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IMS MAGAZINE™

IP MULTIMEDIA SUBSYSTEM

VOLUME 3/NUMBER 4 AUGUST/SEPTEMBER 2008

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editor's note

by Richard "Zippy" Grigonis

A Interesting Month

Things have been looking up this month for IMS, in events scattered around the world.

No Waffling in Belgium

First, VoIP application software provider BroadSoft (News - Alert), Inc., (www.broadsoft.com) announced that its BroadWorks IMS-compliant application platform (BroadSoft has many IMS and standalone deployments and is very popular among carriers in Europe) has been selected by Belgian telecom operator Belgacom (News - Alert) to deliver voice and multimedia services to the enterprise market. BroadWorks will be running atop an IMS core network. The service is already commercially available and will migrate from a pre-IMS environment onto the IMS core network. Belgacom's Integrated Telephony Services (ITS) has focused its sights on SMBs and multisite enterprises, such as retailers with hosted unified communications service packages and phones, including desktop clients that increase productivity, such as BroadWorks Receptionist. Broadsoft BroadWorks also brings with it integration with common office applications such as Microsoft (News - Alert) Outlook.

A COLT of a Different Color

A week or so later, the U.K.-based European IP business services provider COLT announced an initiative to upgrade its network to "next-generation" capability. This entails improving overall service performance of existing and new Layer 2 services/applications, while lowering investment costs. COLT's strategy now includes Nokia Siemens (News - Alert) Networks (www.nokiasiemensnetworks.com) and Sonus Networks (ww.sonusnet.com). COLT (News - Alert) will use Nokia Siemens' Multi-Service Platform (MSP) as the foundation IP and Ethernet transport, enabling services with less than 1 millisecond latency, low jitter, flexible bandwidth, better fault resilience and quick automated provisioning.

This network will interwork with Sonus' application-enabling softswitch that will handle session control, including IMS and FMC-based fixed and mobile wireless services. The MSP will be used to coalesce COLT's 18 data centers into a single virtualized network, replacing a typical vertical protocol-specific transport silo methodology with a three-layer, horizontal infrastructure. Ultimately, customers will be able to partake of third-party software delivered from the data centers as Software-as-a-Service (SaaS (News - Alert)) over the Ethernet network.

A Billion Here, a Billion There

Telecom equipment sales rose 13 percent from 2006, amounting to US$139 billion in 2007, according a new Infonetics Research (News - Alert), report, "Service Provider and Enterprise Telecom and Datacom Equipment". The communication research firm's report says that worldwide sales of service provider and enterprise telecom and datacom equipment will continue to grow another 26 percent to US$174 billion in 2011.

The greatest growth is in IPTV (News - Alert) and IP video equipment, followed by service provider VoIP and IMS equipment. As faster-growing segments like IPTV and carrier VoIP and IMS gain share, the largest equipment category (service provider wireless and Fixed-Mobile Convergence (News - Alert)) will lose about 4 ponts of its overall telecom/dateacom revenue between 2007 and 2011.

As Jeff Wilson, Principal Analyst at Infonetics Research, says, "While service provider wireless and FMC equipment and enterprise routers, switches, and wireless LAN equipment make up the largest portions of revenue, the increases we're seeing in the overall telecom and datacom equipment market are being fueled by the transformation to IP packet networks, as evidenced by strong growth in the IPTV and service provider VoIP and IMS segments."

Approximately a third of last year's equipment revenue came from Europe and the Middle East and Africa (EMEA), while China and India will most likely engender a "significant jump" in carrier CapEx this year because of various large network construction projects, with the additional driving force of currency appreciation against the U.S. dollar.

IMS continues to slowly but steadily move forward. As the world's network infrastructures link up one by one, the promise of IMS and its common service infrastructure for wired and wireline networks and devices will be fulfilled.

Richard Grigonis is Executive Editor of TMC's (News - Alert) IP Communications Group.

IMS MAGAZINE™
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IMS MAGAZINE™
IP MULTIMEDIA SUBSYSTEM

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Introducing the

Video Compression Global Online Community

With the adoption of high definition video, and the transformation of video from a static to a mobile medium, video compression is more important than ever. As new video solutions are developed, and as video is delivered to all three screens — TV, Web and mobile — new video compression technologies are required to ensure a compelling video experience for any video application anywhere.

To learn more about the optimized video compression technologies, products, and services that enable innovative solutions for application developers, media companies, chip vendors, device manufacturers, enterprises, and others, visit the Video Compression community on TMCnet, sponsored by On2 Technologies.

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- Sample Videos
- Latest News Alerts
- Feature Articles

http://video-compression.tmcnet.com

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publisher's outlook

by Rich Tehrani

Show Me the Opportunities!

This past week had me thinking about telecom and how it's evolving. I've come to some conclusions worth sharing. The first is that customers could care less about walled gardens. Sure, we hear complaints from some about how walled gardens are bad – but consumers don't care. What they do care about are much more simple things that we often forget.

Ease of Use

Skype (News - Alert)**.** Microsoft, the world's most powerful software company, launched NetMeeting, one of the world's first VoIP software packages. Its problems: a terrible interface and difficulty in connecting to other users. Skype subsequently appeared. With its easy -to-use interface and a feeling of "fun", it took over the market. Ironically, Microsoft had an open H.323-based solution, and Skype chose to be proprietary. Still, Skype became the success NetMeeting should have been.

Apple (News - Alert)**.** Many people in the technology space left Apple for dead and the company amazed us all when they launched the iPod phenomenon. They changed the way the world consumed digital music by making them actually start to pay for it and, moreover, owning an iPod became a status symbol. A fashion accessory, if you will.

Having tried to acquire an iPhone (News - Alert) for over a week, I can tell you firsthand that Apple is doing something we've never seen in the communications market. Amazingly, even people who were "anti-Apple" are now buying these devices or at least trying to.

Apple has done many "IMS-like" things such as allowing applications from disparate developers, and in exchange for customer access; they pay Apple a fee per sale.

As Apple grows its iPhone business, it's poised to change the face of telecom. RIM could be immune for a while because Blackberries have keyboards and Apple's don't at the moment, but other device makers are probably in big trouble. Nokia (News - Alert), interestingly, has done a better job of innovating in the device space than Apple but the market – especially in the U.S. – seems apathetic. Apple can do no wrong and they have produced a single device that's becoming the envy of the world while Nokia has laundry lists of devices about which consumers aren't passionate.

Could my analysis be wrong? Consider that Sony Ericsson (News - Alert) posted a 97% drop in Q2 profits and cut 2,000 jobs. Even so, Apple isn't immune to competitive threats. One hot download for the new iPhone is Pandora, which enables users to design their own streaming radio station. Pandora (News - Alert) could potentially reduce iTune sales. And media seems to be where much of the money is in this business.

These opportunities face financial challenges as devices gain WiFi (News - Alert) access, and then there's the challenge of TiVo – the company enabling the recording of television and its viewing on mobile devices. How does a service provider add value to this relationship? Landmines lurk everywhere for service providers, but so do tremendous opportunities. After all, one million people signed two-year contracts for iPhones in a few days. Because of devices like iPhone, consumers realize they can indeed surf on-the-go, thanks to touch-screen technology.

The good news: mobile data consumption will continue to grow rapidly. But to make money in this new environment, providers must focus on entertainment, among other things. They also need to start getting good at something they haven't excelled at in the past – the user interface. SPs have often told me they don't just want to be dumb pipe providers, and yet they simultaneously ship products on their mobile networks which stink.

That Apple could enter the mobile phone market and do so well – 20 years behind competitors – demonstrates our need to rethink everything. The world is changing rapidly – social networks, Web 2.0, mashups, obsessive-compulsive media consumption and many other trends are changing how we use broadband connections – both wired and wireless. The opportunity for service providers is to find ways to help customers get the most out of their disparate connections – DVR, music services, p2p networks, social networks, IM, SMS, email, web surfing, etc. The complexity involved in integrating all of these technologies is bewildering but in the end, customers want things that work and are easy... This is the lesson Skype and Apple have taught us.

When formulating new business plans, keep in mind simplicity, ease-of-use, and the "cool factor" to appeal to consumers. Walled gardens services are great if they are easy to use and have the sex appeal needed to capture the audience's attention. The telecom world has changed and if you haven't paid attention these past few years and months, you better start soon.

industry news

www.tmcnet.com/2281.1

Researchers Name Top Vendors

A new study by Infonetics Research has named Acme Packet, Alcatel-Lucent (News - Alert), Cisco, and Sonus as the "top VoIP equipment manufacturers," with Cisco emerging as the most familiar manufacturer. The study offers a broad view of service provider thinking and plans for voice over IP, including service provider perceptions of leading VoIP vendors, according to he researcher.

