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Comverse SAMbox: Uncovering the IP Communications Potential for Mobile Operators

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1. Executive summary

Mobile operators in many developed markets are finding that their revenues from traditional communications services are coming under sustained pressure from the onslaught of "free" alternatives from over-the-top IP-based messaging and voice providers (OTTs). KPN Mobile, Vodafone, Deutsche Telekom and, most recently, China Mobile have all indicated that their voice and messaging revenues are either already in decline or potentially at risk from their subscribers' adoption of OTT services.

Some operators are taking steps to address the problem, implementing strategies such as blocking or disrupting services (especially mobile voice-over-IP), restructuring their price plans to encourage subscribers to stay on their networks or partnering with OTTs in order to benefit from brand awareness and increased data use. Other operators have opted to embrace the OTTs' use of their data networks, rather than oppose it. Informa has identified a fifth strategy that mobile operators are pursuing: the emulation of OTT services, that is, developing their own OTT-like services.

With the exception of Rogers Wireless' Rogers One Number, the operators that have so far elected to emulate OTT providers have primarily done so using an applications-based approach, as opposed to providing a network-based service. Mobile operators that have launched OTT-like applications include T-Mobile USA (Bobsled), AT&T (AT&T Messages) and Telefonica (Tu Me).

Another option for mobile operators seeking to emulate OTT providers is to develop and offer services based on the GSM Association's Rich Communications Suite (RCS) standards: RCS-enhanced (RCSe) or RCS Version 5.0. Given the delay in bringing RCS-based services to market, a hybrid approach is also valid, that is, mobile operators can develop and offer their own-brand OTT-like service as an interim step towards their eventual development and launch of RCS-based services, with the own-brand service acting as an interim offering before the eventual launch of an RCS-based service.

In developing their own OTT-like services, whether RCS-based or not, mobile operators can take advantage of a number of unique differentiators that OTTs do not have. For example, mobile operators can re-use various elements of their network infrastructure in order to be able to provide a new, converged communications service that enables mobile subscribers to access their SMS, MMS, voicemail and video-mail via a single user interface, and which enables synchronization across multiple devices and operating systems. They can also use their own infrastructure to provide network-based services, such as network address

books and storage, which would help to encourage subscriber stickiness. Mobile operators can also better ensure quality of service and reliability, since they control the various network elements that underpin service delivery.

Comverse has developed a platform, IP Service Enablement Middleware (IP SEM), with which it aims to assist mobile operators to develop their own OTT-like services while also building on the various advantages that operators enjoy over OTTs.

The IP SEM platform is aimed at enabling a number of third-party applications, including Comverse's own SAMbox, which provides a user interface for the PC, as well as mobile and tablet devices. SAMbox would be deployed in conjunction with IP SEM, and would enable subscribers to access whichever traditional messaging services the operator would provide as part of a converged communications offering.

Key features of SAMbox include the ability for subscribers to synchronize their communications and contacts, threaded views of conversations, the integration of Facebook and Gmail communications, and network-based storage.

Comverse's IP SEM and SAMbox are also compliant with the GSMA's RCS standards. This means that mobile operators that deploy IP SEM will be able to use the platform to smooth the evolution of their traditional voice and messaging services towards first IP-based communications, and then RCS-based services.

IP SEM's Social Networking Gateway can enable interworking between the operators' existing services, such as SMS, and Internet-based services, such as Facebook Chat. In doing so, IP SEM can help mobile operators blur the lines for their subscribers between the operator's role as a provider of traditional voice and messaging services, and its emerging role as a provider of Internet-based services. This would help to kickstart the process of mobile subscribers viewing their mobile operator as a provider of IP-based communications services.

In addition, IP SEM can help mobile operators extend the capabilities of their RCS platforms through its RESTful API, which would enable operators to offer products developed by third parties; these products would in turn use the operators' services.

Comverse has identified a number of potential revenue-generating opportunities for mobile operators that launch services based on IP SEM, including SAMbox. These include the securing of traditional communications revenues, new

revenues from increased messaging and increased data use, and additional potential revenue from advertising and premium services. IP SEM has already been deployed at Canadian mobile operator Rogers Wireless, alongside Comverse's IP-SM Gateway (IP-SM-GW), which bridges the IP and 3G messaging domains. IP SEM and IP-SM-GW are key components of the Comverse VAS 3.0 platform.

