 384 billion cross-border minutes. Other VoIP providers handle a total of 23 percent of international minutes, and the PSTN operators take care of 69 percent, a decrease from the 73 percent of total international minutes they transported in 2007. But not all of Skype's minutes are free – 8.4 billion crossed over to the traditional circuit-switched PSTN via the Skype-out sub-service, infusing some needed cash into the Skype coffers. Users think it's just one network.

Indeed, Yours Truly expects that all networks will eventually talk to each other. Just as the Internet is a meta-network or "network of networks" in the hardware sense, so too will be see a pan-communications network in the software/service sense, with the Internet as its ultimate underlying substrate. This reminds me of an amusing tongue-in-cheek post recommending that, "all these social community sites could be merged into one called, say, MyFlickeringFace".

I wouldn't be surprised if somebody like Google has a grand plan for a global (or even cosmic) meta-network wherein any device can tap into the web in any way you like using any kind of provider running any network (wireline, mobile, WiFi hotspots, satellite, etc.), and yet all identification, authentication and interoperability details are taken care of as a background process. Such pan-communications architecture, a sort of super IMS or "World Open API", would enable anyone to develop any type of app for a world market. NGN

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Dilithium Networks Takes on Mobile Video

by Rich Tehrani

The mobile video opportunity grows by leaps and bounds and with bigger mobile screens and faster wireless broadband networks, we can expect larger amounts of revenue to be derived from mobile video by carriers and content providers.

Dilithium Networks (www.dilithiumnetworks.com), founded in Sydney, Australia, offers converged video solutions, with customers in 60 countries on five continents. The company grew out of the participation on the ITU-T H.324/H.324M workgroup by Dr. Marwan Jabri, a company founder and CTO. Jabri spent nearly 20 years developing intelligent signal processing multimedia coding and transcoding algorithms, as well as some early protocol stack implementations of the H.324/H.324M standard. Today Jabri's company, Dilithium carries on and has brought his work to commercial fruition, as it provides pioneering mobile video solutions for network operators, content owners, and aggregators across 2G, 3G, and WiFi networks. They're the global market share leader in terms of their 3G-324M/H.324M/H.324 Protocol Stack and inventive Unicoding technology for high performance intelligent media transcoding. Indeed, Dilithium pioneered the field of 3G mobile video. Their software can be found in many phones.

At CTIA Wireless recently, I ran into Paul Zuber, the founding CEO of Dilithium. He told me that Dilithium is enjoying 400 percent growth year-over-year in the areas of mobile, broadband, Internet, mobile video and surveillance applications. 85 percent of their business occurs outside of the U.S. Some readers may know Dilithium as a world leader in multimedia gateways (said to have a 60 percent global market share) including their DTG 3000 Multimedia Gateway family that provides a multimedia solution for cellular, IP, and PSTN convergence as networks evolve towards the IMS (IP Multimedia Subsystem) architecture. Others may be familiar with their Video Ringback Tone Solution, VT-Ring, or their Integrated multimedia gateway and service creation environment, ViVAS, or their QoS Video Telephony Probe for QoS, or perhaps their Video Refresh technology that can eliminate video corruption in mobile networks.

Zuber says there's been increasing demand for anything related to supporting video and services, and social networks are starting to have an impact, as is the craze for user-generated content. Dilithium supports content adaptation so any content can travel to and be experienced via any codec to any device – it's all an outgrowth of their transcoding, transrating, and transizing expertise. They have end-to-end solutions for 3G networks and a powerful service creation platform — Zuber says they can roll out new services in just six weeks. This is pretty remarkable, especially when you consider that the modern network is a jumble of differing standards, codecs and bit rates. Dilithium's technological expertise also extends from mobile (2.5G, 3G, EDGE, Smartphones, WiFi) to set-top boxes. The customers themselves, of course, are agnostic to access methodology, they just want somebody like Dilithium to make it easy for them to access content, and for it to be a high-quality experience, regardless of whether it's delivered by H.264, H.263, Flash, Windows Media, Quicktime, or what have you.

"We enable protocol translation," says Zuber, "but bringing IP to the mobile world is a tougher proposition. The U.S. is still an emerging market. Things are more advanced on the Internet than on wireless. Still, we've had wins with many Internet aggregators and carriers, and they're starting to launch services. We've helped Vodafone, for example, as well as China Telecom, SingTel, and so forth. Pricing plans and business models are starting to take shape. Our cash flow is positive and we're profitable."

I got a chance to demo the technology on an iPhone and was blown away by the quality of the stream over the AT&T 3G network. I happened to be driving in a portion of Connecticut with poor cellphone coverage and was surprised that the stream kept playing in areas where I remember having problems talking. I would imagine most users would be impressed with this technology as well and pay serious money for the ability to stream live TV to their cellphones. Obviously this capability exists today but the screen size of an iPhone makes it an especially compelling viewing experience and I would imagine AT&T should be in a big rush to roll this out to the masses.

I would of course precede all programming with a stern warning about the dangers of watching TV as you drive which as you can imagine can be quite distracting as it was to me. **NGN**

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http://next-generation-communications.tmcnet.com

The Next Generation Communications Global Online Community, sponsored by Alcatel-Lucent and powered by TMCnet, is primed to become the de facto resource for information and news. The community is designed to keep Service Provider and Enterprise decision-makers up to date on the latest trends driving next generation communications.

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Contents

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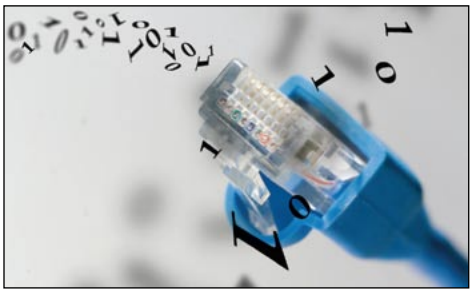
Cover Story

In Every Issue



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http://ipcommunications.tmcnet.com

www.tmcnet.com/7469.1

MetaSwitch Inks Agreement to Resell Acme Packet Session Border Controllers

Acme Packet and MetaSwitch recently announced that they are expanding upon their long-term interoperability relationship by entering into a reseller agreement.

Together MetaSwitch's core networking products and Acme Packet's SBCs offer a joint solution providing core session control, media/signaling gateway, application server and SBC functions, and scalability to meet the network migration requirements of service providers of all sizes.

According to Seamus Hourihan, vice president of marketing and product management at Acme Packet, "Building standalone voice, video and multimedia services over IP network islands is not sufficient. Instead, services must be built and interconnected in a way that ensures security and peak performance end-to-end."

Over 50 service providers have already deployed joint Acme Packet and MetaSwitch solutions.

www.metaswitch.com
www.acmepacket.com

www.tmcnet.com/7471.1

ng Connect Program Welcomes New Members

Atlantic Records, Kyocera Communications Inc, LearningMate and MediaTile to join the multi-industry initiative for 4G, LTE and other ultra-high bandwidth networks

Alcatel-Lucent's ng Connect Program continues to expand as industry interest in next generation networks and services continues to grow at a rapid pace. The ng Connect Program recently announced four new members including companies from the music, telecommunication and education sectors, bringing the total number of companies in the program to 18 in the two months since its inception.

The ng Connect Program is a multi-industry initiative dedicated to establishing a rich and diverse ecosystem of infrastructure, devices, content and applications for both mobile and fixed broadband networks. The goal of the program is to facilitate an expansion of the revenue base for service providers and provide new opportunities for others in the value chain by helping bring new applications and services to market.

The new members include Atlantic Records, Kyocera Communications Inc, LearningMate and MediaTile.

www.alcatel-lucent.com

www.tmcnet.com/7470.1

Cisco Enables Cargo Management System at Vladivostok Terminal

A new Cisco Unified Wireless network has allowed the Vladivostok Container Terminal (VCT) to set up an advanced cargo management system that now monitors all arrivals, departures and movement of containers in real time, as well as register railway, truck and maritime transportation. The container terminal operations required

data transfer through an 802.11g wireless network with full coverage of the VCT territory, high resilience and the shortest possible outages. The deployment leverages Cisco Aironet wireless access points and adaptive monitoring and management systems that offer intelligent wireless network management, transparent integration inside and outside the offices, automatic set up of access points, and more secure outdoor wireless access. The solution uses dynamic algorithms to support automatic tuning, optimization and troubleshooting which is critically important for enabling reliable and secure business applications.