The study is based on formal interviews conducted by Infonetics' senior analysts with competitive operators, senior analysts with incumbents, IXCs, vertically integrated service providers, and specialists. The study also throws light on the trends, drivers, barriers, and implementation plans of VoIP service providers.

www.infonetics.com

www.tmcnet.com/2282.1

A1 Launches IMS Developer Challenge

A1 launched an international developer challenge called "A1 InnovationDays." The company is inviting creative developers to address the guiding theme "Open Communication by Open Standards" by submitting their ideas that create better communication services. The challenge is sponsored by the Austrian mobile network operator mobilkom austria and will feature prizes for the best open source software applications making use of standardized interfaces and protocols such as IMS (IP Multimedia Subsystem (News - Alert)) and SIP (Session Initiation Protocol) The sponsor may even deploy the most compelling services together with mobilkom austria.

www.a1innovations.at

www.tmcnet.com/2283.1

Kabira Enhances Service Provisioning

Kabira (News - Alert) Technologies has announced the release of version 3.4 of its widely deployed Kabira Provisioning and Service Activation product (KPSA), which is designed to enrich its KPSA Multi-Play service fulfillment solution. The newly released KPSA 3.4 delivers advanced performance, operational and re-usability enhancements with faster service provisioning, easier monitoring and greater flexibility by simplifying the handling of complex product offerings and services. The new release also enables service providers to better integrate their legacy systems while adding support for new developments in customer self- and auto-provisioning.

www.kabira.com

www.tmcnet.com/2284.1

HOT Telecom Chooses TTI for VoIP Service Assurance

HOT Telecom has selected TTI Team Telecom to expand its Service Assurance solution to monitor customers' quality of service and improve operational efficiency on its VoIP network. The solution, based on TTI's Service Assurance products CallExpert and Netrac PMM, is designed to provide HOT Telecom the ability to analyze and investigate customers' VoIP sessions derived from multi-format IPDRs and multi-vendor performance and service indicators. In parallel, TTI Telecom (News - Alert) has implemented its trouble ticketing system NeTkT to help HOT Telecom utilize the company's resources more efficiently and improve engineering and operations problem resolution cycles.

www.tti-telecom.com

www.tmcnet.com/2285.1

Oracle Expands Portfolio With BEA-based Offering

Oracle has announced the Oracle Communications Service Delivery Portfolio (SDP, offering items from the former BEA (News - Alert) WebLogic Communications middleware platform and Oracle (News - Alert Fusion Middleware. Using BEA, Oracle says it's expanding its independent software vendor community with the goal of encouraging innovative service delivery. Partners can leverage communications industry applications from Oracle to help service providers monetize new services. Officials say the SDP concept evolved from basic content delivery to an architecture that integrates legacy and IP-based network services to drive new revenue generation as it exposes the communications network to third-party application developers.

www.oracle.com

www.tmcnet.com/2286.1

Slovak Telekom Expands Amdocs Relationship

Slovak Telekom has announced it will expand its relationship with Amdocs (News - Alert) by upgrading and expanding its usage of Amdocs OSS solutions. Slovak Telekom plans to deploy a variety of products from Amdocs' OSS portfolio to manage service fulfillment for its IP-based services, such as broadband, and as a platform for its next generation OSS. Amdocs has also been selected as the prime contractor for project delivery. As per the upgrade plan, Slovak Telekom would upgrade to the Amdocs Cramer6 OSS Suite to take advantage of new features as it modernizes its OSS architecture. Slovak Telekom will also expand its usage of Amdocs OSS with the purchase of Discovery Engine, a key product within the suite.

www.telecom.sk
www.amdocs.com

www.tmcnet.com/2287.1

CGI Intros Tapestry 8.0 Order Management Portal

CGI Group (News - Alert) recently announced the launch of its Tapestry 8.0 solution, with additional features for modular rating, billing, and order management. CGI Group is a provider of information technology (IT) and business process services. Tapestry 8.0 is capable of simplifying and managing the growing amount of complexity faced by communications service providers when they deliver convergent next-generation IP products and services to customers. Tapestry 8.0 includes the Tapestry Order Acquisition Manager, a highly configurable Web-based application that can be customized according to customer's requirements and which supports order and account management for CSPs.

www.cgi.com

www.tmcnet.com/2288.1

COLT Rides Sonus Networks for Network Development

Sonus Networks (News - Alert) has been selected by COLT to deliver the core IP-voice infrastructure for the next phase of COLT's next-generation network (NGN) deployment. COLT provides data, voice and managed services to business and governments, in 100 cities in 13 countries across Europe. The plans call for COLT to deploy a complete edge-to-edge Sonus IP-based session control network with gateways in six major European cities. The solution includes centralized routing, and session border security for IP access and peering. The network is currently operational in London, Frankfurt and Paris. By the end of summer 2008, the network is expected to extend to Zurich, Milan and Madrid, according to officials.

www.sonusnet.com
www.colt.net

www.tmcnet.com/2289.1

Equinox Heading to Bermuda

Bermuda-based TeleBermuda International Limited has licensed a suite of software applications from Nashville-based Equinox Information Systems (News - Alert). The company's TeleLink, Manager, and CDRTrans applications provide a total solution for mediation and usage record administration. Terence Burgess, network manager for TeleBermuda said in a statement that their objective was to identify an advanced telecom software provider with the ability to deliver a total solution to their expansion requirements in a cost-effective manner. TeleBermuda selected Equinox Information Systems after evaluating multiple software vendors.

www.telebermuda.com
www.equinoxis.com

www.tmcnet.com

Ericsson to Build Network for Telenor ASA

Stockholm-based telecom solutions provider Ericsson recently signed an agreement in Sweden with the Norwegian operator Telenor (News - Alert) ASA to build an IMS-based network in Sweden, including IMS-based IP Centrex. It is said the network will be the first commercial converged IMS network in Sweden for the enterprise market. The solution is looked upon as a first step in enabling Telenor to utilize its network capabilities for all of its Swedish operations, including Bredbandsbolaget and Glocalnet, in an efficient way. Ericsson will be the prime supplier of the IMS system and system integration services for Telenor Sweden.

www.ericsson.com
www.telenor.com

Comverse and Blueslice Team Up for Joint Solution

Comverse, a major supplier of software and systems enabling network-based multimedia enhanced communication and billing services, and Blueslice (News - Alert), a provider of subscriber management solutions for Mobile, VoIP, FMC, and M2M networks, recently announced a partnership to incorporate enriched media and subscriber management in end-to-end IMS networks and applications for mobile, integrated fixed-mobile and multi-play operators. This joint solution will combine Comverse's (News - Alert) Converged IP Communications portfolio with Blueslice's Converged Subscriber Platform 3000™, HSS 3000™ and entry-level HSS 1000™ to provide subscribers with consistent access over multiple devices (fixed phone, mobile phone, PC and TV) to personalized services for communication, entertainment, and information. Thus, subscribers will enjoy converged voice, video and messaging services, as well as data management – enriched capabilities enabling operators to capture a larger share of subscribers' total communication and entertainment needs. The entire solution is scalable and meets the most demanding operator requirements.

www.comverse.com
www.blueslice.com

by Ronald Gruia

Web 2.0 and the IMS World Come Together under WIMS 2.0

"Convergence" has unquestionably been one of the most used buzzwords in the telecom industry during the past decade. Just as the lyrics from the famous Beatles' hit ("Come Together", the lead-off track on The Beatles' 1969 album, *Abbey Road*), there have been several things that have been "coming together" during that time in the telco world: voice and data, fixed and mobile converged service (with seamless roaming between the networks), and more recently, Web 2.0 and a new generation of services based on IMS.

Interestingly enough, many proponents of Web 2.0 style "mashups" have suggested that their approach (via mashups) represents a better option to quickly develop new next-gen services than IMS. But what has been always missing was a way to bridge the gap between these two methodologies and to take the benefits of each and combine them in order to generate new value added services. Not surprisingly, Telefonica, widely regarded as one of the most forward thinking operators in the world, is spearheading a new initiative called WIMS 2.0[1] (Web 2.0 and IMS) , which does exactly that.

Before we delve into WIMS, let us take a closer look at the definition of a "mashup". The term mashup has its origins in the music world, where it refers to the practice of mixing two or more songs to create a new one. When used in the context of Internet software technology domain, however, a mashup is an integration of two or more information sources or Web tools in a single, new application. A quick Internet search can quickly uncover several well known examples of mashups that combine web-based APIs to create new lightweight Web services. Examples include life2life (which blends in Second Life and Amazon services) or Zillow (which combines real estate listings with Virtual Earth). In these instances, a third party developer can download the APIs or "plug-ins" that are provided by a Web 2.0 player (e.g. Google Maps API provided by Google (**News** - **Alert**)) and blend it in with some other plug-in that could give traffic updates and create a new service that could provide delivery drivers with the best routes to take at any given time on the road.

Given the recent success of Web 2.0 giants (including such as Google or Yahoo!, merchants such as Amazon.com, clearinghouses such as e-Bay or PayPal, and social network providers such as Facebook or MySpace (**News** - **Alert**)), service providers have increasingly become concerned with how to address the potential competitive threats from some of these players and how to monetize some of the opportunities that could arise from the advent of Telco 2.0 — the combination of the Web 2.0 and the telecom world.

The transformation to become a nimbler, more agile player in this new and highly competitive environment is not an easy one. Operators have to change their mindset from older business models (based on subscription-based pricing, strict user segmentation schemes, usage-based constructs and service level agreements that attempt to crystallize the highest possible revenue from their targeted subscribers) to newer ones, in which some services could be provided in an added-value fashion, sometimes free, on other occasions blended with some sort of targeted advertising or as a part of a "sticky bundle" whose chief goal is to increase customer retention. This exercise entails the makeover of these operators, moving away from fitting the old "Ma Bell" profile to a newer, slicker Web 2.0, media-centric company.

In the past, given the potential erosion in profitability and associated risks with opening up their core networks for third-party service and applications development, this idea would be a non-starter. However, given the Schumpeterian wave[2] that has been sweeping across the telco industry, the telcos have no choice but to change. In embarking in this transformation exercise, carriers will have to balance pricing discipline and the Schumpeterian "creative destruction", but eventually, if they do not end up cannibalizing their own revenues other competitors will do so.

The previously mentioned X-factor players (Google, Yahoo!, etc.) and other non-traditional entrants have been leveraging Web 2.0 technologies to offer innovative communications and collaboration services. Therefore, it is not surprising that service providers have moved away from their reluctance in opening up their core networks and have started investigating how they could leverage the Web 2.0 to quickly combine and introduce new services, even willing to tweak their business models in that process. One approach taken by operators was to begin exposing a set of libraries that abstract some basic web services into a simple interface accessible via a set of distinct programming languages. The key idea is to liberate the developer from having to code all of these more primitive constructs and instead to focus on creating a novel value added service. BT (**News** - **Alert**) has been one of carriers that have taken this path, offering its Web21C SDK via its portal (available at: http://web21c.bt.com/services).

