Paths to Convergence –
a steady Challenge

DAVE HILLS AND LAURENT MOUREU **As services are evolving, users are increasingly faced with a multitude of devices, subscriptions, numbers and passwords. They are crying out for simplicity. User centric services help deliver a sophisticated array of services in a way that users understand and find easy to use.**

At the same time Service Providers want to launch new user centric services to compensate for declines in traditional voice businesses including enhanced communications (VoIP, messaging, presence and video calling), entertainment/infotainment (Games, Music and Video) and productivity services (Managed Communications Services, ICT, Personalisation and Security)

Key Competitors and their Threats

Service Providers in most markets are facing increased competition, with competitors trying to get a piece of the traditional voice market as well as gaining a foothold in these new services. Service Providers find themselves facing four key competitors:

- Mobile only competitors aiming to fully substitute fixed voice services
- VoIP players with single service propositions based on cheap voice calls
- Triple play competitors offering compelling bundles of entertainment and communications to consumers
- Internet Service Providers/CLECs and Mobile Service Providers getting together to offer converged fixed and mobile services

The key actions Service Providers can take to deal with these threats are:

- Integrate fixed and mobile services to differentiate from single service competitors (VoIP only and Mobile only competitors)
- Enrich existing services to make them more compelling (VoIP, messaging, presence, video calling) and prevent users going mobile only or moving to triple play providers
- Push bundles to reduce churn and increase ARPU (multi-product discounts, service integration) making service delivery personalised with a common look and feel
- Deliver managed services which include CPE and remote management services to increase stickiness and top line revenue

Service Providers with both fixed and mobile assets are best positioned to move towards a Full Service Provider model, as opposed to a rich wholesaler or utility model, which will give them significant competitive advantages.

What users wish

Users have multiple ways to communicate and take for granted an ever-expanding variety of services which are increasingly inaccessible to the average user burdened with a confusion of devices, subscriptions, numbers, authentications and bills. Users demand simplicity: services that can be personalized and offer the flexibility to do what they want, when they want, wherever they want, on whatever device they choose. When users opt to take fixed, mobile and Internet services from the same service provider, they increasingly expect this service provider to treat them as a single customer.

In research and focus group discussions conducted by Alcatel, the desire for new services to respond to these demands is equally strong in both the consumer and enterprise worlds. Consumers want new services delivered in simpler, more flexible and more personal ways. Enterprise users – staff and customers – want less complex, less fragmented communications experiences, and enterprise (Chief Information Officers) CIOs want to reduce the cost of that complexity on their bottom line.

Application Service Providers (ASPs), portals, Mutli-Service Operators (MSOs) and others are offering bundles of services that simplify interactions across services. Now, the idea of fixed/mobile convergence is re-gaining momentum, promising even more to those who see it offering the ultimate communications services bundle.

Future Service Provider Strategies

Service providers in highly competitive markets will probably want to implement a full suite of convergence solutions to have a high impact in dealing with competitive threats, they will likely want to do something big and something fast; other service providers are likely to be facing threats which have not created such urgency, yet are in real danger and must address it with a discrete service proposition, that also enables reducing time to market and OPEX costs. The two main service-provider approaches to convergence are shown in figure 1.

Service providers taking the direct approach will likely implement many of the services shown in figure 2. These service providers are likely to have an accelerated service roadmap and may actually collapse the roadmap and implement all iterations at the same time.

For service providers who want to follow a more incremental approach to new service introduction, we recommend the following approach based around services (These services will ultimately lead to changes in the network that will be specific to services but will seed NGN/IMS

components into the network and prepare for the long term strategic direction of most service providers).

Commercial bundles: Deal with discrete threats and test market for future services

Enhancements: Prepare for integration by enhancing wireline services and personalising the home environment

Integrate: Gain true, long-term differentiation at a discrete service level

Full service provider: When a critical mass of discrete services have been launched, a service provider reaches a point where it makes sense to implement full network and service convergence (rather than discrete increments).

Today's service solutions allow discrete components to form key functions of an NGN/IMS network transformation, so as a service provider decides to go for a more complete network transformation. These components can be leveraged as the foundation of this transformation.