The deployed by LANIT DV a Premier Certified Cisco partner operating in the Russian Far East.

www.cisco.com
www.lanitdv.ru.

www.tmcnet.com/7472.1

LTE Mobile Broadband Market to Generate More Than $70 Billion During Next Five Years

A new report from Juniper Research predicts that the LTE mobile broadband market will generate more than $70 billion in revenues for mobile operators within the next five years.

According to Juniper, LTE will create a "new connected era for devices such as portable games consoles and digital cameras." As such, it will "bridge the gap between the mobile and consumer electronics worlds."

LTE's main markets will be the developed nations of North America, Western Europe, the Far East and China, which together will account for 90 percent of the market by 2014. The report also found that LTE will drive further adoption of mobile commerce and payments. What's more it will contribute significantly to the growth of the "mobile Web" and will also drive further acceptance of mobile e-commerce among consumers.

The report — which includes a comprehensive six-year forecasting suite of critical figures, data and analysis on enterprise and consumer subscriber take-up, devices, network access via dongles, cards and embedded capability, chipset shipments, ARPUs and service revenues — finds that the current recession will not have much of an impact on LTE's long-term prospects.

www.juniperresearch.com

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www.tmcnet.com/7473.1

Motorola Unveils eNodeB Wireless Broadband Radio

Motorola, Inc., recently unveiled its new eNodeB Wireless Broadband Radio (WBR 500r), a long-term evolution (LTE) remote radio head.

According to the company, its new WBR 500r advanced eNodeB features: OFDM (orthogonal frequency-division multiplexing) technology to increase coverage and capacity for improved performance — even in challenging RF environments; enhanced power efficiency for reduced energy consumption; advanced self organizing network (SON) implementation; and flexible deployment options for operators.

The features are designed to enable operators to build and operate their LTE networks at a lower cost. Motorola's LTE solution also incorporates evolved packet core (EPC), high-speed backhaul, network and device management solutions, and a complete portfolio of professional services.

www.motorola.com/lte

www.tmcnet.com/7474.1

Skype Available on iPhone, Blackberry Devices

Skype announced that its Skype for iPhone application is available for download from the Apple App Store. The new offering also adds Skype calling and instant messaging (IM) to any second-generation iPod Touch with a compatible headset and microphone.

According to the company, the application delivers Skype capabilities such as:

- Free Skype-to-Skype calls (over WiFi) worldwide
- The ability to call landline or mobile phones at low rates (over WiFi)
- Send/receive instant messages to/from individuals or groups via 3G, WiFi, GPRS or EDGE (whichever is available)
- Receive calls to a personal online number on Skype
- See presence of Skype contacts

Skype for iPhone requires a WiFi connection to make free Skype-to-Skype calls or low-cost Skype calls to mobiles and landlines.

Skype also recently announced that the lite version of Skype — a thin Skype client for mobile phones — will soon be available as a free download for BlackBerry smartphones. A beta version will be available in May for the BlackBerry Bold and BlackBerry Curve smartphones, with support for other BlackBerry smartphones coming later.

www.skype.com
www.apple.com
www.blackberry.com

www.tmcnet.com/7476.1

Telcordia Enhances Telcordia IP Assure Solution

Telcordia recently announced the availability of the latest version of its Telcordia IP Assure, a flexible, automated, non-intrusive software solution designed to offer total IP network awareness keeping the network safe, secure, continually available and fully compliant. The enhanced version is suited for diverse, large-scale networks such as those deployed at Fortune 2000 companies and outsourcing service providers.

As an element of the Telcordia Service Assurance Suite, Telcordia IP Assure offers:

- A web-based hosted service model for management of network infrastructure
- A highly scalable distributed architecture
- Support for a wide range of new IP network devices and protocols
- A hierarchical tenant/user model that enables the provisioning of network resources that support separate accounts, direct user data and customized functionality for each tenant.
- Advanced executive reports for historical and organizational performance analysis of operational efficiency and service-level agreements.

www.telcordia.com

www.tmcnet.com/7475.1

Digicel to Deploy Alvarion WiMAX Throughout Caribbean

Alvarion has reportedly signed a master supply agreement with Digicel Group, a large mobile operator in the Caribbean. As Alvarion's strategic partner, Digicel will deploy a WiMAX network throughout the Caribbean region in a major initiative over the next few years.

According to the agreement, Alvarion, together with its OPEN WiMAX partners, will provide an end-to-end WiMAX offering based on Alvarion's Mobile WiMAX solution. The master supply agreement also includes a comprehensive package of professional services.

Digicel Group picked Alvarion following a successful commercial deployment of its 802.16e solution in Grand Cayman in 2007. Following the success of the Grand Cayman deployment, Digicel is deploying WiMAX in additional markets to deliver primary voice, data VPN, and broadband to both corporate and residential customers.

www.alvarion.com
www.digicelgroup.com

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Participants in this community will be better prepared to make the proper decisions when it comes to selecting enterprise communications solutions based on Asterisk.

http://asterisk.tmcnet.com

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by Ronald Gruia

App Stores: the Latest Topic du Jour

A recurring theme at CTIA was the advent of the application store. In my previous MWC roundup article, I had already mentioned that app stores already had gotten quite a bit of attention in Barcelona, with the with launches from Nokia (Ovi Store) and Microsoft (Windows Marketplace).

CTIA confirmed that trend, when RIM announced the availability of its own application storefront, BlackBerry AppWorld (which had been originally announced this past October). Applications are already available for download in the US, UK, and Canada, and initially, they will be only for devices having a trackball or a touch screen. The company expects to have roughly 1,000 applications available on AppWorld for download over both cellular and WiFi networks. RIM plans to apportion the revenues for applications sold through its storefront on an 80/20 basis with developers, which compares favorably with the 70/30 split for companies such as Apple, Google, Microsoft and Nokia (although it is important to note that Google passes the 30 percent balance for Android applications onto the operator). The accompanying table offers a quick at-a-glance view of all application store fronts.

Player	Revenue Share	Payment Method	Carrier Share	Minimum Price	# of Apps	Online Date	Device Support
Apple iTunes	70/30	iTunes	Not disc.	Free	~15,000	07/11/2008	iPhone
Google Android Market	70/0*	Google Checkout	30	Free	N/A	10/22/2008	Android devices
Microsoft Windows Marketplace	70/30	Credit card or carrier	No	Free	>20,000	TBD	Win Mo 6.5
Nokia Ovi Store	70/30	Credit card or carrier	TBD	TBD	N/A	Exp. May 2009	S40/S60 devices
Palm App Catalog	TBD	TBD	TBD	TBD	N/A	TBD	webOS devices
RIM BlackBerry App World	80/20	PayPal	Not disc.	$2.99	~1,000	04/01/2009	RIM devices

The interest in app stores in not surprising, given the success of iPhone applications, which forced vendors such as RIM, Nokia, Palm, and Microsoft, among others, to follow suit. But other catalysts have also driven interest in app stores. One example is the proliferation of smartphones and QWERTY devices along with the growing popularity of touch have enriched the end-user experience in messaging and Internet surfing. Another factor is the advent of faster networks, which has driven data growth at a robust 30-50 percent annually.

However, as LTE looms over the horizon, the ROI for 4G services for operators who are in the "smart follower" category (rather than "early adopter" or *avant garde*) remains overhung in part because revenues are not growing exponentially with data traffic and the future business model is at risk if nothing changes. Data backhaul needs are almost exponential, potentially 3 times the voice cost (as presented by Telus' CTO Ibrahim Gedeon in Barcelona at MWC), with wireless data demand increasing as prices decline.

In other words, we are facing a scenario in which data revenue and traffic are becoming decoupled, with service providers not attracting usage with content, but by data volume. This makes future 4G investments and cost structure somewhat difficult to justify with today's data revenue model. So naturally, service providers are beginning to turn their attention to applications, and hence vendors are trying to meet that demand with the app stores. But will app stores by themselves do the trick? Some techie pundits are advocating a more horizontalized network that can allow operators to be more agile in the introduction of new services. But perhaps a change in the business model is also the answer, and there is a success story in Japan that corroborates that. NTT DoCoMo's i-mode service, which was launched back in 1999, features small screens and slow data rates (around 9.6 kbps). However, the i-mode business model was wide open, with APIs and SDKs being provided for third party developers to write new apps without any access restrictions.