Telefonica's WIMS Push

Just like BT, Telefonica also has a site dedicated to third party developers where they can use open APIs to quickly create a new mashup that can leverage several mobile features (SMS, MMS, GSM location, etc.). This is available at the Open Movil Forum (available at: http://open.movilforum.com/en/).

But the WIMS 2.0 initiative goes above and beyond the simple exposure of open APIs to the developer's community. The WIMS concept is predicated upon the convergence of the telco and the Web 2.0 worlds, in a complete bi-directional fashion as follows:

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by Ronald Gruia

1. Empowering operators to offer telco capabilities to the Web 2.0 environment; in other words, to open up the core and enable IMS services access from Web 2.0 applications and the Internet in general. This is achieved via embedding telco features in Web 2.0 services via mashups. These mashups can be based on either APIs or PSEs (Portable Service Elements). Another option is to offer new ways to publish content in Web 2.0 via some IMS-enabled UGC (User Generated Content) publication and distribution mechanism. The key concept here is to leverage telecom services potential to produce UGC in real-time.

2. Enabling service providers to augment their application portfolio by utilizing Web 2.0 services and technologies. The idea in this case is to incorporate Web 2.0 content and events into operator services. This objective can also be achieved by IMS service delivery via web page interface (through a "virtual terminal" IMS online environment). Such online IMS/telco terminals (or thin clients) are ubiquitously accessible from any point of the Internet since they represent web-based applications.

The WIMS endeavor, a joint effort between Telefonica and its R&D subsidiary (Telefonica I+D or Investigación y Desarollo), epitomizes the desire a of a more *avant-garde* operator such as Telefonica to start converging telecom and Web 2.0 technologies in order to generate a new breed of innovative, appealing and user-centric applications. These next-gen services will blend the most appealing features from the Web and the telco worlds. Elements such as content generation, interactivity, social orientation, ubiquity and user participation will be implemented from Web 2.0 services. Conversely, IMS enablers and apps such as presence, multimedia telephony, media sharing, push-to-X (talk, video, etc.), and online buddy lists can enrich Web 2.0 applications, marking them suitable for wireline, wireless or converged networks. Furthermore, WIMS 2.0 also delivers pre-IMS telecom functionality including SMS, MMS, messaging, circuit switched voice / video calls and networked address books.

The WIMS effort is also indicative of a change in the traditional telco business models, and the increased shift from a relatively closed, "walled garden" type approach to a more user-centric and open philosophy, which follows the tenets of IMS (access independence, flexibility, openness and a wider choice in the way services are provided). IMS and its host of enablers are being regarded as one of the big catalysts driving this change in business model. And herein lies the biggest difference between the Telefonica driven WIMS initiative and other similar endeavors, since not all larger service providers are giving IMS this level of endorsement at its current stage of market development, despite of the fact that the majority of them have embraced IP/SIP in a more open standards environment.

Telefonica is working in partnership with vendors such as Alcatel-Lucent, Solaiemes (**News** - **Alert**) and others to implement the entities of the WIMS 2.0 reference model. Moreover, WIMS 2.0 members are diligently collaborating in several industry events within the scope of the current and future Web 2.0 penetration in the society at large, presenting its work in both technical forums and publications. One recent example was an event recently held in Madrid, which counted with WIMS members and various participants in the Spanish Web 2.0 marketplace ("Socioeconomics of the Web 2.0" — slides in Spanish are available at www.wims20.org/index.php/lang-en/news).

Key Takeaways

WIMS gives us a glimpse of how mashup creators can collaborate, classify and store their Web 2.0 and IMS mashups using service provider platforms. It also demonstrates how mashup assembly can be provisioned and enhanced with telecom widgets for building mashups. Certainly, the access to enablers such as location and presence can significantly enrich Web 2.0 mashup assemblies. In the future, mashup creators will be offered different SLAs by the service providers, with content providers being able to parlay billing, metering and monitoring capabilities from service providers in order to reduce costs in monetization of their mashups.

Initiatives such as WIMS will empower telecom operators to become nimbler and more effective at targeting the "micro markets" (i.e. the "long tail", as described by Chris Anderson in his famous book[3]). In addition, carriers will be able to develop new customer relationships and to obtain a closer understating of some customer behaviors. As an example, consider the WIMS applications currently showcased in their portal[4], which include social networking applications ("Find us for Facebook (**News** - **Alert**)", which allows a Facebook telco user to locate his buddies in a Google Map relying upon mobile location-based data, or "Movistar Contacta", which enables a Facebook user to send SMSs and use a click-to-call button to initiate a call with his/her buddies), an RSS MMS feed reader, an IMS thin client (AJAX version of an IMS Communicator for an iPhone) and other value added applications.

Besides addressing these "long tail" opportunities and creating social communities, an effort such as WIMS will also be instrumental in acting as a catalyst for a change in the *modus operandi* of a typical carrier, making it move away from the old traditional business models and practices to a newer "perpetual beta" concept. Collaboration between the service providers, network equipment vendors, third party developers, and the customers (at both the enterprise and consumer level) will be a sine-qua-non ingredient for success. Therefore, in order to increase the chances for a successful uptake of these new services, it is also fundamental for the service providers to build and maintain an open communication channel with their subscribers.

Footnotes:

[1] Please refer to the WIMS 2.0 portal (available in both English and Spanish) at: http://www.wims20.org.

[2] Joseph Schumpeter (1883-1950) was an Austrian economist who greatly influenced the economic development theory and coined the famous concept of "creative destruction". The idea behind this notion is that innovation cycles are disruptive in nature: new firms and existing ones that can adopt the new technologies can thrive under this environment, whereas others eventually vanish because they cannot make the necessary adjustments.

[3] More info available at his blog at www.thelongtail.com/about.html.

[4] Please refer to www.wims20.org/index.php/lang-en/showroom

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By Marc Leclerc

IMS Bridges the Gap, Part 3

Making services work across networks. Linking the telecom, Internet and media industries into a common value chain called networked multimedia will be difficult. But recently we've seen the arrival of IP Multimedia Subsystem (IMS) – a framework that if properly applied could provide the media, telecom, and Internet businesses with a bridge that unites them. IMS is used to build a converged user experience that leverages the best from the telecoms, media and Internet worlds.

In this text I will focus on the interfaces IMS provides for linking the three parties involved in networked multimedia. Specifically, I will mention the Communications Services (CoSe) defined in IMS in order to provide end-to-end interoperability of key IMS capabilities across networks. These are:

- Telephony: create, merge, split, and tear down voice and video sessions in real time.
- Messaging: create and transmit deferred messages (such as SMS and MMS).
- Push-to-talk: "floor control," in other words, push a message (text, voice, video) out to a group of receivers (as if they were walkie-talkies on the same frequency).
- Subscriber profile: user location, presence status, group management, identity handling, user profiles, etc.

None of these functions are unique to IMS, but IMS is the only standard that covers all these areas for mobile-, fixed-, and cable-based communications in the same framework. Because some confusion exists regarding IMS, it's also perhaps worth mentioning what IMS *is not:*

- **An all-encompassing** grab for control of users by the telecom operators and vendors: the walled garden model is fast disappearing, and IMS vendors are providing tools that give network operators and developers more choice in business models (such as paid subscription, pay per use) than the predominantly advertising-based model of the internet.
- **A panacea:** IMS provides a specific set of technical capabilities. The parties involved still need to set up the business relationships that will create a true win-win scenario.
- **Finished:** IMS is still a new technology in deployment. There is a great opportunity for first movers to establish dominant positions in IMS-enabled services. <BOLD>Fully implemented:<BOLDEND> Ericsson estimates there are some 40 commercial deployments of IMS around the world, and over 130 contracts for IMS network installations.

Powerful new sales tools. IMS provides networked multimedia with a framework for a win-win-win scenario. IMS also provides the underlying architecture needed to provide a truly well-integrated and coherent consumer experience.

For instance, IMS helps advertisers and retailers work together by providing *reliable profile information,* for targeted advertising. IMS permits customers to opt out and control which information in their profiles they will allow external parties to see. The targeted advert can then be sent as a push-to-talk message, requiring little direct participation unless the customer is interested. The message could contain a premium offer or discount coupon, in which case the customer can respond via telephony or messaging services, using the network operator's charging services to bill a user who wants to buy now.

In another scenario, a woman walks down the street and finds out, via *location services*, that several friends are in the area. She then uses an IMS-enabled "active address book" to see who would be available for coffee, and sends out an invitation via instant messaging. With a restaurant location service she finds a nearby favorite coffee shop; and using the white-boarding facility of IMS, shows the group of friends where to meet. In the meantime, the coffee shop gets her "frequent patron" number from her profile and issues a special coupon. As each group member leaves, they receive a personalized message thanking them for their patronage, and offering each a different discount coupon based on age and previous buying history.

Another interesting usage of IMS capability is to use *presence status* to identify changes in someone's activity that may present a commercial opportunity. For example, while commuting a man is watching a sports event broadcast in real time. He arrives at his destination before the program is finished, and is obliged to stop watching the program. IMS detects this change of status and initiates a service that sends him a text message with an offer to provide a short video when any significant action happens for the rest of the game. He accepts the service by sending a message in response, and receives the highlights of the remainder of the event as multimedia messages (for a fee of course!).

The road ahead. Telecoms, the media, and the Internet have much to gain by working together to create a unified market for networked multimedia, and IMS provides a way of reaching this destination. Of course, the ones who stand to gain the most in this convergence are the consumers – and that is perhaps the best indication that we are on the right path.

Marc Leclerc (News - Alert) (marc.leclerc@ericsson.com) has been involved in the computing and communications industries since 1982, including positions in product design for software and hardware, product management and marketing. A member of the strategy and marketing group within Ericsson's Business Unit Multimedia, he is a frequent speaker at industry events. He is also manager of the Ericsson Mobility World Global IMS Expert Center at Ericsson Canada. Education: McGill University, Bachelor of Science in mathematics and computing; MBA 1998.