In February 2012, Rogers Wireless launched the Rogers One Number service, its first converged communications service to be offered over its IMS platform and LTE network. The Rogers One Number service is available to postpaid subscribers only, and is essentially delivered over multiple Comverse platforms, including its SMSC, voicemail platform, IP-SM gateway and IP SEM. The service is believed to have about 200,000 subscribers.

2. Market overview

2.1 The OTT challenge
Over-the-top IP voice and messaging providers (OTTs) have significantly changed the dynamics of the mobile services market.

The growing penetration of smartphones and mobile broadband, combined with the availability of open application programming interfaces (APIs) for handsets have created an environment in which third-party application and service providers can more easily develop and distribute mobile applications, including mobile voice-over-IP (mVoIP) and IP-based messaging applications.

Consequently, the mobile services market is starting to resemble the Internet services market, in that the provision of an application or service is no longer completely reliant on its being available on, or tied to, a mobile operator's network. As such, mobile operators risk being relegated to being a provider of network access only to their subscribers, who are increasingly able to download and use third-party applications and services.

Those third-party applications and services from OTTs that enable subscribers to make voice calls and send and receive messages for "free" pose a very real threat to mobile operators' voice and messaging revenues. While subscribers do need to purchase a smartphone and/or a mobile data plan, or have access to Wi-Fi, in order to be able to use the OTT-provided mVoIP and IP-based messaging applications, data from several operators indicates that this change in consumers' communications behavior is having a negative impact on their revenues from traditional voice and messaging services – the so-called "KPN effect".

In May 2011, KPN became the first mobile operator to indicate that its subscribers' use of "free" OTT-provided voice and messaging applications – and in particular WhatsApp – had caused a decline in its voice and messaging traffic and revenues. Initially the effect was confined to KPN's "Hi" brand, with the operator finding that 85% of its Hi subscribers were using WhatsApp, resulting in a year-on-year decline of 24% in outgoing SMS traffic by 3Q11. However, the effect quickly spread to the operator's mainstream brand, KPN, with outgoing SMS per customer declining 5% year-on-year by 3Q11.

Despite KPN's attempts to stem its declining SMS traffic and revenues through the introduction of integrated tariffs – which include a mixture of voice minutes, SMS and mobile data – the year-on-year decline in SMS traffic among KPN's overall consumer mobile customer base has accelerated from 19.6% in 3Q11 to 32.7% by 2Q12 (see fig. 1).

Fig. 1: KPN Mobile, Netherlands, SMS per subscriber, 1Q10-2Q12
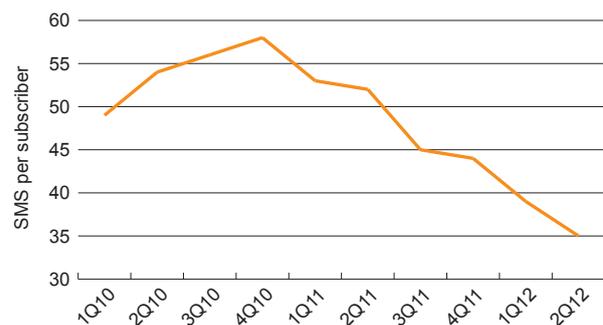
Source: KPN

KPN is not the only mobile operator to have experienced a dramatic decline in its SMS traffic and revenues as a result of its subscribers preferring to use "free" alternatives from OTTs. Vodafone Group's recent 1Q13 financial results paint a fairly grim picture with regards to the decline in messaging revenues across most of its operating divisions (see figs. 2, 3).

Meanwhile China Mobile stated in its 1H12 financial report that competition in the Chinese mobile services market is intensifying, and that its revenues from traditional voice and messaging services are under pressure from both mobile operator rivals and "new technologies and services that are replacing traditional communications services". China Mobile's SMS and MMS revenues declined 2.6% year-on-year (see fig. 4), although the operator is still the largest in the world in terms of SMS traffic, with its 624 million subscribers sending a total of 736 billion SMS in 2011, according to Informa Telecoms & Media's World Cellular Data Metrics.