The twist in the i-mode model was DoCoMo's "bill-on-behalf" (which was essentially a 9% fee that the app developers paid to DoCoMo for billing services). This 2-sided business model proved to be a success, with over 100,000 new applications being introduced in over 3 years, and more than 15,000 apps using the billing service. This was the key behind NTT DoCoMo's success in data services (it has the highest data ARPU in the world).

Telcos have used 2-sided models in the past via toll-free (1-800 services available in the US and Canada). The Bell companies offered these services to enable businesses to connect with their customers and prospects and enhance their customer care. However, not much evolution occurred in this vein until the advent of i-mode. As operators embark on the transition to the NGN, this approach can certainly offer some new interesting possibilities. NGN

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Introducing the
IP-PBX Global Online Community

If you are in the market looking to purchase a new phone system, chances are you'll be looking at an IP PBX. The IP PBX market has been growing steadily, which means there are a plethora of choices and options. And, with all the choices you face, it can get quite confusing.

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by Grant Lenahan

What Operators Must Do To Participate in Emerging Revenue Sources
(Looking Beyond The "None Shall Pass" Business Model)

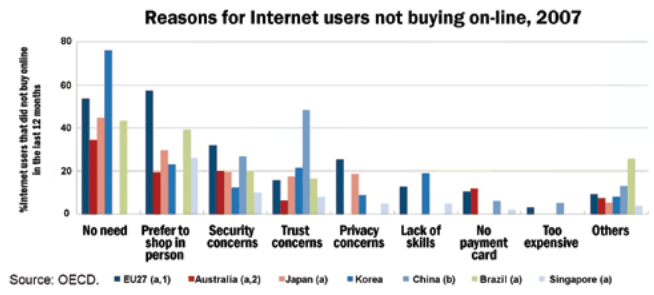
This is the third in a 7-part series that looks at how our industry will change, survive and, in fact, grow as we transition from our various historical roots to the future that will be powered by NGNs.

Last issue, I argued (and hopefully convinced you with a combination of logic and supporting facts) that content, information, commerce and advertising offer the best opportunity of revenue expansion for the communications industry — both broadband and mobile. Gone are the days of "none shall pass," of the medieval approach to collecting revenues. No, for emerging revenue sources, we have to earn it. The more value we provide, the more revenue we may receive. Simple.

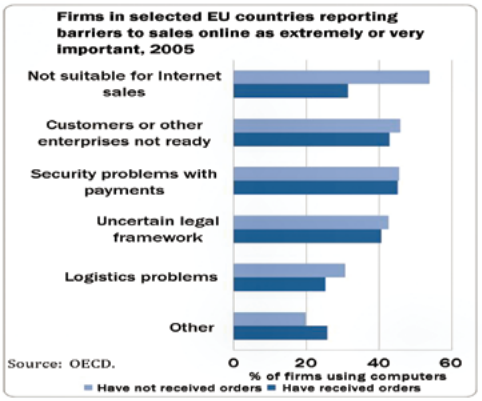
Consequently, this month we'll look at what I believe to be the only logical question: "So, how can we make money on those?" This is a particularly good question since nearly all content, advertising and commerce originates with third parties. In fact, the world already has an excellent "existence proof" called the World Wide Web. In that model, content owners and content retailers provide all the content and services and our industry provides the dumb pipes. In other words, we are cut out entirely, and receive zero revenue from the cornucopia and its associated global trillions.

One definition of insanity is repeating the same action and expecting a different result. Previous forays resulted in the proverbial "dumb pipes." How can we avoid having history repeat itself?

Fortunately, it turns out, consumers and e-commerce retailers don't like the outcome much more than we did. And, neither do the original architects of the Internet. Finally, in a perfect storm, they all largely agree on the drawbacks of the "over the top" model. Their words are slightly different, but they tell a remarkably similar story. Follow it, and we have a blueprint for how communications carriers might add value and insert themselves into the middle of the content–advertising–information–commerce value chain. So, let's look at this data. Some of the best data comes from the OECD (Organization for Economic Co-operation and Development). It is especially powerful, because they polled both consumers and merchants and, therefore, can see the similarities in what each wants. Figure 1 summarizes the reasons that some consumers do NOT shop online.



In a nutshell, they are concerned with security, privacy, difficulty (complexity of the process) and often don't have a suitable payment method, such as a major credit card. These are all problems that communication service providers (CSPs) can solve or help to greatly reduce — it's the value-add that is needed to avoid the dumb pipe scenario. Merchants voiced similar concerns. The OECD data for merchants is shown in Figure 2 and can also be summarized as concerns over security, trust, technology/complexity, and payment methods.



But surely, these must be the outliers. The Internet has proven itself a fabulous vehicle for innovation. These are just bumps in the road that will be overcome in time, right?

Well, yes, I suppose so. But overcome how?... and by whom?

In January of 2006, *MIT Technology Review* published a cover-story entitled, "The Internet is Broken," by David Talbot and David D. Clark, now at MIT, but originally the Chief Protocol Architect of the Internet Advisory Board (IAB) from 1981-89. They concluded that the Internet has moved beyond its original goals and needs enhancements. As the Internet moves toward more business and commercial applications, it requires a core capability to authenticate — and thus securely authorize transactions and communications. Much of the fear on the Internet today comes from various kinds of fraud — based on the fact that no one is truly authenticated. Similarly, the user experience is made more complex by the fact that everything — from preferences to credit card numbers — must be duplicated and maintained across dozens or hundreds of sites. This is both complex and insecure.

This is good news. CSPs have strong infrastructure to authenticate users, beginning with things like mobile Subscriber Identity Module authentication and physical loop ID. Moreover, they also have infrastructure to handle transactions, micro and macro charges, separations, settlements, limits, authorizations, ad delivery and context identification(such as where you are and what content you are requesting).

A value proposition is emerging. One based on becoming the authentication, authorization, personalization and charging proxy for many online services and merchants. No more giving credit card numbers to unknown merchants or sharing personal data without approval. No more sending adult material to children. Enter the age of "enter once, use many". Less typing and updating into notoriously different and inscrutable web site formats.

Classic management theory teaches to invest in core competencies — things that will enable differentiation — and to outsource common functions to the best, lowest cost supplier. Auto makers buy bearings, tires and glass but do their own styling and motors. Given the choice — e-merchants will likely do the same, paying CSPs to perform these commodity functions for them — and do a better job at it along the way.

There's a simple beauty to this vision. Network companies do what they do best: secure, complex, high-scale transactions on a more intelligent network. A smart pipe. **NGN**

Grant F. Lenahan is Vice President and Strategist, Service Delivery Solutions at Telcordia Technologies (www.telcordia.com).

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by Marc Leclerc

Context is King

A growing number of people believe that the Internet, most particularly the Web 2.0 world, fits hand-in-glove with IMS and significantly expands commercial opportunities for network operators. Web 2.0 services such as social networking interact with traditional telecom offerings in many ways. So, how does IMS integrate with the Web 2.0 concept in ways that can generate revenue for carriers?

First, let's look at how money is made through Web 2.0 services. The most obvious avenue is through advertising, when getting "eyes" to your site results in getting paid for placing ads where visitors see them. There are some subscription-based services, but the bad perception of security issues, such as identity theft on the Internet, creates an attitude where customers are reluctant to disclose credit information to unknown companies.

How can IMS improve the revenue picture? The answer isn't just communications services such as voice, messaging, and video, but the full utilization of the contextual information that IMS provides in a standardized way. Contextual information use includes identity, presence, group lists, location, session and client capabilities, and file transfer.

We are now seeing the beginning of services that merge the benefits of telecoms capabilities with the Web 2.0 model. Web services such as social networking compliment perfectly the presence, availability, location, call handling, group list management, and file transfer capabilities of IMS.

Starting with a basic example, context can turn into cash. YouTube has been criticized as having no clear way to monetize its large subscriber base. However, Apple and Amazon have recently announced they will offer YouTube users a way to purchase wares related to the videos they are watching. For instance, watch a video reenactment of the Battle of Hastings and Amazon.com offers a book on the battle while iTunes recommends downloads of medieval chamber music.