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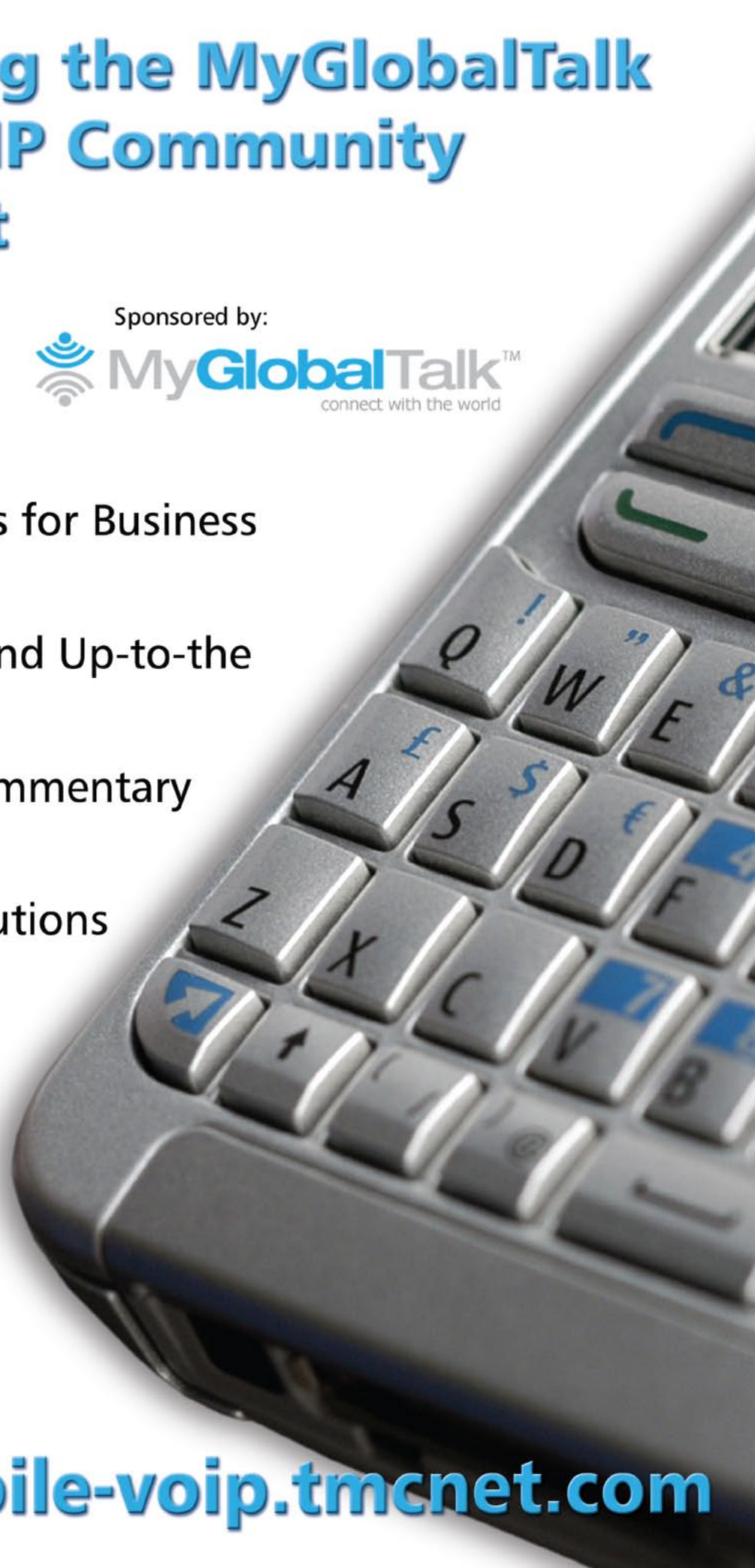

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by Grant F. Lenahan

The Differentiator

Two campers are in the forest, when they hear a bear approaching. One camper gets up to flee, but his companion sits down to lace his boots. The first camper warns his friend: "What are you doing? You can't outrun a bear!" His friend replies: "I don't have to. I only have to outrun you."

And there is the value proposition for a truly flexible, fast service delivery platform.

Most of the telecom success stories of recent times have been in the innovative world of mobile. And nearly all of them have been based on service innovation. The few shining lights from the fixed communications world innovated with pricing and plans, such as MCI's Friends and Family, Sprint's (News - Alert) "Dime Lady", or AT&T Wireless' Digital One rate plans, that ushered in the era of bucket plans.

Innovation will continue to depend disproportionately on creative pricing, charging and promotional plans. But as we move forward, it must encompass a wider range of services, from information to digital content; the services must work on a wider range of consumer devices (we certainly can't just call them phones anymore); and those services must be more highly personalized, just as services are becoming on the web.

The key issue is speed and differentiation. Tom Peters, of, "In Search of Excellence", famously wrote that "the only thing I learned in college economics is that wheat farmers under perfect competition don't make any money". Valuable lesson. Wheat is a commodity. One bushel is pretty much like another bushel, so growers compete with each other for the lowest price, and *that* sets the market price. Minutes of Use (MOU) is another good example of a commodity in search of a price floor.

So the key is to either differentiate those MOUs or to find things that are more differentiated. That's the lesson of the two campers and the bear. One well-respected operator in Brazil has a simple business model. They innovate several times a year, and make a disproportionate amount of their profits from those new services. After 12-18 months, these are "revenue generators", but no longer hugely profitable. Consequently, their business model is based on:

- Being faster than the competitors.
- Innovating at a cost that makes the business case work.

A couple years back the mobile industry embraced Service Delivery Platforms (SDP). These were largely proprietary boxes that enabled the sale of ring tones, wallpaper, and games without having to go through legacy systems. Their great virtue was that they were self contained and they worked. Their great vice was that they were self-contained and therefore silos: the classic two-edged sword.

Those monolithic SDPs' sell-by date has passed. Now *they* are legacy silos of their own, although still supporting important, revenue-generating, commodities. As always, today's consumer will only pay a premium for new service innovations. And they are demanding that content, for example, work across devices (e.g., play your iTunes on your Mac/PC and your iPod... and maybe on your mobile phone). Consumers are looking for fee structures, affinity programs, and other creative plans that reflect their needs. For some this means, "pay as you go"; while for others it means "all I can eat". Increasingly, it will be more complicated than that, and may even involve "paid by someone else" aka advertising.

So SDPs must move from their roots, to a more modular, standards-based and flexible incarnation. We believe that much of the industry is coming to general agreement on this point: that SDPs are *not* things, but rather *architectures*. An SDP, for example might include the charging *function* from company A, the policy *function* from company B, the transcoding *function* from company C, session control *functions* from companies D and E, and the Parlay/web services exposure provided by company F, etc. In this way, richly functional, standards-based building blocks may be assembled to create an SDP. And this SDP is likely to operate across protocols, networks and media, possibly even encompassing "legacy" networks like GSM voice and messaging where most revenues are still generated worldwide.

If we follow that path, the pointless arguments about whether something is IMS or SDP or whether it is a charging system or part of an SDP will go away, and we can focus on the goal of all of these acronyms, from IMS to SDP to OMA: Innovation and Differentiation. And if we do THAT right we can also concentrate on how to distribute our collective industry profits.

So SDPs = Differentation = Profits. And if they don't, it's pointless anyway.

Grant F. Lenahan is Vice President and Strategist, IMS Service Delivery Solutions at Telcordia T (News - Alert) echnologies, Inc. (www.telcordia.com).

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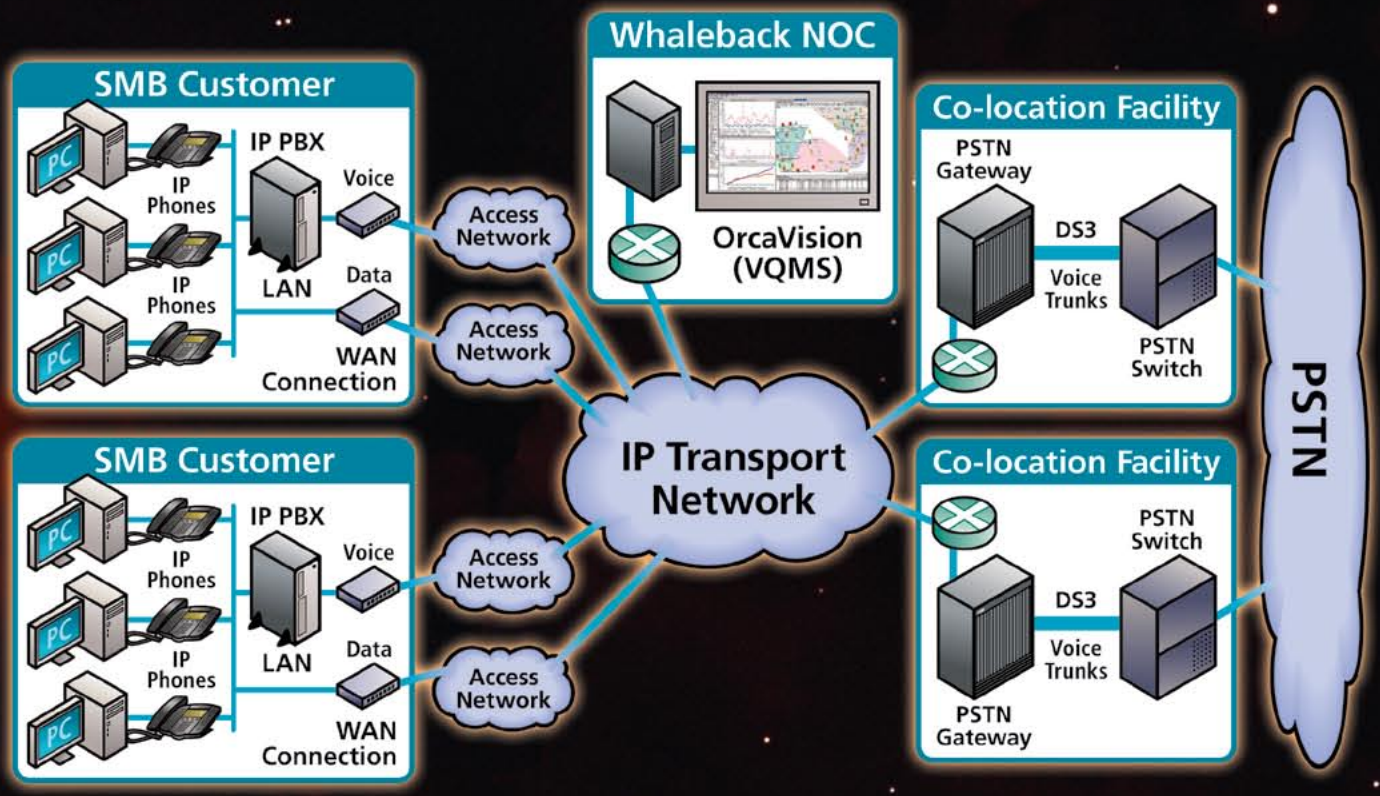