Fig. 2: Vodafone Group, messaging revenues by division, 1Q12 and 1Q13
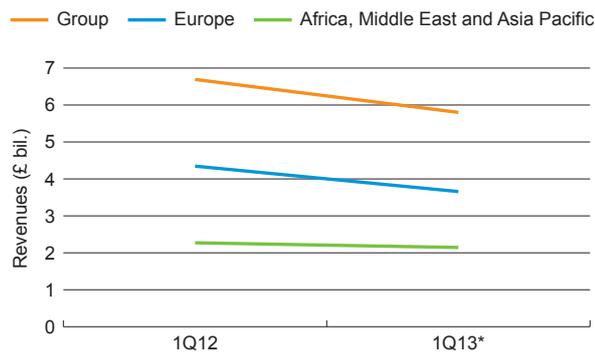
Notes: £1 = US$1.62 *Ends June 30, 2012
Source: Vodafone

Fig. 3: Vodafone Group, messaging revenues by country, 1Q12 and 1Q13
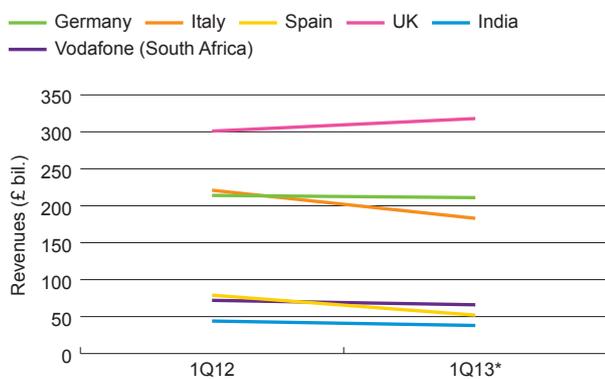
Notes: £1 = US$1.62 *Ends June 30, 2012
Source: Vodafone

Fig. 4: China Mobile, wireless data services revenues, 1H11 and 1H12
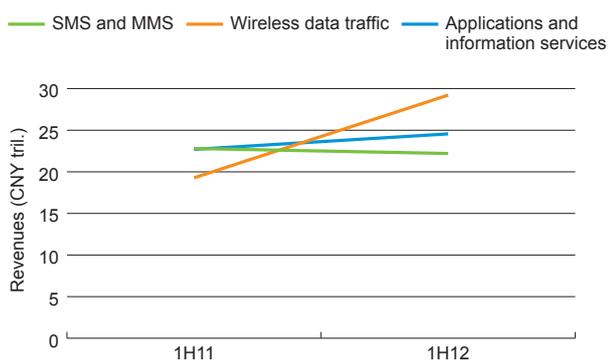
Notes: CNY1 = US$0.15
Source: China Mobile

Key OTT providers include start-ups WhatsApp, KakaoTalk, Viber Media and Line, and handset vendors RIM (BlackBerry Messenger) and Apple (iMessage), and South Africa's MXit (see fig. 5).

Fig. 5: Key over the top mobile VoIP and IP-based messaging providers

OTT provider	Service	No. users	Messaging traffic	Voice traffic
Apple	iMessage	140 million (June 2012)	150 billion messages since launch in October 2011; 1 billion messages a day (June 2012)	n/a
KakaoTalk	KakaoTalk	45.2 million registered: 36 million local, 9.2 million international (June 2012)	1.2 billion messages a day (February 2012)	n/a
Line	Line	40 million registered: 22 million international, 18 million local (June 2012)	Not disclosed	Not disclosed
Mxit	Mxit	12.5 million (February 2012)	750 million messages a day (February 2012)	n/a
Research in Motion	BlackBerry	55 million (May 2012)	100 billion messages a month (May 2011)	n/a
Viber Media	Viber	100 million registered users (September 2012)	Six billion messages a month	Two billion minutes a month
WhatsApp	WhatsApp	Not disclosed	Ten billion messages a day (peak traffic, August 2012)	n/a

Source: Informa Telecoms & Media

2.2 The opportunity for mobile operators: their unique advantages over OTTs

Mobile operators have a number of differentiators that they can use to their advantage against over-the-top service providers (OTTs). These include their ability to use existing network assets as the basis for a service that provides a single interface into multiple communications channels, including voice, voicemail, SMS and MMS. Mobile operators' network assets include their SMS and MMS delivery platforms and voicemail systems and, for those operators that have already deployed one, their network address book.