Sounds easy, right? That's why it works. Contextual information initiated services seem intuitive and obvious the instant after one hears about them. Results are achieved by *using context to anticipate what a person might want to do next,* and making it as easy as possible to follow that impulse.With IMS, strong identity management is linked to user profiles and their history which makes targeted advertising possible. These actions generate more revenue for each ad placed — for both the advertiser and the "broadcaster." Examples where IMS integration adds user value include services such as searching on a mobile device for "washing machine parts" on a Saturday, where the mobile's location is used to present a map with nearby repair shops open during the weekend. Or a child's request to purchase a PG-rated film from a home Video-on-Demand service sends a "parental authorization" request to Mom and Dad's mobile phone whatever their location.

Ultimately, three principles of context-based services are required for success:

1. Allow people to act on ideas and impulses that come naturally by replicating a familiar "real world" way of doing things.

2. Place yourself in the mind of your user and imagine what else they might be thinking while engaging in the activity.

3. Make it possible for your customers to immediately act upon "likely impulses."

Let's look at a more extensive example, this time using the communications and experience sharing capabilities of IMS to extend Web 2.0 apps.

One day, a man browsing a social network is reminded that it is his friend's birthday. He sees that his friend is on a trip to a neighboring city, but is available now on his mobile phone. By looking at his buddy list to see which of his other friends are also available at the moment, he invites them into a conference call to surprise the "birthday boy" with a roaring rendition of "Happy Birthday to You!" Several of the friends send him electronic birthday cards and congratulatory videos while they chat on the call. To top it all off, a generous friend sends him an electronic gift certificate for dinner at a steak house located nearby.

The story above shows contextual information of typical behavior of people celebrating a birthday combined with mobile services of people spread across a distance in order to generate value. An enterprising carrier could easily package a menu of related services such as graphics, musical services, gift purchases and birthday advisories. These contextual activities can generate advertising revenues and sales commissions, and naturally lead to increased usage of revenue-generating network services.

We are now seeing the beginning of services that merge the benefits of telecoms capabilities with the Web 2.0 model. Web services such as social networking compliment perfectly the presence, availability, location, call handling, group list management, and file transfer capabilities of IMS. As consumers and innovators, we eagerly look forward to the new services that will come from the evolving and merging telecom and Web 2.0 ecosystem where context is king. **NGN**

Marc Leclerc is Manager, Global IMS Expert Center, Ericsson (www.ericsson.com).

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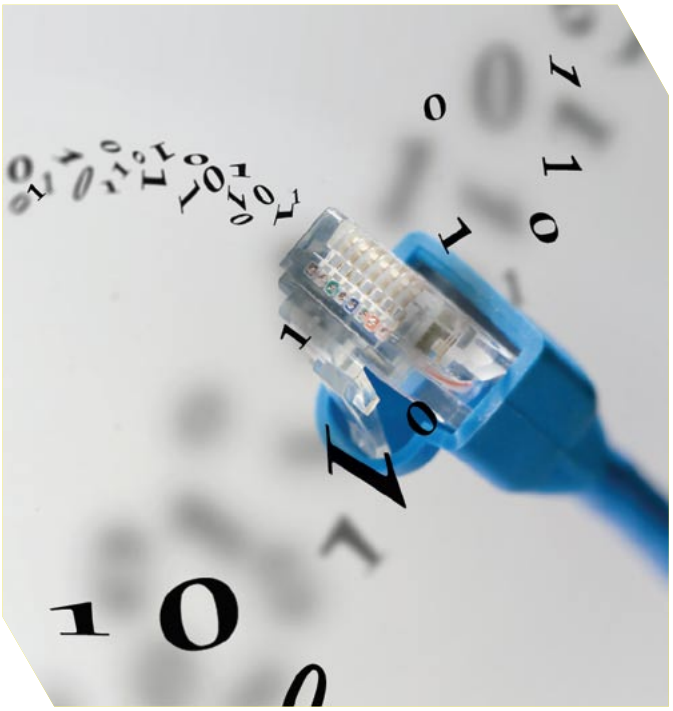
By Richard "Zippy" Grigonis

IP Communications and the NGN



The Next Generation Network is founded upon packet-switched communications, the principal packet protocol being IP. Indeed, without IP, NGNs would look very much different (ATM phones, anyone?). Unlike the old circuit-switched TDM network of the Bell System, IP "levels the playing field" in terms of application development, and the whole concept of IP and the NGN separates applications/services from the infrastructure, enabling service providers and third-party developers to quickly formulate and "plug-in" new services. IP will even travel wirelessly to your mobile phone in the upcoming packetized 4G world, and will support Voice Call Continuity (VCC) and other forms of seamless mobility, extending services and advanced functionality anywhere you can get a signal. Despite IP's ability to more efficiently use network "pipes", more bandwidth will be necessary as multimedia apps begin to curry favor among both businesses and consumers.

An Appetite for Broadband

ADVA Optical Networking is a global telecom equipment provider specializing in innovative Optical+Ethernet transport solutions for building next-gen networks. They're known for their scalable FSP product family; their products can be found in 200 carriers and 10,000 enterprises worldwide.

Ron Martin, ADVA's President of North America and Global Chief Strategy and Marketing Officer, says, "We've never really targeted the TDM or traditional SONET transport markets and while we know and recognize those are very relevant, we cast our lot about 12 years ago with the idea that eventually the network was going to evolve to IP using Ethernet transport over WDM and that's really where we focus our efforts. That has really come home now. We see the market differently perhaps than we did back in 2001, when we went through the dotcom bubble economic downturn and we were all struggling to find revenue. The difference is that bandwidth expansion back in that time was primarily driven by businesses, government and medium-to-large-sized institutions, and today it's driven a lot more by consumers. To provide the consumer experiences that they're demanding, and make those usage-sensitive with SLAs and Quality of Service [QoS], and be able to bill for those services, service providers, be they mobile, traditional carriers or MSOs, are learning that they must aggressively convert their networks to Ethernet. In particular we see this in the case of cell tower backhaul and in the carrier infrastructure networks."

"More than ever, consumers are not only demanding how they get their information and entertainment over what media," says Martin, "but they're also demanding to be able to control the time, the place where they get it and rather than just receiving content, they're now producing content and sending it the other way in the network, all of which causes a continuation of bandwidth growth. It hasn't made us immune to economic conditions, but it has perhaps made us a little more resilient than we were back in 2001."

"As we talk to our customers," says Martin, "they're pushing us very aggressively right past 40 gigabit transmission into 100 gigs. We're doing some creative things in that area, and business for us has actually been pretty good. This overall appetite for broadband is pretty much driving our business in the direction that we want it to go."

Martin adds, "Two different camps are evolving. One says 'We want you to build 40 gig and 100 gig 'muxsponders' [a transponder with client signal multiplexing capability] and WDM multi-degree ROADMs [Reconfigurable Optical Add-Drop Multiplexer] for meshing our networks together because fiber is scarce and we must achieve greater clock speeds through available fiber.' We're responding to that challenge as are our competitors, providing that capability and always looking ahead to the next generation of 100 gig technology. But the second camp consists of customers who say, 'We're not constrained as to where we situate our data centers — we can put them where there's an abundance of fiber. And if we can do that, we don't have to build out these complex mesh networks that need expensive multi-degree ROADMs, and we're not going to do a lot of G.709 framing and those kinds of things. Just give us colored XFPs [Small Form Factor Pluggable, hot-swappable, protocol-independent optical transceivers for SONET/SDH, Fibre Chan-

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nel, gigabit Ethernet, 10 gigabit Ethernet and other applications, including DWDM links], let us build point-to-point networks, let us do it at short lengths of less than 60 kilometers, which is a kind of breakpoint, because if we can do it at shorter distances we can add some pretty creative modulation schemes and get to 100 gig transmission rates fairly quickly, and if we're not doing WDM we can do it very cost-effectively. It's very applicable to those customers that say to us, 'We're not constrained by where we locate our data centers, so just give us quick and cheap point-to-point connections, and if it breaks we'll replace it so we don't need a lot of GMPLS [Generalized Multiprotocol Label Switching] in our network, for example.' They just want to be able to haul data."

"We postulate that, to achieve a lot of quick bandwidth for wireless backhaul," says Martin, "these providers can place equipment in tractor trailers, pull up to a parking spot within 100 yards of a manhole, pull some fibers out to that truck and then go wireless from there to a 4G WiMAX or LTE network handoff or wherever they need to go. It's radical thinking, but then we have some radical customers."