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by Richard "Zippy" Grigonis

"Flavors" of SIP and IMS

The original title of this article differed by one word – it was to be 'Flavors' of SIP in IMS, but Seamus Hourihan (News - Alert) of session border control maker Acme Packet immediately assured me that, "Theoretically speaking, there are not really 'Flavors of SIP in IMS' as defined by any single architecture group – 3GPP, ETSI (News - Alert), MSF, PC, and so forth. However, many service providers are not implementing IMS as defined by the architecture spec: SIP UDP versus SIP TCP transport, for example. And even if two vendors are implementing the same spec, things don't necessarily work until we fix things up."

Flavors of SIP

Hourihan, Vice President of Marketing and Product Management at Acme Packet (News - Alert), also says, "SIP is not really a single protocol. From a messaging perspective, there are various messages that are used to set up SIP, from an INVITE message to things such as RINGING, CANCELs, BYEs, ACKs and those are fairly standard. But then you get into things such as REFERs, which are messages to refer a call from one party to another or one place to another. There are new message types or new 'parameters' if you will, that come with IMS, such as the concept of identity, and PRACK, which are used to reserve network resources or bandwidth end-to-end. The problem with some of these things is that they significantly increase the number of messages required to set up a call."

"So, for example, in practice, take the things specified by IMS as defined by 3GPP," says Hourihan. "If you use PRACK, and you're roaming on an access network – your 'visited' network – and you go to a home network or a transit network, I can show you call flows that show how a simple SIP call that in one network might require 7 messages to set up a call and tear it down, in another might take 250 or more messages. The issue here is that we're trying to be very 'elegant' about ensuring that we have bandwidth for this 'one more call' all the way to the destination. The problem is that this approach can increase the number of messages so significantly that that it imposes a major performance burden on all of the elements involved. Those critical elements are session border controllers, softswitches, and in the IMS world CSCF [Call Session Control Function] elements involved in serving, interrogating and those types of things. Consequently, the number of subscribers or callers that can be supported becomes much diminished."

"Then you have other options within SIP," says Hourihan. "The transport protocol is one area. You may be familiar with UDP (News - Alert) [User Datagram Protocol], TCP [Transport Control Protocol] and SCTP [Stream Control Transport Protocol]. Each of these are options for transporting SIP at Layer 4 in network. Most of the deployments today use UDP. Why? Basically, because it's very simple and lightweight. It poses the least burden on signaling elements in terms of processing performance required. It is, however, connectionless, which means that if you lose a packet you probably won't be able to accept that call. TCP and SCTP are connection-oriented and so there's greater reliability. Many SIP endpoint devices today don't support TCP, especially SIP-based media gateways are a good example. Not all softswitches may support it. TCP is being specified by the SIPconnect standard for connecting enterprises with SIP trunks. TCP has been embraced by Microsoft in terms of OCS implementations. But again, much of the world today operates with UDP. Consequently, if you want to bridge networks, you need a product such as a session border controller from Acme Packet to be able to translate SIP UDP in on one side to SIP TCP on the other side."

"There are standards in the world that mandate SCTP," says Hourihan. "in the U.K., regulated peering requires SCTP between operators. Again, this is some of the complexity that we all must deal with."

"The next area is encryption protocols," says Hourihan. "Again, there a wide range of choices. Relative to IMS, on the access/subscriber side, IMS 3GPP would specify IPsec as the encryption protocol for both signaling and media from a tunnel perspective. CableLabs (News - Alert) PacketCable specifies TLS [Transport Layer Security], similar to SSL [Secure Sockets Layer] in the web world. You can use IPsec, not in 'tunnel mode', which handles both signaling and media, but in 'transport mode' which just handles signaling. Sometimes this is associated with TLS. You can also use SRTP [Secure Real-Time Transport Protocol] for the media. But consider that most of world's traffic today is not encrypted. Many endpoints don't support encryption. So a lot of the media gateways that connect traffic to the PSTN don't' support any encryption protocols and consequently need session border controllers in front of them to basically translate encrypted traffic to unencrypted traffic. Many of the media servers are in a similar situation."

"There's a lot of desire by service providers today to basically keep their core infrastructure," says Hourihan. "In IMS it would be the CSCF elements, media gateways, media servers, and the applications environment, all connected with basic SIP-over-UDP. Why? Because it's very simple. It has low overhead, which means you can support more subscribers and thus generate more dollars for your Capex."

"When talking about SIP flavors, you can even delve into such esoteric areas as response codes or error messages," says Hourihan. "For example, if the server is overloaded, or not everybody is consistent in terms of how they react to a problem, some people might issue a 404 message – these response messages you see on the web – however, different SIP elements, for the same type of problem, will generate different response codes. If the responses are being generated into another network, they sometimes need to be translated from one error code to another to evoke the proper behavior of the other elements in that network."

As for IMS, says Hourihan, "IMS assumes that every endpoint – IP phone, soft client, mobile handset, and so forth – can register itself

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for service with a SIP Registrar. The problem that poses relates to supporting enterprises. An IP PBX (News - Alert) aggregates a number of endpoint IP phones for which it provides initial call control. There's a need to augment the capabilities of those elements with the ability to do what we call aggregate registrations for those devices. The same problem could apply to a residential household environment, where you have some type of residential gateway that may be aggregating four wireline phones or even a wireless phone or a femtocell application, where you have multiple subscribers connecting to one residential gateway-type product. It needs to generate individual registrations for each of those four endpoints. Again, many of these residential gateways are an IAD [Integrated Access Device] and don't have that capability."

"People focus on SIP," says Hourihan, "but other things can be involved in setting up a call. These are completely optional in the context of SIP. One area is codecs. Most but not all IP phones today support G.711. And none of the wireless phones will support G.711. Why? Because the wireless world has its own codecs: GSM-AMR, EVRC and others developed to optimize bandwidth use in the radio access network that has lots of bandwidth issues today in terms of 2G and 3G, quite frankly, on the upstream side. This is the one area about which I'm least optimistic in terms of creating a single 'world' that works. As an example, Microsoft in their genius has invented two new codecs, MSRT Audio [Microsoft Real-Time Audio] a speech codec designed for real-time two-way VoIP applications, and a real-time video codec, both of which are proprietary to Microsoft and are the basis of their standard default codecs in an OCS environment. They're very good codecs but the problem is, despite what Microsoft thinks, the world isn't all Microsoft."

"Then there's H.323, believe it or not," says Hourihan. "As recently as 2007, many large enterprise PBXs were still using H.323 on the trunk side. These must be interworked to an all-SIP world."

Flavors of IMS

Chad Hart (News - Alert), Senior Product Marketing Manager at Empirix (one of the world's great providers of voice testing and monitoring solutions), says, "What's more interesting is that, with such various technologies and codecs, you actually have different 'flavors' – there's definitely different interpretations of how to build an IMS-like network. There used to be a lot of differences. The 3GPP2 had its own set of specs with its own differences. There was ETSI TISPAN with its own set of specs. And there was a bunch of other groups out there such as the MultiService Forum and ATIS (News - Alert) and even OMA that had their own architectures. Over the last three of four years there has been a lot of convergence and coordination among all these groups to minimize the number of differences."

"A number of things have happened," says Hart. "First, the ETSI TISPAN group that was working on the core infrastructure of IMS had its efforts rolled into the 3GPP. It's now one group that does all of that. The CableLabs group more or less took the IMS architecture and reused as much of it as possible – there still are some differences in their architecture. Cable has good robust policy and bandwidth control schemes, which are new to wireless and DSL networks. So, whereas CableLabs decided to stick with its existing policy and resource control infrastructure, ETSI TISPAN decided to take its own approach. How they do things like that boils down to the fact that cable operators are building on a cable network and IMS was really initially designed for a wireless network, and then adapted to DSL-type and other networks. Groups such as the OMA coordinated with the 3GPP and realized that a lot of their standards for things such as push-to-talk and presence, are a fit within the IMS architecture."

"The MultiService Forum (News - Alert) for the most part has adopted the IMS architecture," says Hart, "although there are some differences and they're probably a little more specific in some areas, and the way they break out some of the border control aspects of IMS is a little different than the names that you'd normally encounter in IMS. At the end of the day, however, the actual devices and vendors and people involved in actually building IMS products are premised all the same but, depending on which reference you're talking about, some things have a slightly different name, and there may be some differences. It becomes a headache if you're a product manager or developer trying to figure out which reference refers to what. When you get into the actual details of specifications, there are in fact some differences that need to be worked out. Even so, there is a lot more harmonization than ever before, at least at the higher levels of the IMS architecture."