Quality of service is a key differentiator for the mobile operators; their ownership of the network assets means that they can control the delivery of a unified communications service, and the quality of that service, more effectively than an OTT. This potentially means that such a service would be more reliable, and that the operator's subscribers would have full confidence in the service's availability and in its ability to deliver or receive a message, or to make a call.

Mobile operators are also in a better position to be able to offer service continuity across the multiple screens and device operating systems by which their customers might access the service. This means that a customer of the service would be able to switch from using the service on their mobile phone while out of the office, to their laptop or PC when in the office, and for all of their communications to be continually synchronized so that the subscriber's experience of the service is identical on all of the devices on which they choose to access the service.

The integration of a unified communications service with social networking and media services could also be a potent differentiator for mobile operators against competitive third-party services, such as those provided by OTTs, or against those mobile operators that are seeking to launch services based on the GSM Association's Joyn, which is based on the RCSe standards. Neither of the services provided by OTTs nor Joyn yet enable integration with social networking and media services.

In addition, mobile operators are in a prime position to provide network-based storage and back-up as a value-added service for their subscribers, who would be able to store and backup all of their communications content, including contacts, threaded conversations and multimedia files (images, video, audio).

Perhaps the most important differentiator that a mobile operator can exercise is its ability to charge its subscribers for a service, either through a monthly subscription or per-event. Alternatively, the operator could generate revenue indirectly through bundling or by using a service to improve a key performance indicator, such as churn.

3. Introduction to SAMbox

3.1 IP Service Enablement Middleware – a prerequisite for SAMbox

Comverse's IP Service Enablement Middleware is a platform that has been developed to help mobile operators make the most of the key advantages that they have over the OTTs, while at the same time building on the prior knowledge and user experience that mobile subscribers have with the types of services provided by OTTs.

With IP SEM, Comverse aims to help mobile operators to provide unified communications services using their existing network assets. IP SEM connects to mobile operators' delivery engines, including the SMSC, MMSC, voicemail system and IP messaging platform, and to the mobile operators' network enablers and gateways, including the home location register, network address

book, social networking gateway, billing systems and user authentication platforms.

Comverse IP SEM also exposes a set of application programming interfaces (APIs) based on the Open Mobile Alliance's (OMA's) Representational State Transfer (REST), which mobile operators and developers can use to quickly develop, trial and launch new applications and services. These APIs connect with mobile operators' delivery engines, enablers and gateways, and with applications and presentation layers.

In addition, Comverse is offering a set of ready-to use applications alongside IP SEM. These include a converged messaging and social inbox (commercialized as SAMbox), secured messaging and parental control, safe drive service, HTML 5.0 browser-based visual voicemail and Facebook applications (visual voicemail, converged messaging).

3.1.2 IP-SM Gateway

Alongside IP SEM, Comverse's IP-SM Gateway (IP-SM-GW) is a core module within Comverse's IP Messaging platform. The IP-SM-GW focuses on enabling SMS and MMS interoperability and continuity for mobile operators as they complete the lengthy transition from their legacy (3G) networks towards their next-generation IP-based LTE/IMS networks. In addition, IP-SM-GW will allow mobile operators to provide their subscribers with other types of interworking IP-based messaging services, such as session-based instant-messaging, group chat, and third-party e-mail and instant-messaging services.

3.2 SAMbox

SAMbox is a single user interface that allows mobile subscribers to view and access all of their communications, including traditional voice and messaging services, as well as social networking and media services.

Within the SAMbox user interface, subscribers can create their own profile, which allows them to set and share their status, photo and personal message statement.

SAMbox will also enable mobile operators to offer their customers a way to aggregate and synchronize contacts and communications across multiple screen types and device operating systems, using either the SAMbox Social Address Book or the mobile operator's existing network address book. The SAMbox social address book also includes presence information.

