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Addressing the Challenges and Opportunities of IMS Pragmatically

By Liam Maxwell

While innovation and technology provide the foundation for the communications industry, they can also sometimes get in the way of a great idea. For example, to help communications service providers (CSPs) integrate and orchestrate IP-based multimedia services across disparate network domains, the mobile telecommunications industry standards group 3rd Generation Partnership Project (3GPP) has introduced IP Multimedia Subsystem (IMS) – an industry standard for defining the IP-based next-generation network architecture to enable the convergence of voice, data, video, and other types of content into real-time, multi-party communication services, and its delivery over any type of communication or broadband network. However, while this new, promising technology continues to mature, highly successful internet players – such as Google, Skype, Facebook, and MySpace – have taken the lead in blending communication services with their Web 2.0 service innovation and are raising customer expectations for integrated functionality and high-quality user experiences. So how can traditional CSPs compete with these internet leaders, escape the confines of their legacy systems, and deliver services that hit the mark?

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It is clear that next-generation network architectures such as IMS can help CSPs gain a competitive advantage and increase revenue potentials, but a full-scale implementation can be costly and time-intensive. With a priority to more effectively compete with nimble, innovative internet and broadband players now, CSPs often struggle to make a business case for a full IMS implementation that promises significant cost and revenue benefits later. Further, in today's financial environment, as it becomes more difficult to access the capital needed to finance a full-scale IMS roll out, it is even more critical that CSPs find a more pragmatic approach. CSPs can use standards-based service delivery platforms (SDPs) and key enablers to make the move to IMS pragmatically, while enjoying the benefits of new service revenue. By leveraging SDPs to deliver and derive revenue from legacy and next-generation communication services immediately, CSPs can modernize their business and operational IT systems incrementally, with reduced risk and cost.



The Challenge

Over the next several years, next-generation architectures such as IMS will begin to eliminate the boundaries between wireless and wireline networks, so that network domains no longer matter when it comes to service creation, execution, and delivery. CSPs are looking to IMS to deliver carrier-grade networking, reliability, accounting, security, and a range of real-time multimedia service capabilities, with the ultimate goal of delivering an "industrial strength" platform on which global enterprises and consumer-content providers can build future strategies. However, IMS is a highly complex architecture that could introduce significant risk and expense if service providers rush into full deployments to tackle short-term market challenges. In addition, the industry still needs to flesh out and test critical aspects of IMS, such as service-layer functions including creation, delivery, and orchestration that are not specifically defined. While these maturity issues can and will be resolved, it will not happen quickly enough to give CSPs the services they need to satisfy their immediate time-to-market pressures.

The Competition

The reality in today's communications industry is that strong internet players have already moved ahead by providing exciting services, driving massive uptake of new services in short time periods, and delivering multi-channel, communication-

enabled Web 2.0 services over IP.

These internet companies are able to create and launch new services quickly because they are not held back by fragmented legacy infrastructures. In contrast, CSPs rely heavily on siloed, network-specific systems that escalate operational and business costs when they need to be extended or enhanced, thereby hindering providers' ability to adapt rapidly and compete successfully against more nimble internet players. For example, many CSPs' service capabilities are spread across diverse and often redundant network infrastructures that are not merged effectively, making it difficult to deliver a consistent, efficient customer experience. In the meantime, customers are demanding bundled, personalized services and a holistic customer experience based on a complete understanding of their preferences and history – all of which require complex integration.

Internet players are succeeding by delivering cross-domain, multimedia services that do not require sophisticated signaling and orchestration infrastructure. Unfortunately, this success diverts potential revenue away from traditional CSPs. For example, Google can deliver nearly all of its services on internet-capable mobile handsets such as the Apple iPhone, and an increasing number of businesses and individuals are using Skype's integrated voice, instant messaging, presence, and video conferencing capabilities to provide inexpensive global communications. In addition, internet video is exploding across all channels. YouTube video clips are not only making people famous on the internet, but they are even included on network television broadcasts. Organizations such as the English Premier League, the National Basketball Association (NBA), NBC News, and the British Broadcasting Corporation (BBC) are making content – once limited to broadcast, cable, and satellite television – available anywhere in the world via the internet.

With all the multimedia services available on the internet today, and many for free or extremely low cost, CSPs cannot wait for IMS to rescue their businesses from internet competition. The competition is here today; it is real, and CSPs must meet it head-on with comparable or superior offerings.