"In the mobile world, some of the components behave differently," says Hart. "The mobile world uses a compressed version of SIP. They use SigComp [Signaling Compression] which is a solution for compressing messages generated by application protocols such as SIP. There's no reason to compress SIP headers in the wireline world, since there's plenty of bandwidth. In a wireless network, however, because there's so much latency there is in fact an advantage to do compression."

Just for the Taste of It

Both SIP and IMS have their respective "flavorings", but they are becoming increasingly similar and subtle – an expected process as technologies in different operating environments slowly converge as they come into standard usage.

And Yours Truly even managed to get through this article without making a "tastes like chicken" joke.

Richard Grigonis (News - Alert) is Executive Editor of TMC's IP Communications Group.

Companies Mentioned in this Article:

Acme Packet
www.acmepacket.com

Empirix
www.empirix.com

CableLabs
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By Richard "Zippy" Grigonis

Business Models for IMS

Both business and architectural models tend to reflect a network operator's greatest expertise. Thus, a mobile operator would use the multi-device awareness and seamless mobility capabilities of IMS to combine wireless voice, SMS, mobile multimedia and broadband to offer an "all-mobile experience", for a flat fee. A triple-play cable operator would combine bundled services with mobile service to offer "the connected home and office". Traditional telcos would create a comfortable, simple, "walled garden", within which IMS is deployed on their network to create a secure, stable, high-QoS environment populated with differentiated, churn-busting services.

Over time, however, one would expect that network operators, in their effort to find and bundle more services than they could develop themselves, will evolve into a more complex, federated IMS model. This involves more intimate, peered connections to service providers so that as many new and exciting third-party content and services as possible can be offered to subscribers. In this world, IMS continues to organize any and all applications running in next-generation networks. IMS thus enables highly-integrated service ecosystems, providing users with services they want that would otherwise be too complex or expensive to build using vertical, "silo" solutions.

As Mikael Stromquist (EVP, Strategy, for Ericsson North America) has said, "As it becomes more difficult to hold subscribers inside a walled garden, operators recognize they must adapt their approach and this is where the true value of IMS resides... IMS will enable network operators to retain or in some cases increase their revenue while offering their subscribers greater variety and choice – and third-party providers will have greater access to subscribers as well as the opportunity to continue creating new services consumers want — and will pay for. The ecosystem enabled by IMS continues to evolve, and undoubtedly additional models will emerge."

Ultimately, the changes wrought by the IMS universal services architecture affect the content delivery models, which in turn influence the high-level business models. Capex and Opex savings may drive IMS deployment in the short term.

Although IMS was first formulated as a tool for mobile operators, the fixed operators initially took the lead. Indeed, mobile services can even be bundled with IMS-friendly services without IMS actually being used for the mobile component.

For example, Movial Corporation (News - Alert) has a solution and service offering for rapid creation of Linux-based mobile devices. Called Movial Communicator, it's an applications suite enabling device manufacturers and service providers to rapidly launch revenue-generating, converged services such as presence, instant messaging, Push-to-Video, VoIP, and video telephony. The services based on Movial's products across PC, Mobile and other device platforms are meant to increase service usage.

Although IMS was first formulated as a tool for mobile operators, the fixed operators initially took the lead.

Recently Movial announced that Optimus, a major mobile operator in Portugal (Mobile Carrier of Sonaecom and partner of Orange group) has launched a new mass market IP Communication PC service, powered by Movial Communicator. With Movial's PC client software, Communicator, Optimus extends its services to PC users for the first time, increasing its subscriber base and offering its more than 2.8 million existing subscribers an additional and exciting channel for rich, multimedia communication. With its compelling and fully integrated end-user experience that includes IM, SMS, MMS, email, VoIP, video telephony, voice and video mail, all based on Presence, Movial Communicator enables Optimus to quickly launch its PC service and is the first new service to sport Optimus' new branding.

As Movial's CEO, Jari Ala-Ruona (News - Alert), says, "Optimus is a Portuguese mobile customer, and they launched our PC Movial Communicator and they bundled that PC application with the regular mobile subscription, which is a flat fee of about 10 Euros. The flat price covers all mobile calls within

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the community served by this customer. Additionally, you have prepaid and prepaid mobile calls when they are within the customer's number space. They're launching an aggressive campaign where subscribers get a simcard subscription and in addition would have a PC application and in terms of mobile there would be no IMS services. The IMS service is for what you can do with the PC. It's a unified user experience that includes voice and video services, text messaging, multimedia messaging, CAS capability, voicemail and presence capability. It's access agnostic so that although you get a mobile subscription for your mobile phone, the mobile operator can offer a service on the PC and they're not even trying to bundle that so that you don't have to exclusively use this from our mobile network or our ADSL fixed broadband connection. It's totally access-agnostic. So you can use it anywhere you have a PC connection to the network."

"...revamping a network architecture to one of IMS compliance involves justifying large long-term investments and deciding which service delivery platforms to adopt..."

"What's neat about this is that young people who hang out on different kinds of social sites tend to use PCs for their media consumption, rather than the TV," says Ala-Ruona. "What you can do with our piece of software is press a button and all of your mobile calls will be transferred via your PC. If you're travelling, you don't need to worry about roaming charges. It's very convenient for the end user. The business model, as I've said, is a simple monthly fee and that includes all communications within the operator's numbering space. And if you're calling somebody who has not subscribed to this service, then you pay conventional mobile phone per minute rates. Likewise for SMS messages, which are charged per message to those outside of the service."

"This launch has been interesting not just for the operator but for us as well, since it showcases how IMS has actually 'crossed the chasm'," says Ala-Ruona. "It's really mainstream now. It's bundled in the mainstream application layer and there's a huge marketing campaign behind it. The whole introduction of a low flat-fee by the mobile operators changes things, as does multiple forms of access to the network, and what's even more proliferating is the fact that the services aren't tied to the mobile phone any more. You just get one bill, which lists your PC and mobile calls. You don't have to worry about how you get charged by using a PC application on the network. It's all about simplicity."

Arun Bhikshesvaran, Vice President & General Manager of Strategy & Market Development within the North American Market Unit of Ericsson, Inc., recently wrote on tmcnet.com, "Blended multimedia and communications services are starting to happen, and so is the journey to IN and circuit-switched network modernization. Perhaps an even more significant advancement will be when network operators turn their own service and application offerings into one of several service domains that will become available in managed, efficient and controlled ways over their networks. In other words, for network operators and the IT, media and communications industry to drive a win-win service delivery interface and business model that allows for free-flowing collaboration between applications and services innovation, as well as professional and user-friendly service delivery and device management... This scenario would benefit end users and attract addressable revenues from advertising and transaction into the wrestling ground. Some traction is already being made outside of the U.S., where mobile operators have opened up to Internet brands and integrated the Internet portal with mobile services."

Many network operators have approached IMS at a leisurely pace, as they review the benefits (or disadvantages) of IMS in terms of cost savings, new revenue streams, enhanced capabilities and service provisioning. In today's economic climate, revamping a network architecture to one of IMS compliance involves justifying large long-term investments and deciding which service delivery platforms to adopt and which IMS elements to deploy first.

Before everything is said and done, we'll probably see novel IMS business models spring up and transform both network operators and their service provider partners.

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

Companies Mentioned in this Article:

Ericsson
www.ericsson.com

Optimus
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by Brough Turner

IMS Walking in IN's Footsteps

Twenty years ago, the Intelligent Network (IN) was the telecom industry's hope for rapid deployment of new services. While IMS and IN are technically very different, there is much IMS can learn from the history of IN.

While IMS proponents claim it will enable operators to easily deploy rapidly launched, high-value services that will increase Average Revenue Per User (ARPU), questions remain about when its widespread adoption will occur.

The same problems that limited the IN to about five "killer apps" — complexity and the lack of open standards for the service creation environment — may limit IMS' potential. Key players that should be working together aren't on the same page. Network equipment providers want to lock operators onto their proprietary standards. Application developers want interoperability so that services such as video sharing can extend beyond the AT&T network. Operators just want to be first to market.

Of course there is no ironclad way to accurately predict IMS' overall impact 10 to 20 years from now. But its initial evolution closely resembles the stutter steps the IN made toward widespread adoption. The implications for operators, Network Equipment Providers (NEPs), value-added service providers and subscribers are far-reaching.

Network Smarts

The IN gained traction in the late 1980s and early 1990s as operators who were locked into using one equipment provider's products sought a more flexible architecture that would make it easier to change, add or subtract services. At the time, the only way an operator could add voicemail for example, was to go back to Lucent or Nortel (News - Alert), depending on which equipment they had. Deployment time depended on equipment providers' timescales for configuring, deploying, testing and launching the service — sometimes as long as a year or more.

The IN infrastructure defined trigger points in traditional call flow and then leveraged Signaling System #7 (SS7) to transfer information and control to independent computer systems (called Service Control Points). This meant that new services could be launched independently of the original switch vendor, thereby shortening launch time and giving operators more flexibility in determining what new services to deploy.

In the early 1990s, proponents tagged IN as the next-generation network that would deliver a raft of new communications services that stretched the imagination, and provide a more streamlined approach to application deployment and management.

There is no question that the IN has had some wildly successful applications:

- **800 and 900 numbers** — The IN enabled the flexible billing behind toll-free and premium rate services so prevalent today.
- **Mobility** — Mobile telephony is now measured in billions... as in subscriptions (3.3 billion, according to Informa (News - Alert)), and revenues ($100 billion in text messaging alone in 2007, according to Informa).
- **Voicemail** — The IN allowed operators to set up innovative applications, such as voicemail, from third parties.
- **Prepaid calling services** — This is another innovative application developed by third parties that determines if a subscriber has enough money to pay for the call, or whether the system should divert the call to an interactive system that tries to sell more credits.
- **Ringback tones** — The IN enabled this third-party application to get control of the "alerting" phase of call setup, matching an inbound phone number with pre-determined ring tones.