The SAMbox social address book also helps make possible the threaded inbox, in which all communications from each contact are grouped into a single thread.

For example, a SAMbox user would be able to see a conversation with a contact that would include voice calls and voicemail, SMS and MMS, and interactions via Facebook and Google Talk. The threaded inbox view would be synchronized between the user's mobile device, laptop or PC and/or tablet.

SAMbox users would also be able to view their conversations with contacts in a timeline-like fashion, and they would be able to conduct one-to-one and one-to-many conversations.

The IP SEM platform enables network-based storage and back-up for SAMbox services using the Apache Hadoop database (HBase), an open-source distributed database which also used by Amazon, eBay, Facebook, Google, Twitter and Yahoo. As a result, any multimedia files shared between the SAMbox subscriber and their contacts during their conversations – picture, audio or video files – can be stored online by the mobile operator.

Mobile operators will be able to create flexible pricing structures for IP SEM services, depending on the range of services they offer, and also on the competitive dynamic within their own particular market. For example, a mobile operator may choose to offer a SAMbox service based on tiered pricing, where the first 500MB of mailbox storage may be free, after which the operator may impose a sliding scale of monthly fees which would be dependent on the storage capacity required by the subscriber.

SAMbox provides four types of interface: Web, PC, mobile and tablet. All of the interfaces include the same basic set of features: inbox, contacts, conversation message view, message initiation and response, and the ability to view images. Mobile operators will be able to customize the interfaces with their own brands. Comverse also plans to provide an IPTV interface.

3.3 SAMbox Interface Components

3.3.1 Inbox

The SAMbox Web interface is a split-screen user experience that allows the subscriber to toggle between a Messages tab and a Contacts tab on the left-hand-side of the screen, and to have the various capabilities associated with either of these tabs to appear on the right-hand-side of the screen (see fig. 6).

Comverse also provides a compact experience for mobile and tablet screens. In the mobile and tablet interfaces, users of the SAMbox service would choose from one of three options: Contacts, Conversations and Folders (see figs. 7, 8).

Fig. 6: SAMbox My contacts and conversational messaging view on Web interface

Source: Comverse

Fig. 7: SAMbox mobile interface
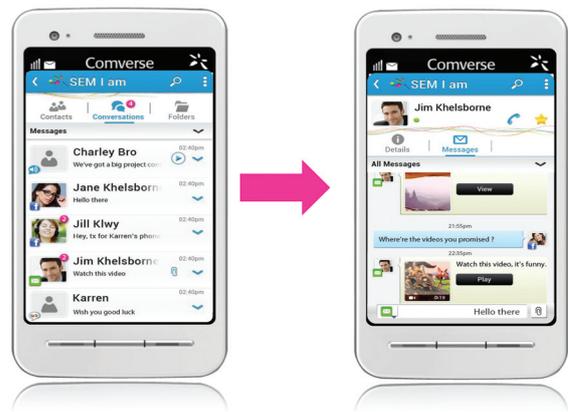
Source: Comverse

Fig. 8: SAMbox tablet interface
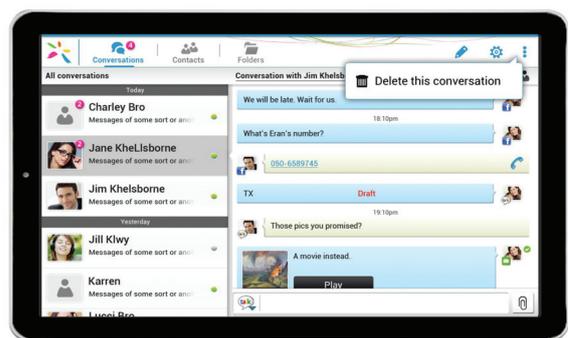
Source: Comverse

3.3.2. My Contacts

The My Contacts capability is a presence-enabled network address book. Selecting the Contacts tab will bring up a list of contacts, and a set of actions for communicating with contacts (see figs. 6, 7, 8 and 9). The subscriber can choose a contact and then view the ways in which they can communicate with that contact. The presence of a contact on a particular service, such as Facebook or Gmail, is

indicated by a green dot next to the icons for these services in the contact's entry in the address book.