A Tale of Two Networks

Jeff Baher, Senior Director of Product Marketing, at Ericsson for the Product Area of Packet Networks, says, "Ericsson's Redback acquisition a few years back was an important step forward for the company, as they adopt more packet technologies and architectures. It's part of a larger transformation that we are working very closely with our customers to enable, and it's a transformation predicated on adopting a lot of packet technologies, products, and so forth. But we also see it as a significant opportunity from a carrier's perspective, to derive greater efficiency in the network, lower the cost structure of service delivery and, from a subscriber perspective, it's an opportunity to create a whole new suite of services. At the end of the day it's all about a new experience for both residential and business subscribers."

"We think that while there's a significant technology discussion, it really plays out as to how we relate to the network and we we use the network for," says Baher. "Right now there appears to be two very different types of networks that are in play. First, there's a mobile network that's typically more solutions-oriented and more mature in that mobile progression such as 2G to 2.5G to 3G are much longer in nature and, as a result, the adoption of technologies and the approach to technologies has been a bit different when you compare them to what we've seen on the wireline side which has been arguably more aggressive adoption of IP technologies. Just in general the cycles or generations that we've seen on the wireline side have progressed at a much faster rate. So there are different cultures and philosophies behind the mobile and wireline networks, making it an interesting backdrop to the industry as a whole. But there is a reasonably clear vision on both our part and the carriers' part in terms of how these two kinds of networks can come together. The 'glue' in all of that is really IP and the packet technologies."

Application Awareness and Intelligent Networks

Tellabs' AssuredEthernet solution enables service providers to offer up to a half-million unique service flows per system with guaranteed verifiable quality of service.

Tellabs' new CTO, Vikram Saksena, says, "If you look at the overall IP space and how it has driven changes in the way people use applications, we're finding now that we're in a mode where the applications and services have continued to decouple from the network, and this is what people generally refer to as the 'over the top' model. Typically you have endpoints which are PCs or handsets, and the applications used are put there by media companies or social networking companies such as Facebook. The network is essentially transparent in between, although it's all IP end-to-end. But it really doesn't provide much value other than moving packets between the source and the destination. What's becoming a point of increasing concern to our customer base are the services, because they build the infrastructure for carrying information. However, the real 'value creation' basically happens at either the handset or at the application layer at the other side of the network."

"Tellabs has focused on innovation, and ideas for evolving our technology and how we can re-invent the value of the network infrastructure, so that our customers have a better ability to monetize their investments in network infrastructure. That essentially involves building more intelligence into the network itself through software capabilities, reflected in the industry as 'application awareness.' This is where networks in general will have a better idea of what applications are using the network and be better able to assign, allocate and manage bandwidth for different applications, so the end user experience is enhanced relative to an over-the-top model where everything is up for grabs and whoever tries to get more bandwidth will actually get it, but everybody else gets squeezed out in the process. This is because the network essentially runs in a unmanaged fashion."

"So we now have these notions in the NGN concerning application awareness and increasing intelligence in the network layers, not only at layer 3 — which is IP — but also layers 4 through 6, where a lot of session control and management occurs," says Saksena. "Now IMS [IP Multimedia Subsystem] is one aspect of the overall situation. IMS mostly deals with point-to-point sessions which are set up using SIP as a protocol. VoIP of course is good example of that. But there are many applications in an IP/NGN network which don't use SIP as the session control protocol. However, they still need the network to handle things more intelligently than it is able to do today."

"Tellabs now focuses on evolving its main solutions in mobile backhaul, business services and optical networking," says Saksena, "and make them more application-aware and service-aware so that our customers — the service providers — can better monetize these assets. There are a number of different initiatives in the product/platform category in which we are investing today to make that happen over the next two to five years. We see a big opportunity in reinventing the value of the network."

It's the Quality, Not Just the Quantity

U4EA Technologies supplies networking solutions including Multi-Service Business Gateways (MSBGs), wireless LAN controllers and APs, and signaling controllers that enable service providers and resellers to provide integrated, IP unified communications solutions to SMB, SME and SOHO customers. U4EA's all-in-one customer premises devices are supported by the company's revolutionary QoS (GoS™) technology,

which is designed to provide secure, reliable and cost-effective delivery of converged VoIP, data and video services.

Jim Greenway, Executive Vice President of Sales and Marketing, says, "We're pretty consistent with our mantra here at U4EA. We tout three forms of technology as our contribution to next-generation networking. The first is QoS. I was just in South America, and QoS resonates there big-time in that most carriers have lots of bandwidth in their network to accommodate IP now, and LANs have gone into the gigabit range, but when you get to what we used to call the Last Mile, or the WAN Access Link, that is rapidly, we think, becoming the new bottleneck, if you will, for unified communications. So we've really been having a lot of success showing people how all forms of IP traffic affect the network such as streaming video and presence, and everybody's Skype-ing and everybody's doing all of these things from the office or home office, and yet they've got to get onto the backbone network smoothly somehow. So we continue to believe that that will be fundamental to our success and I spent a lot of time last week talking to many South American service providers about this. We integrate QoS into our multi-service business gateway, which are all-in-one devices. These devices combine switching, routing, session control, VoIP gateway-ing, and so forth. For an SMB or branch office, the goal is to reduce complexity and the cost. So it's all done in one highly integrated, low-cost device."

"Then, as we've said, there's QoS for managing the WAN link," says Greenway. "What we do with our QoS is pretty much twofold. We ensure that if there are multiple real-time apps there, then you can actually decide how much bandwidth — how much of the WAN link — can be dedicated to each application. Moreover, what we do that our competition doesn't is to literally guarantee that you'll be able to use 90 to 95 percent of that WAN link. Otherwise, if it's a DSL link or even a T1 link, and if you've got even 25 busy employees trying to communicate into the network, you're going to run into problems."

"Third and finally, we can help providers save money because of the high WAN link utilization, for example," says Greenway. "For example, we just announced that SimpleSignal, a facilities-based complete network provider of business VoIP, will begin deploying U4EA's Fusion series MSBGs with SimpleSignal's hosted VoIP and SIP trunking services to SMBs. Providers say 'Wow, I use T1s in my SMBs and enterprise branch offices. I can now eliminate the need for me to tell my customers to buy another T1 at $400 to $500 a month, because I'm going to use 90 percent of the bandwidth and my competition is stuck at 40 or so percent, that's a big deal.'"

"Our second biggest focus is on mobility, in particular our award-winning Wireless LAN Controller product," says Greenway. "That has a number of differentiators: It scales from 2 access points to 25 using just software. Everybody else forces you to change out hardware. Its voice quality just got the highest MOS score ratings. It's other forte is signaling. SIP is king in UC, IMS and soon in video. We continue to do a great job of converting anything and everything we see into SIP to get it onto the service provider's backbone. But an interesting point here is video. We're partnering with Vidtel to deliver video services to SMBs by combining U4EA's Fusion series MSBGs Vidtel's new video calling and conferencing services, so video call quality is ensured and WAN bandwidth is fully utilized."

IP versus the Economy

Veraz Networks provides application, control, and bandwidth optimization products that enable the evolution to the Multimedia Generation Network (MGN). Service providers employ Veraz' MGN portfolio to expand their existing application suite and rapidly add customized multimedia services. The Veraz MGN separates the control, media, and application layers while unifying management of the network, thereby increasing service provider operating efficiency. The Veraz MGN portfolio includes the ControlSwitch, Network-adaptive Border Controller, I-Gate 4000 Media Gateways, the VerazView Management System, and a set of customizable applications, including the verazVirtu softclient.

Dawn Hogh, Vice President of Marketing at Veraz, says, "One wonders what effect the present declining world economy has on the evolution of the networks and the move to IP. In talking to our customers, it's all about minimizing capex and achieving very short-term payback, while still continuing to keep business profitable and growing. What that means for our business is that customers are looking at things such as our SIP gateway that we just announced which allows the customer to keep their infrastructure and not replace it, but also gain the benefits of IP form a cost structure standpoint, such as SIP trunking. On the VoIP peering/interconnect side, with everybody trying to reduce their costs, bandwidth optimization is big. Everyone is looking at reducing large maintenance contracts, large power bills or large real estate bills by moving more and more to the IP interconnection. It can have a short-term payback for them and it certainly improves their bottom line dramatically."