But that's it. We did not see the hundreds and thousands of new services that were predicted.

It's true we gained innovations that will be a crucial part of how we communicate for years to come. Mobility alone has had more global impact than any prior telecom innovation. But, while the applications that succeeded are widely deployed, there are only a few of them, hardly living up to he hype that fueled such lofty expectations for IN's potential.

Why didn't the IN reach its expected zenith? First and foremost, the network complexity that enabled the above services also made new service development prohibitive. Putting the "intelligence" into the network to allow different nodes to send and receive signals based on standard protocols inherently made the network more complex. As the network grew (i.e., more interoperating nodes and switches and more protocols), the more complex it became.

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So when an operator wanted to add a new service, the first step prior to deployment was extensive regression testing. Ensuring new services would not only perform as they're supposed to, but also not affect other services, was a time-consuming undertaking that cost millions of dollars. For many operators, it was too big of a bullet to bite. Why would they risk spending that much money to develop, test and launch a new service if there wasn't a big enough market for it?

Ultimately, that chicken-and-egg scenario limited the IN's potential.

Sliced Bread Anyone?

So far, IMS appears to be headed down the same path. It has certainly attracted the same kind of initial hype and stratospheric expectations as the IN.

Like the IN, early-stage IMS promises a platform on which operators can deploy innumerable new revenue-generating services based on the session initiation protocol (SIP) and Real-time Transport Protocol (RTP) standards and open interface specifications. The premise is to provide fine-grained control of sessions so operators can guarantee QoS (and bill) on a per-session basis. Doing so should enable applications like video sharing, which needs some reasonably constant minimum bandwidth to stream video.

IMS is promoted as the technology to enable Push-to-talk over Cellular (PoC) and the video portion of video sharing (the voice part of the call uses existing voice telephony). Eventually, Fixed-Mobile Convergence (FMC) will leverage IMS using voice call continuity (VCC), but today, most deployed FMC implementations actually use pre-IMS technology, i.e. Universal Mobile Architecture (UMA). To the extent instant messaging (IM) is available on mobile, it also relies on pre-IMS standards, at least for now.

Some IMS proponents foresee a full menu of services as future IMS success stories, including: interactive applications such as gaming and shared folders/sync data; voice/multimedia unified messaging; IMS-enabled voice and video telephony; video conferencing; IPTV/IMS service blending; enterprise routing services.

That said, last fall I moderated a Connect 2007 panel featuring executives from Ericsson and Nokia and industry pundits discussing what's next for IMS. The panelists, all IMS advocates, agreed that for the present, actual IMS deployments are very few, and limited to specific applications like video sharing.

Making Dumb Pipes Smart

As with the IN, the IMS infrastructure's inherent complexity will likely limit its showcase applications that achieve global adoption to just a handful. The complexity comes from attempting to add intelligence and fine-grained control to the Internet. With the Internet, devices connect directly to each other. With IMS, devices ask the network to provide a specific connection to another device.

In an IMS infrastructure, a session begins when a SIP proxy on the IMS system receives a signal from a caller's device. That proxy server transfers information and control through a series of servers that determine who the call recipient is and where that person is, and whether there is enough network capacity to provide the desired bandwidth and latency (for example for a video sharing session). All of this occurs before the call or session is connected. The same system works to ensure accurate billing after the call is over, when it's time to tear down the session.

But having this greater control over the session comes at a price, which is complexity, and which in turn drives cost. So IMS will not be used for traditional voice telephony until IMS has been proven with new revenue-generating applications. Why? Because the cost of IMS is high and potential savings are modest. Why would operators want to take the risk and pay the expense when their existing voice networks are generating revenue and working fine? It's only the potential for new revenue sources that can justify IMS deployments.

A final parallel between IMS and the IN is the lack of standard service creation environments. IMS standards define a standard communications network that could potentially support a variety of applications. But IMS does not inherently provide standards for service development or service deployment. It does not say anything about the Application Programming Interfaces (APIs), databases, programming languages or other tools that an application developer might use to create new services.

Instead, this development support comes from service deployment platform vendors. Because the APIs only work with specific equipment providers' systems, developers can only build applications that run on specific equipment providers' gear. So again, operators are forced to use proprietary IMS service deployment platforms. This in turn will slow widespread adoption, much as it did with the IN.

We won't know for perhaps a decade whether IMS proves more successful than the IN in delivering on its promises. What we do know is that for IMS deployment to gain momentum, someone needs to develop one really successful new revenue source or several moderately successful new revenue streams based on the infrastructure. Until then, application development, new services offering and subscriber adoption will creep forward at a slow pace.

Brough Turner (News - Alert) is Senior VP of Technology, CTO and Co-Founder of NMS Communications. For more information, please visit the company online at www.nmscommunications.com.

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by Richard "Zippy" Grigonis

IMS Service Creation and Provisioning

One lure for network operators to migrate to IMS is the ease with which one can create and deploy new revenue-generating and churn-reducing service offerings. Although flexible and easy service creation may be possible in the IMS world, there are a multitude of creation paradigms one can follow to architect and implement IMS-based solutions, both for the operators themselves as well as third-party service developers. GUI Service Creation Environments, APIs and scripting languages are just a few possibilities. Given the leisurely pace of IMS adoption, the latest rage in the quick creation of services that can be delivered to multiple devices involves SDPs (Service Delivery Platforms) also called SDEs (Service Delivery Environments) as promoted by BEA Systems (now part of Oracle), IBM (News - Alert) and Microsoft.

Oracle's Ty Wang, Senior Director of Product Marketing, says "What does Oracle bring to this equation? Well, first, we've definitely invested a great deal in communications software technology, not only with our developments over the past few years via some acquisitions, but also with the BEA acquisition and their WebLogic communications platform, we actually do feel we have a pretty solid technology base now to go after the market for the services layer."

"When we talk about service delivery with customers," says Wang, "we tend to use two terms: 'blend' and 'extend'. The 'blend' relates to service proliferation, and how you actually proliferate many services that blend many capabilities. Many developers would like to blend voice with messaging, video, presence and different capabilities. So, along that dimension, we've definitely gone to market with service creation tools, we've gone out with our application servers and our SIP [Session Initiation Protocol (News - Alert)] application servers and our service creation environments to build both SIP servlets as well as Web Services to make it easier to develop applications. We've also gone to market in exposing things such as charging to developers so that they can be more proactive in building such functionality into their applications."

"One might ask how we're doing in terms of the rest of the world," says Wang. "We judge the ability to 'blend' capabilities quickly, you can argue that Googles and the Facebooks of the world are still providing more powerful APIs and making it easier to create new services. But we're definitely looking at it in terms of exposing capabilities to developers so that they can more quickly do blending using things such as enablers. So, with the acquisition of BEA and what was their network gatekeeper product, we actually see the ability to expose the capabilities of legacy networks along with IMS networks in a more powerful fashion."

"You can also argue that it's all about service revenues and maintaining a close relationship with the customer," says Wang. "That's more around the 'extend' dimension with which we've seen most carriers struggle in terms of servicing their customers. This 'extend' dimension works like this, 'I've got this cool service, but how do I actually put this in my network?' I've got billing and revenue management systems, provisioning systems, and all kinds of policy and security functions that I must put into place so that I can migrate from a more trusted network to an untrusted network, which seems like what the world is moving toward."

"So, the carrier customers with which we work are wondering how they can actually embrace the third parties. That's where we see many of the trends concerning the implementation of IMS-type functionality before the core network evolution occurs. I think a lot of customers have associated IMS with a major 'network overhaul' and putting a layer on top of their existing core networks, and buying CSCFs, HSSs and things along those lines. Many of our customers are simply taking a more pragmatic approach, saying, 'Okay, if I really want to embrace these third parties, what am I doing about things such as policy, security, billing, charging models, and things like that?' Pragmatism has led our customers to use more standards-based IT software to approach the 'extend' dimension, since we spent a lot of time over the last few years worrying about the 'blend' dimension."

Oracle/BEA believes their SDP approach should simply be sufficiently modular to interface to OSSs and BSSs. Other players, such as IBM, are said to favor all-inclusive, approaches wherein OSS/BSS functionality is integrated into the SDP/SDE.

A Helping Hand

Oracle was wise to acquire BEA's technology, since it's used worldwide in conjunction with other development tools and environments. For example, Ericsson's Windows-based Service Development Studio (SDS) — part of Ericsson's IMS system offering — can be used to develop and do end-to-end testing of

IMS applications, and the most recent versions (4.0 and higher) support BEA WebLogic SIP Server, enabling it to be used in the development of IMS client applications via its use as an IMS core network simulator (P-CSCF, S-CSCF, HSS, and DNS) with availability of service enablers (presence, group manager, push-to-talk, IMS messaging), plus user device and SIP-server emulators. SDS provides high-level APIs to hide device and network complexity for the designer and various templates and wizards for client and server-side development help the developer shorten project lead times.

SDS is based on the Eclipse Integrated Development Environment (IDE), loaded with such components as a visual network display with testing support using test agents and automated test framework; an IMS Client Platform (ICP), with pre-JSR 281 and IMS Service APIs; and a Symbian (**News** - **Alert**) device emulator. SDS has been used for multiple IMS applications with concluding customer trials and demos. IMS clients developed using SDS consist of two separate downloadable parts: The Ericsson IMS Client Platform (ICP), and the IMS Client application developed with SDS. The client creation part of SDS supports application creation for initially open OS Symbian mobile phones (SonyEricsson P990, M600, etc.) and PCs with Windows OS. Future plans are to support other open operating systems, such as Windows Mobile and Linux Mobile, and to provide a network proxy-based Client Utility API to IMS-enable JME feature phones currently without SIP/IMS capabilities.