NGN and IMS as a Key Underlying Technology

IP Multimedia Subsystems (IMS), the supporting standards-driven architecture, is the critical enabler as the worlds of fixed and mobile converge and service providers move to a user centric broadband world.

IMS is the network architecture for advanced IP-multimedia services, such as real time video sharing, content sharing, push to talk, and various interactive applications including gaming. IMS paves way for the introduction of carrier-class Voice over IP (VoIP) services, a key enabler in the convergence of fixed and mobile domains. It also provides the connectivity that enables SIP-capable terminals and devices to establish IP sessions between each other, over any IP connection, such as GPRS, 3G WCDMA, DSL broadband home connections or WLAN hotspots.

Alcatel has developed an IMS compliant, converged end-user service delivery framework, allowing a service provider to rapidly acquire the necessary service development and delivery capabilities. This framework consists of three critical building blocks (fig. 3):

Open Service Delivery Environment is at the heart of the converged end-user service delivery model, as it secures a profitable and sustainable position for the service provider. It contains all of the capabilities, including payment, presence and user profile management, required to

1 Direct Approach for Service Providers under extreme pressure needing dramatic impact from convergence
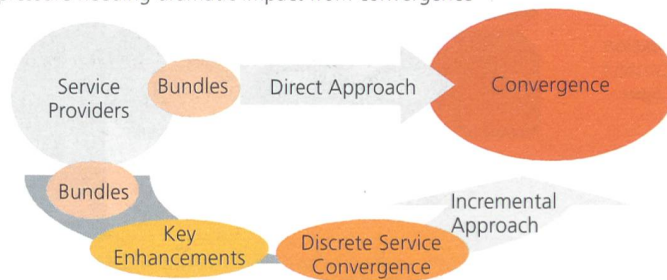
2 Incremental Approach for Service Providers under less pressure needing to deal with discrete competitive threats

Fig. 1. Two main approaches taken by customers.

quickly develop and efficiently run new services, irrespective of the access medium or device. Moreover, it provides an open, scalable and secure interface to internally and externally developed applications or services. In addition the Open Service Delivery Environment interfaces with the existing OSS/BSS environment to complete the full service delivery process.

IMS Control Layer consists of an IMS solution architecture based on 3GPP/TiSPAN definition, extended to address fixed and mobile networks. The main objective of this SIP-environment is to ensure that services to an end-user can exploit the personal profile settings from the home network, irrespective of the selected access network (which can be a third party network). By doing so, the value from these services will always be tied to the service provider in the home network. Another objective of the SIP layer is to provide a single standard interface between the Open Service Delivery Environment and all of the access networks. The Alcatel approach allows for the roll out of new end-user centric services in a SIP-based environment while safeguarding and complementing the existing service offerings and feature sets.

PSTN/PLMN Interworking: A crucial part in this architecture is the ability of SIP endpoints to interwork with legacy networks and their endpoints based on H.323 and MGCP

Commercial Bundles	Enhance Services	Integrate Services	Full Service Provider

– one bill: mobile + home phone
– combined call minute bucket
– one contact center
– service bundles
  – fixed
  – mobile
  – broadband
  – TV
– m-commerce for fixed services
– fixed bill for mobile services
	– VoIP: presence, messaging, video communication, mobility
	– menu driven IP phones
	– LDAP integration
	– unified messaging
	– voice & data VPNs
	– personalisation: ring tones, ring back tones, single voice mail, location based services
	– e-wallet includes converged billing, micro payments
		– interconnect / interoperate messaging systems (IM/SMS/MMS)
		– interconnect video communications
		– interconnect presence across fixed and mobile
		– common preferences
		– single sign on
		– single address book
		– hybrid phone services
		– integrate other services (e.g entertainment) across fixed and mobile
			– fully integrated communications services: any network, any device, any service
			– fully integrated entertainment services: any network, any device, any service