The Solution

CSPs have an opportunity to attract and build highly valuable partner ecosystems that will help them innovate by bringing in Web developers and service providers to increase their competitiveness with internet players. By matching the kinds of services internet companies provide and then adding unmatched telecommunication services, CSPs can retake the lead. But to do this, they must incorporate quality, reliability, security, content protection, and accounting/billing into their offerings.

Traditional CSP infrastructures need a standards-based, easily accessible service layer that makes key underlying capabilities – such as presence, location, charging, and messaging – available so that partners can incorporate them into their own offerings. This standards-based service layer – ideally built on a pre-integrated SDP infrastructure – must be practical enough to be delivered rapidly and with minimal risk. It should leverage the networks, IT infrastructures, and skill sets that CSP organizations already have, and it must also provide a fast path to revenue that justifies the business case.

An effective services layer architecture cuts across multiple access networks within a SDP, building on existing services and pulling them together without actually merging or migrating them. The goal is to transform the SDP services layer with a converged service creation and execution environment before implementing IMS so that services are no longer network-specific, but rather are "network-agnostic" and able to fluidly traverse IP-based domains.

In addition, the services layer must draw upon the network capabilities, or service enablers, in the SDP – including presence, conferencing, location, subscription management, charging, logging, quality of service, policy enforcement, and security. Because these capabilities are not inherent to internet-based service providers, they are critical competitive differentiators for CSPs.

Enablers use a simple Java or Web services interface to make systems and services network-agnostic, providing CSPs with an easier way to manage services, reuse network components, and create more sophisticated, converged services than are currently available on the internet.

A well-defined enabler brings underlying network technology features and settings into a component that the CSP can tie into a service and deliver predictably. Enablers help stabilize application development by providing developers with a common way to use the capabilities of the component – regardless of which protocol extensions are in use. This enables migration at the network level and allows the CSP to carry out integration with existing and future network elements incrementally, without the wholesale replacement of silos.

Enablers that encapsulate commonly required capabilities allow operators to consolidate and share operational support system/business support system (OSS/BSS) functionality across multiple services. Consolidation across multiple networks and network technologies is critical for the convergence of wireless, wireline, and broadband networks. Having a unified view of the systems for identity management, charging, subscriber profiles, customer relationship management, and partner management makes migrating services across network technologies and vendors significantly more cost-effective than service-centric or silo-based approaches.

Further, CSPs must build IP-based services layers within their SDPs on open industry standards to make them more easily accessible to third party partners and external developers. The simpler the process, the quicker CSPs can deploy and generate revenue from new services. In addition to a standards-based service layer, CSPs must also embrace service-oriented architecture (SOA) concepts. With an open, standards-based platform, partners can combine their own content and applications with the CSP's specific underlying network capabilities that users can request, configure, and interact with on demand. In addition, partners can create and quickly take to market well-defined, SOA-based services – because the services already incorporate key business and technical requirements such as charging, policy execution, and device management.

The Reality

CSPs worldwide are beginning to leverage SDPs to pragmatically introduce IMS-

based services and generate new revenue to enhance their competitiveness with the internet giants. For example, mobilkom austria group (mag), a leading mobile service provider in Central and Eastern Europe, has taken a pragmatic approach, deploying a services layer to quickly bring innovative and uniquely differentiating IMS services to market by leveraging the agility and innovation of external developer communities. One new mobilkom austria group IMS-based service already in production is “mag over IP,” which enables end users to send and receive VoIP calls on their PCs or laptops as though they were using their mobile phones. This service provides end-users with greater flexibility in the way they manage calls – while continuing to benefit from unified billing, as well as realizing new functionality such as IMS-based multi-ring that allows one phone number to ring all of a user’s devices.

BT, a leading CSP widely recognized as an industry innovator, is also pursuing an SDP-based services layer approach. To maximize the value of its 21st Century Network (21CN), a software-driven customer network that delivers next-generation services faster, BT is implementing its Innovation Platform to provide a single service development and deployment environment for both internal groups and external partners. The company is recruiting independent application developers by using a well-defined, standards-based approach that allows developers to access core carrier-grade capabilities such as billing and provisioning. By instituting a common design process built on reusable service components, BT can deploy network-agnostic applications that cross domains and are not limited or affected by ongoing network transformations.

There is no doubt that today CSPs face a fierce, expanding competitive landscape that is driving new, diverse revenue models and a rapid pace of innovation. However, if they take a pragmatic approach to IMS, CSPs can benefit from more agile, cost-effective infrastructures that can easily evolve with next-generation network architectures, and they can take advantage of their deep customer relationships while creating new revenue streams and partner value chains that support them into the future.

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