The server application creation part combines support for key telecom interfaces and protocols with standard Java and Internet-centric technologies. The Service Execution Environment (SEE) for the server side of the newly-developed IMS Service application is emulated in the SDS. It's a JSR 116 (SSA 1.0) standards-compliant SIP Application Server, as defined by the 3GPP, and consists of SIP and web (HTTP) components. Future server-side plans are to include support for SIP-AS compliant to JSR 289 (SSA 1.1), Media control support to JSR 309, and JEE support.

Even when running on a standard PC, SDS can also serve as a trial execution environment with limited capacity and scalability by connecting it directly to the trial IMS core system via the IMS Service Control (ISC) interface. This trial IMS core system could be at the customer's premises, a real network, or an externally hosted solution. For hosted solutions you can use Ericsson's Remote IMS (RIMS) lab or IMS expert center.

Recently, Ericsson performed live demonstrations of end-to-end mobile service creation using SIP and IMS using Java ME (Micro Edition) and Java EE (Enterprise Edition). It's now possible to develop a simple messaging application using low-level SIP communication APIs (JSR-180 on the client side and JSR-289 on the server side). Ericsson has also demonstrated how to quickly develop an application for publishing videos recorded with a mobile phone on YouTube, using the IMS Service API (JSR-281).

Just Add Water and...

The flagship product of Personeta (**News** - **Alert**) (a company founded in 2000), is TappS NSC, a standards-based service creation and execution platform enabling service providers to rapidly implement converged services at far less cost than traditional telecom services. Right now TappS NSC is deployed at some major service providers worldwide where it's used to delivery a variety of highly-segmented converged communication services over legacy and packet-based infrastructures.

Given the increasing number of devices and the evolving nature of the IMS environment, service providers are demanding interoperable infrastructures that will ease the delivery of services worldwide. That's why Personeta has even partnered with HelloSoft (**News** - **Alert**), Inc., a provider of VoIP/IMS/VCC [Voice Call Continuity] technologies for wireline and wireless devices to collaborate on IMS/VCC initiatives so that service providers can easily develop and deliver enhanced voice, data, image and multimedia applications as fast as possible and at the lowest cost.

The HelloSoft/Personeta collaboration makes possible a Fixed-Mobile Convergence (FMC) ecosystem, wherein the budding end-to-end IMS solutions are able to operate on various dual-mode and multi-mode handset devices. Thus, devices enabled with HelloSoft's IMS/VCC client will now work with Personeta's TappS NSC Mobility Management infrastructure to deliver genuine mobile broadband capabilities such as video and VoIP.

There's still quite a bit of inertia for network operators, service providers and carriers to overcome, since the old SS7 infrastructure has been around for a long time. But given the advanced and terrific IMS SCE and SDP solutions that are now appearing, we can expect some further acceleration of IMS deployment and services creation.

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

Companies Mentioned in this Article:

Ericsson *www.ericsson.com*	Oracle *www.oracle.com*
HelloSoft *www.hellosoft.com*	Personeta *www.personeta.com*

From the Desk of Michael Khalilian

IMS NGN Forum Announcing their NGN M-play Plugfest 6 and Documents Releases

Consumers/Enterprise Interoperability Plugfest 6, January 12, 2009
IMS/NGN Forum announced the Plugfest 6 plan for January 12 thru 16, 2009, which will cover the local and visited network services including the following:

- Inter and intra-domain services routing
- Visited networks scenarios
- Billing and charging
- Presence and location based services
- Interfaces operational testing (SIP- Gm interface with various security profiles, DIAMETER Sh interface)
- Others including SIP signaling compression and enhancements, and multiple profiles for public and private users

IMS/NGN White Paper (News - Alert)

IMS/NGN Forum developed number of technical, architectural and guideline documents. The following are 2008 releases:

- Requirements for IMS Charging
- The Foundation of the Business Case for IMS
- Secure Mobile Communications with IMS AKA signaling
- Prack Method and Usage
- Rich Multimedia Applications on IMS Framework
- Building Reliable, Available and Secure Service Provider IMS Networks
- Challenges of Voice Call Continuity
- P2PSIP and the IMS: Can they complement each other?

Latest IMS/NGN White Paper Release

"P2PSIP and the IMS: Can they complement each other?" Is Peer to peer (P2P) and IMS, or P2P versus IMS? This paper, the first in a series, addressing one of the most intensely debated issues in IP Multimedia architectures, services and applications, will be followed by other papers describing in more details solutions for load balancing, scalability and services. Many are seeing IMS and P2P as two antagonistic architectures; the first has a control layer at the core, while the other doesn't. The debate over 'centralized' *versus* 'decentralized' is not new and the Internet didn't really change the essence of this debate. First, we need to recognize that the reality is never 'pure'. Neither fully centralized nor fully decentralized models are used in real life. The paper proposes a different approach to the IMS architecture standardized by the ETSI, ITU and CableLabs; it follows a set of proposals made in IETF for P2P SIP services, and discusses how these could be applied to the IMS architecture at the core of the IMS network.

The IMS/NGN Forum is a global telecommunications industry associations devoted to interoperable IP Multimedia Subsystem (IMS) and Next Generation Networks (News - Alert) (NGN) services delivery architecture and solutions. IMS Forum's mission is to accelerate the interoperability of IMS and NGN services and to enable enterprise and residential consumers to benefit fully from the delivery of multimedia mobile and fixed services over broadband cable, wireless, wireline and fiber networks. The IMS Forum (News - Alert) is the creator and organizer of the IMS Plugfest™and NGN Plugfest™, the industry's only event focused on verification and certification of IMS and NGN services interoperability through the IMS Certified™ and NGN Certified™ program. Through its organized plugfests, technical working group interactions and other activities, forum members are able to develop cost-effective technical frameworks for converged IP services over wireline, cable, 3G, 4G, WiFi, WiMAX (News - Alert and femtocell broadband networks. For additional information or to join the IMS Forum, NGN Forum and the IMS Plugfest, NGN Plugfest, please visit www.IMSForum.org.

Michael Khalilian (News - Alert) is Chairman and President of the IMS/NGN Forum (www.IMSForum.org, www.NGNForum.org, info@IMSForum.org).

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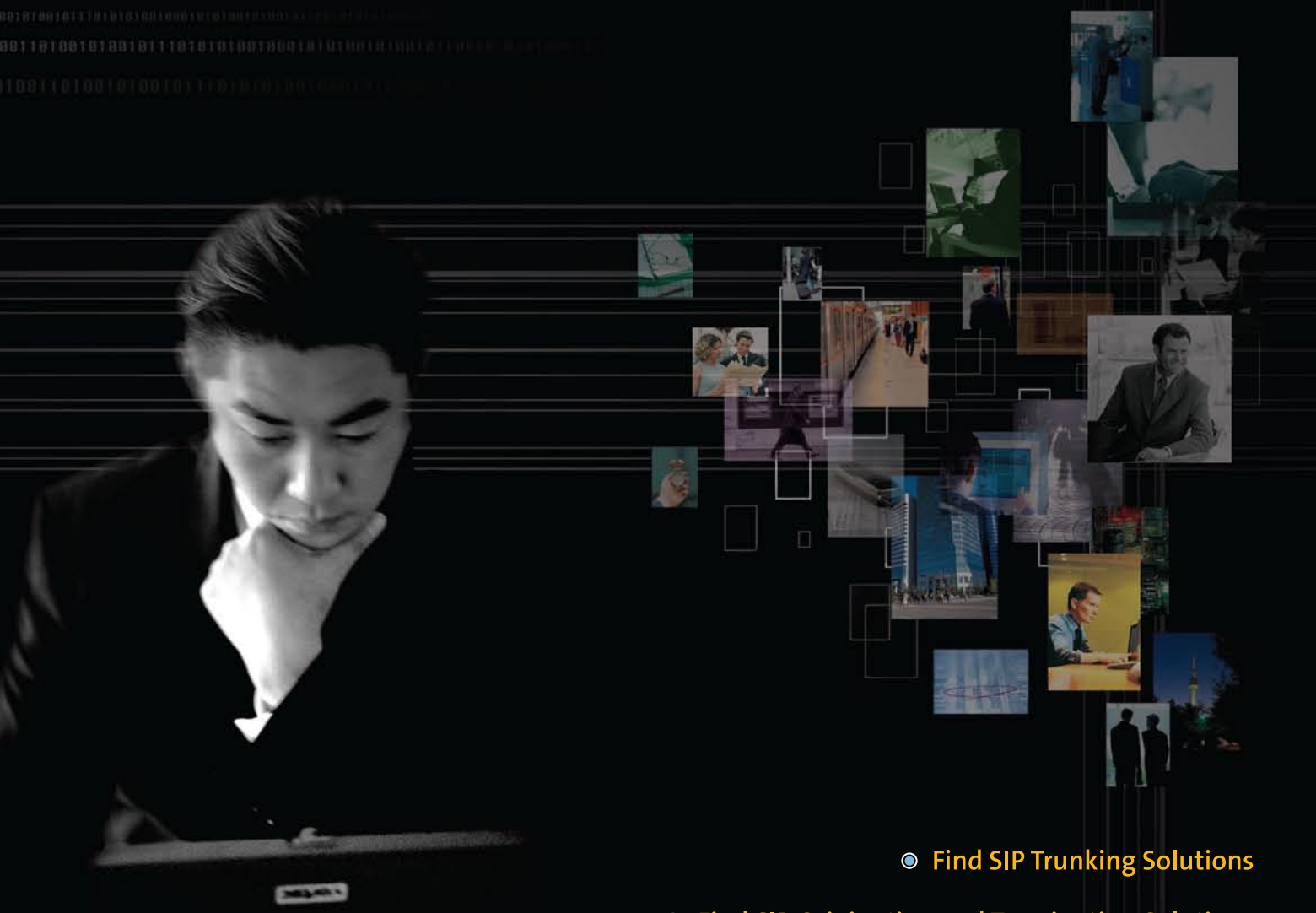

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