"When people are not traveling and are spending less on disposable items, telecom doesn't 'go away,'" says Hogh. "From a generic business standpoint, telecommunications is still relatively healthy today. The issue is the capital markets and how telecom service providers are getting the funds to expand their businesses. So the challenge for them is that the capital markets are constrained, so they must shrink or they monitor their budgets extremely closely. But they still have to grow their respective bottom lines, and so their focus is on very short-term payback or positive business case opportunities; that's where you can see the opex reductions having a big impact on them." **NGN**

Richard Grigonis is Executive Editor of TMC's IP Communications Group.

Companies mentioned in this article:

ADVA Optical Networks
www.advaoptical.com

Ericsson
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Tellabs
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U4EA Technologies
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Veraz Networks
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by Richard "Zippy" Grigonis

Tekelec's Versatile EAGLE XG Platform for Operators

Tekelec (www.tekelec.com) is well-known for its session management and signaling solutions, such as its market share-leading EAGLE 5 system, used by network operators worldwide. The company recently announced the next evolution of its signaling platform, the EAGLE XG, to give operators the required flexibility and scalability to meet subscriber and network growth in hybrid network operating environments.

Ron de Lange, Tekelec's executive vice president, says, "The EAGLE XG platform and applications give operators the reliability to provide uninterrupted service as they transition to IMS or LTE networks while expanding signaling capabilities to meet consumers' evolving needs. Our EAGLE 5 customers can add EAGLE XG components, or can deploy a complete standalone EAGLE XG platform. The beauty of the solution is that it leverages existing technology to reduce capex and opex while maximizing the value operators receive from their current investments."

Why the XG? "Several reasons," says de Lange. "Our customers have experienced both subscriber growth and exponential traffic usage. A common driver is the global surge in text messaging as subscribers get QWERTY keyboards on their phones. Also, much more signaling occurs in wireless networks than in fixed networks, because of such things as cell tower hand-offs and roaming. Moreover, new technology is going into networks at an increasingly rapid pace. Operators must offer seamless service interaction between 2G, 2.5G, 3G, and LTE, or between fixed and wireless or even with broadband if they adopt VoIP. That need to interoperate across operators is something we hear about all the time."

That interoperability covers intelligent network (IN) and IP network traffic to ensure interaction between SS7 and SIP-based platforms. "Operators wanted our EAGLE platform to evolve to do things such as broker between, for example, any of the four versions of the CAMEL protocol within their IN services," says de Lange, "so that they could mix-and-match applications. A prepaid server may run on CAMEL 2 and a ringback tone server could run on CAMEL 1. Operators need their prepaid customers to be able to access and download ringtones, which requires multiple signaling triggers issued for a single user event. We enable these new service interactions and new sources of revenue for our network operator customers."

"The new EAGLE XG also does SIP interaction," says de Lange, "so operator traffic can go back-and-forth between SIP and CAMEL 1 through 4, or INAP technology developed for fixed networks, or other SS7 signaling protocols. The EAGLE XG's Service Broker rules-based engine enables customers and/or Tekelec to custom-configure the software so operators can set unique triggers for their particular network needs."

"Another application for the EAGLE XG is our SIP Signaling Router [SSR], a SIP Proxy," says de Lange. "Softswitches have SIP interfaces for intra- and inter-network signaling, and service providers need to gain visibility to all SIP signaling to efficiently route network traffic. Our SSR sits in the network core just like an SS7 STP does today, and it centralizes network routing data. The benefit is efficient scaling of SIP networks, as operators won't have to constantly maintain and scale routing data in every SIP endpoint, which would use a lot of capacity. And with a software upgrade, the SSR evolves into an IMS CSCF, for when customers decide to deploy an IMS core in their infrastructure."

Adds de Lange, "Our SSR can also provide Number Portability-corrected SIP routing and ENUM dips, and it can use LDAP and next-gen interfaces. In addition, it enables operators to simultaneously reuse their HLRs and their Tekelec number portability solution. The cumulative result of these SIP routing capabilities is a centralized session framework that increases service and network flexibility and lays a foundation for cost-effective network growth."

"The third major application is our HLR Router, which the network sees as a virtual HLR," says de Lange. "This architecture makes all MSCs, whether they're softswitches or circuit-switches, point to this virtual HLR, and Tekelec knows which HLR to route requests to since we know on which database their subscribers reside. The advantage is that operators can load balance or modify HLR topology without having to re-configure MSCs or other network equipment that access HLRs, such as SMSCs. They can all access the virtual HLR and we handle it from there. We're increasing the capacity from 120 million customer entries in the EAGLE 5 to a billion in the EAGLE XG. This is driven by operators' expectations to see continual growth in the number of 3G-enabled devices connected to their network."

"The fourth aspect of the EAGLE XG is what we call our Subscriber Routing Database," says de Lange. "It will support a billion customer entries for various applications, including HLR router, number portability, ENUM, and other yet undefined services. Just as SIP endpoints want to gain access to SS7 databases, there are also IP, SIP or LDAP-enabled, or next-gen Web interfaces, that must access traditional SS7 or other next-generation data. The mix-and-match goes both ways."

The EAGLE XG can also run sophisticated algorithms such as load balancing, and it has a very robust, reliable and scalable network architecture. The physical architecture is also flexible, coming in either rack-mount server or blade-server configurations. In short, the EAGLE XG is a substantial new achievement by Tekelec that will give operators more life from existing technology and save costs as they evolve networks for the future. NGN

by Greg Galitzine, *Group Editorial Director*

Speaking With Tellabs CEO, Rob Pullen

Rob Pullen believes in doing what it takes to allow others to achieve success. And he wants to position Tellabs as the premiere organization that can help customers succeed. By outfitting Tellabs' customers to achieve their goals, Pullen further believes that his firm enriches people's lives by innovating the way the world connects.

Tellabs supports service providers and operators around the globe with solutions ranging from mobile backhaul, to third- and fourth-generation wireless solutions (3G, 4G), to dynamic optical networking, as well as a professional services group that engineers, designs, and supports networks for a wide range of operators including Verizon, BellSouth, NTT Communications of Japan, Telstra of Australia, Telkom South Africa and Telecom Italia.

NGN Magazine recently had the opportunity to meet with Pullen, Tellabs' President and CEO to discuss some of the trends that are impacting the industry. Pullen joined Tellabs as an electrical engineer and has steadily progressed through the corporate ranks, enjoying stints in research and development, sales and marketing, culminating with his taking the reins of the organization just over a year ago.

For most people, taking the reins of a manufacturing firm making its way in the telecom market would be a challenge at any time, much less at a time when the economy was experiencing its worst climate in recent history. Still Pullen maintains an optimistic tenor and is proud that Tellabs has continued to increase its margins, expanding from 34 to 42 percent recently. And he adds, "We're generating cash," which in this economic environment is a result others might wish to emulate.

According to Pullen, he saw the market turmoil approaching, but he had no idea when or how deep the downturn would be.

"That certainly surprised me," said Pullen, "and as you can imagine, like everyone else, our revenues were slightly affected downward. And so in this tough economic time, we need to look around and say, 'we're going to invest our way through this, we're going to emerge stronger on the remote end, but we're going to manage our cash flow and profitability along the way,' that is, things that are in our control. I can't control when the macroeconomic market's going to improve, but I can control how we manage our expenses, improve our profitability, and keep close to customers."

The relationship with Tellabs' customers is of course critical in Pullen's view. "We are our customer's trusted partner, and the operative word there is 'trusted.' I'm not going to compete on the lowest cost, even though we're concerned about cost, and we're taking costs out of our business. Customers trust us to help them architect, design, and optimize their networks. They don't let you do that unless you have intellect to bring along with it, and you're showing a real value add."

Regarding the macroeconomic situation, Pullen believes that most telecom manufacturers and operators should come through this slump — particularly if they have little or no debt — because the previous telecom downturn toughened them up, and prepared them to run leaner, more efficient organizations.

Pullen referred to a recent conversation he'd had with several other industry leaders, who opined that this economy was the worst thing they'd seen.

He responded that, "2001 toughened me up so much, and while this is difficult, it's not half as bad as it was then. I'm actually more optimistic about the future. What we're finding is customers — the leaders — are using IP communications to either generate more revenue, or they're using it to save money. And this is a time when you need both of those desperately."