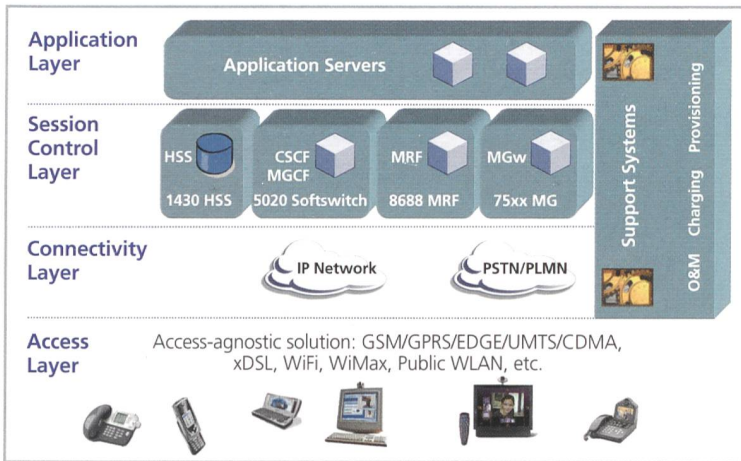Fig. 2. Incremental Service Roadmap to Convergence.

Fig. 3. IMS end to end Architecture Overview.

for the IP installed base and the H.248 endpoints for the TDM installed base. This allows for a smooth migration to the target SIP architecture, for all parties.

Service Provider benefits

NGN and IMS solutions use common components that can be used to deliver discrete services and as necessary form building blocks in the evolution to a full IMS network. Applying a converged end-user service delivery framework which is IMS compliant allows the service provider to secure the most attractive position in the value chain, because:

– It reduces new feature time-to-market, by offering a flexible platform for service implementation. While it used to take 18 months to enable a new service, this can be now achieved much faster, within weeks.
– It allows the service provider to be positioned as a service aggregator as well as a service provider. Delivering service and application capabilities and components rather than mere bandwith and connectivity affords the service provides a higher position in the value chain.
– It allows the service provider to complement its own access portfolio through wholesale agreements providing "access-agnostic" value proposition to the end-users.
– It allows the service provider to "own" the end-user through his profile.
– Instead of making redundant investments in separate service/application delivery systems, it implements generic components that can be reused over several services to build economies of scale.
– It offers new revenue opportunities from third-party service providers looking to leverage the service provider's service creation capabilities: authentication, real-time charging or content hosting to a partner for which this is a core business.
– It significantly decreases the operational expenses of introducing, running and maintaining services. The industry is currently, estimating a possible savings of 20 to 40% with even greater impact of around 70% in dedicated cases (source: public articles).

Other benefits for service providers include service bundling (reduces churn and increases ARPU), cross selling (adds to bundles and increases revenue) and enriched services (reduces churn, increases ARPU and margins).

Service Bundling across Fixed and Mobile Service

– Commercial bundles offer combinations of fixed and mobile services (e. g. single bill, single payment, single contact centre, combined call minute buckets).
– Service Integration offer expanded communities (e.g. IM to SMS) and ease of use (common look and feel).
– Personalisation makes services easier to bundle (all have same look and feel) and more compelling than multiple relationships with single service providers.

Cross Selling

– With single integrated customer contact centres for both fixed, mobile and Internet users can be cross sold additional services from either fixed or mobile as they deal with their service provider.

Enriched Services

– Personalisation increases usage through easier access and convenience
– Integrated messaging, interoperable across networks and protocols, single voice mail and unified messaging across fixed and mobile
– Entertainment integration across fixed and mobile enabling clips, trailers and adds to be sent to mobiles, which have direct relation to high quality movies and other content available through fixed broadband network
– Taking successful service elements from one domain (fixed or mobile) and adding them to the other (leverages sunk costs)
– Enhances services and makes them easier to use, for example: single voice mail, unified message box or Intelligent Mobile Redirect.

Conclusion

Combined fixed and mobile service providers should be able to offer significantly more services in a more integrated fashion than providers without both network assets. It will be critical that combined service providers leverage network functionality (QoS control, bandwidth, interoperability, reliability, mobility, security, single number, single voice mail, converged mail box, billing & payment) to best effect in order to protect themselves from non-infrastructure ASPs and mobile only service providers. Using the combined approach also gives the service providers control over the services offered to customers. By leveraging this control through their retail channels they can protect traditional services while launching new services.

Ultimately, the customers will get more services, faster as well as cheaper, while the full converged operators can keep theirs costs under control. ∎

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