When we spoke, Pullen was justifiably proud of the fact that Tellabs had over $1billion in cash and cash equivalents and carried no debt. Tellabs has been investing in areas they believe will grow, for example emerging economies like Brazil. They've also announced several recent wins including a deployment with BT as part of that operator's 21CN (21st Century network) initiative.

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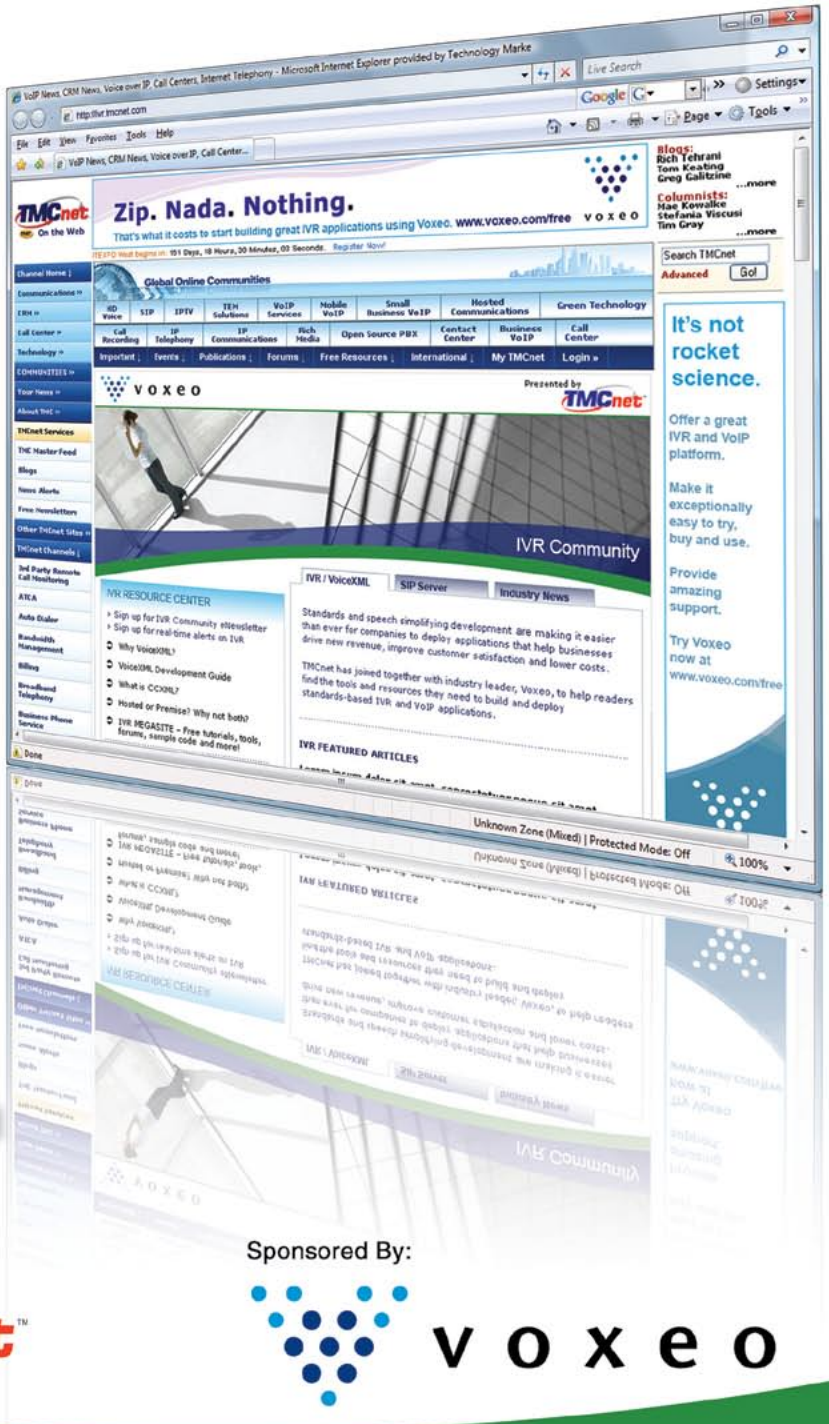

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As an engineer, it's no surprise that innovation drives Pullen's vision for the company. And he sees tremendous opportunity for application development as the focus shifts from hardware platforms to software-based application creation environments.

In fact, he told us that Tellabs is moving in that direction. "We'll make a hardware platform, (IP, Ethernet, etc...) that if you thought about it five years ago, you would have said, 'Well, it's got a data plane and a control plane to it.' But we're now moving to the next level, which is, it's got to have both those planes to it, as well as an application and content enabling plane, to offer personalization, to offer policy and subscriber management, to enable multimedia encryption, storage caching and so on."

"The biggest fear of the service provider, and what Wall Street thinks about them," Pullen added, "is that they're going to deliver pipes with no value add, and that goes back to the questions of 'how do I offer intelligence, personalization, differentiation versus someone else?' It's all going to be based on content, on personalization, on policy and subscriber management."

We asked Pullen to share his thoughts regarding whether it's consumers themselves that are really driving, for example, the need to have video on a mobile device.

"I believe it's both business and consumer," Pullen said. "Let's take the following example. There's a device that's been invented at UCLA, a prototype where they're doing blood testing and water testing using their cell phone. They're routing it back to labs for real-time diagnostics, for real-time diagnostics. That's a perfect scenario where you want to go test the water in an emerging country where you're not sure. You want to have a test your blood for diabetes for your blood of some sort. They're using a mobile device for that."

"And, I think we're only at the tip of the iceberg," he continued. "Look at mobile commerce. Service providers in Kenya, for example, are acting as the bank. They're allowing transactions on the mobile device, the service provider is acting as a banking system, taking a cut of the transaction as a small profit to, you know, for the administration and profit."

In the end, Tellabs' mission is to enable their service provider customers to enhance the lives of their subscribers. According to Pullen, the goal is to "speed commerce."

"All we're doing is speeding commerce in the world, whether it's consumer-to- consumer or business-to-business, or consumer-to-business," he explained. "In the early days, it was done via water. Then it was done via roads. Then it was done railroads, transportation, air travel. Now it's done via the 'net. What's the next generation to the 'net? It's this personalization and customization. But it all is along the lines of speeding commerce, in my opinion."

"Of course, if my children were here, they'd say it's also about entertainment, too. Gaming, TV, movies... and that's all part of it. But it also varies by culture. We recently completed a study with Nielsen where we found that by country, people looked at their mobile devices differently. So Americans look at their phone, and they kind of think about work first. In Italy, they look at their phone and they think about their friends. In France, they look at their phone and they think about entertainment. So really, there are some insights that that survey had about how you use the phone, and it varies by culture. It's the same object, but it has different purpose in your mind."

Pullen believes that as a core principle, a key to Tellabs' success has been the ability to focus. He explained that he recently addressed the company's employees, and shared his experience, that over 24 years with Tellabs, "When Tellabs focuses, we win. You know, if we try and become everything to anyone, you lose. There are too many things going on in this industry at the same time to have one company do it all really, really well."

And it all comes back to a commitment to the customer. Discussing the various trends that will propel his company forward, Pullen said, "I think the most important one is we're highly aligned with customers. We're helping them to innovate to make them successful, make them money or save them money. We're focused on these growth areas, and we're going to compete on innovation while still pursuing process excellence, and customer satisfaction as good as — or better than — our competition. And we're going to pursue flawless execution." **NGN**

Update (April 28, 2009):

The day this issue went to print, Tellabs announced first-quarter 2009 revenue, which showed that the company earned $7 million or 2 cents per share, which compares with earnings of $17 million or 4 cents per share one year ago.

In this economy that was not entirely unexpected. The fact that Tellabs was able to announce a smaller-than-expected drop in quarterly earnings due to cost cuts, helped shares of the company's stock rise 7 percent following the news.

One key takeaway that had analysts impressed was the rise in Tellabs' gross profit margin to 44.2 percent from 38.3 percent a year earlier.

The company ended the quarter with $1.18 billion in cash, cash equivalents and marketable securities, which prompted Morgan Keegan & Co analyst Simon Leopold to say, "I think having a phenomenal balance sheet with $1.2 billion in cash, and no debt, provides options."

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2009 NGN Leadership Awards

The NGN Leadership Awards were established to recognize products or services, which made outstanding achievements in the evolving realm of next-generation communications products and services. The companies that were recognized made major contributions in the advancement of the NGN industry.

This year's winners have all shown their dedication to the market and to realizing a vision of redefining the next generation network, by enabling innovative applications and services.

You will find in this list of award recipients a variety of vendors, from different corners of the industry, each of whom represents a puzzle piece, each of whom plays a role in the evolution of the industry. From service provider networking equipment to enterprise solutions to testing tools...all the award recipients play a role in moving our industry to the next generation.

As Executive Editor Richard Grigonis wrote in the inaugural issue of *NGN magazine*, explaining the evolution of our brand from IMS to NGN:

"Certainly the future of communications networks is even more expansive than what IMS alone can describe. The canvas upon which network operators and providers 'paint' their services grows larger every day. Indeed, their toolkit of 'paints' has become more varied and colorful, too."

The award winners that we recognize here are the first blending of canvas and color.

The editors and staff of *NGN magazine* congratulate the winners and wish them continued success. **NGN**

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ComAbility
neXus
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Cypress Communications
C4 IP
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Dialogic Corporation
Dialogic IP Media Server
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DiVitas Networks
The DiVitas Mobile UC Solution
www.divitas.com

Empirix
Hammer G5
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FaxCore Inc.
FoIPBOX Mini-FoIPBOX Super-FoIPBOX
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Fujitsu Network Communications, Inc.
BroadOne LS LTE eNodeB
www.fujitsu.com/us/services/telecom/

Grandstream Networks
GXV3140
www.grandstream.com

Ingate Systems
Ingate SIParator with SIP Trunking software module
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IntelePeer, Inc.
IntelePeer AppworX Open Communications Platform
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Intelliden Discovery and Reconciliation
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LifeSize Room 200
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Motorola, Inc.
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Mu Dynamics, Inc.
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Spirent Communications
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K2Air LTE Uu Monitoring Probe
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U4EA Technologies
Fusion 500 Multi-service Business Gateway
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UniData WiFi Phone Family
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Virtual PBX
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VIXXI Solutions
VIXXI-LInk
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Voiceserve-Voipswitch Inc.
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XConnect
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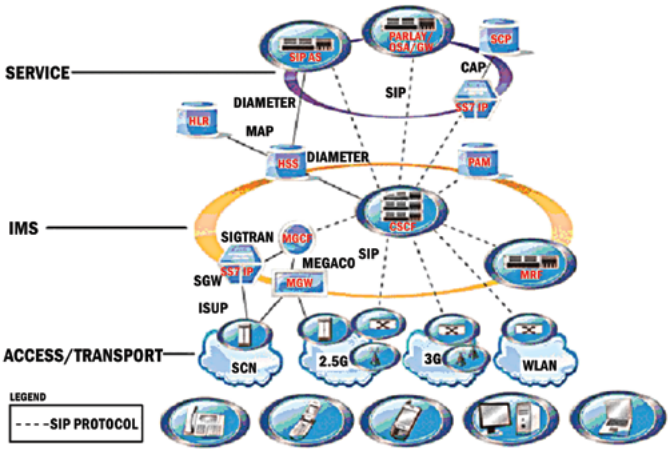
by Michael Khalilian

The Role of Diameter in NGN and IMS Networks

The NGN Forum/IMS Forum has recently launched a new technical working group focused on strengthening the interoperability of the control and operational interfaces supporting Authentication, Authorization and Accounting (also known as AAA or triple-A) and providing an open interface for third party services.



Use of Diameter in Next-Generation Networks (Source: Ulticom)

The "Diameter" Working Group focuses on ensuring that IMS networks and NGN services can rely on a proven vendor infrastructure and solutions. The Diameter protocol plays a crucial role in NGN. It is used as the AAA framework for applications management, mobility, nomadicity, network security, network access security, and services charging. The group's objectives are the creation and execution of an interoperability event, or Plugfest in the second quarter of 2009. The event, aimed at testing and demonstrating interoperability for all NGN technologies using Diameter interfaces, will include IMS, WiMAX and LTE testing. Some standards used to describe these interfaces include: IETF, 3GPP, 3GPP2, TISPAN, WiMAX, LTE, and Packet Cable.

With the new 'all-IP' service-oriented architectures Diameter is widely used in IMS and in the standards developed by the 3rd Generation Partnership Project (3GPP), the international standards group working on the Long Term Evolution (LTE). As examples of the wide usage of Diameter, we don't have to look further than the IMS control and service planes as also described below:

- The Home Subscriber Server (HSS) is a database containing user identification, user and service control information, user authentication and authorization, location information, and user profiles. As a note, HSS is also used in the LTE architecture.
- The Serving Call Session Control Function (S-CSCF) uses Diameter interfaces to authorize users (by exchanging information with the HSS in response to a SIP registration request) and to retrieve subscriber information.
- Application Servers retrieve subscriber profiles also using Diameter.
- Charging interfaces (Ro and Rf in IMS architecture) are based on the IETF Diameter and on extensions to the protocol resulting from 3GPP.

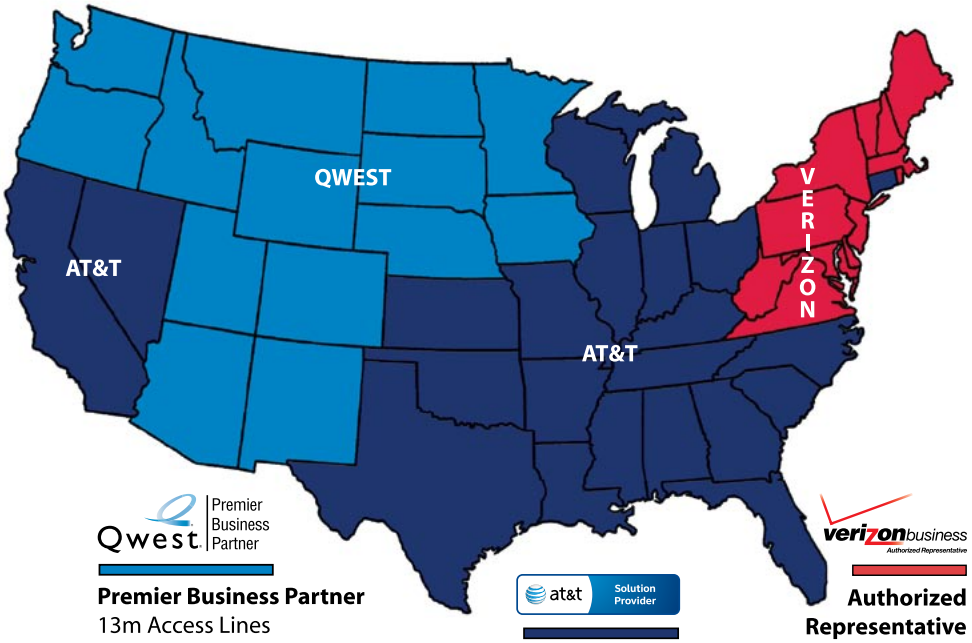
Diameter also plays a central role in implementing Quality of Service (QoS) in NGN, hence allowing services such as VoIP, video delivery, video conferencing and Enterprise Unified Communications (UC) to be managed in the same converged network.

The Diameter protocol was developed by IETF, as an evolution to the RADIUS (Remote Authentication Dial In User Service). RADIUS is currently the triple-A protocol for most Internet transactions. Diameter, as its name indicates, is 'twice RADIUS.' It provides a number of improvements in AAA in response to the evolution of broadband wireless and the necessary flexibility for future extensions. Designed as a Peer-To-Peer protocol it allows each host to act as both a client and a server, Diameter improvements include:

- Security (IPsec or TLS and end-to-end)
- Transport (TCP or SCTP)
- Reliable Proxying (failover recovery)
- Session management

To find out more about the next IMS and NGN interoperability testing event for the control and services planes (Plugfest 7), please visit the NGN Forum/IMS Forum at www.imsforum.org or contact the Chair of Diameter WG, Bruno Deslandes at dchair@imsforum.org. **NGN**

Michael Khalilian is Chairman and President, NGN Forum™ & IMS Forum® (www.NGNForum.org / www.IMSForum.org).



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