Subscribers can use the My Contacts screen to add contacts, to manage their contacts by sorting them into folders, and to search for a contact.

In the mobile and tablet view, the user would see a list of contacts and their photos, their most recent communication with the contact, the time at which the communication was received, whether the communication had an attachment, how many communications from the contact have been received, and also the type of communication (for example, SMS, voicemail, Facebook, Gtalk).

3.3.3 Conversational Message View
The Messages tab opens up the threaded inbox view of the conversation between a selected contact and the subscriber, and shows the aggregation of communications, including SMS, MMS, voice calls and social networking (see fig. 6). It also shows, for each contact, all of the communications details associated with that contact, for example, the contact's Gmail e-mail address, Facebook ID or mobile phone number. In addition, in this view, subscribers can see if their contact has sent them an attachment to the message, and they can open and view the attached file.

Subscribers can also sort and manipulate messages in various ways. For example, subscribers can sort messages using the following filters: by contact, date, message type, attachment type or name, message source, sent/received or by contact. Message manipulations include delete, forward, reply, move to folder and archive. SAMbox has been designed in such a way that the message only needs to be handled once from any access point, meaning that there is no need to synchronize these actions.

3.3.4 Message initiation and response
Subscribers to the SAMbox service can initiate and respond to messages in multiple ways (see figs. 10, 11). In addition to initiating or responding to a message from the main inbox screen, users of SAMbox can initiate or respond to a message via the address book/contacts list, via the message itself or through an attached file, or by answering a presence-based chat invitation. Subscribers can also initiate or reply to messages using Gtalk and Facebook, and they can choose to initiate conversations based on being able to see the presence information of a particular contact.

3.3.5 Viewing images
Subscribers can also view multimedia files, including images and videos, from within their conversation with a contact.

Fig. 9: SAMbox My contacts view on mobile interface

Source: Comverse

Fig. 10: SAMbox message initiation and response on web interface
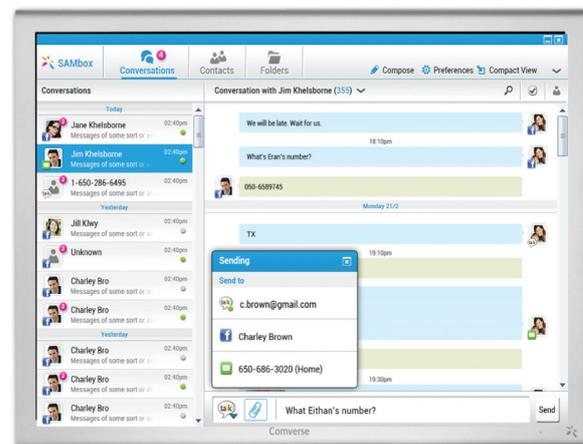
Source: Comverse

Fig. 11: SAMbox message composition on mobile interface

Source: Comverse

3.3.6 Personal settings
SAMbox also includes the ability for subscribers to use the Web-based interface to create and modify their

personal settings, to create and manage their folders, to create rules for receiving messages, and to set up notifications. Subscribers would also use this interface to enter their account information for Facebook and for GoogleTalk.

3.3.7 Registration and set-up on mobile and tablet

SAMbox will be available for devices running the iOS and Android operating systems. Subscribers will be able to download the mobile or tablet application for their device from the App Store, Google Play or from their mobile operator's app store or Web portal.

Once the application has been downloaded, subscribers will need to enter their MSISDN on the home screen of the application, after which they will receive a PIN via SMS. They will then need to enter the PIN, after which they will be required to create a password. Those subscribers wishing to connect their Facebook and GoogleTalk accounts to the service will also need to enter their access credentials for each of these services.

4. Using IP SEM to capture new revenue opportunities from IP-based communications

4.1 Business models

Mobile operators could pursue a number of different business models for IP SEM-enabled services, such as SAMbox. These include:

- Securing traditional communications revenues.
- New revenues from increased messaging.
- New revenues from increased data usage.
- Additional potential revenue from advertising.
- Additional potential revenue from premium services for the enterprise market.

4.1.1 Securing traditional communications revenues

Mobile operators could choose to offer an IP SEM-enabled service, such as SAMbox, as a way of encouraging their subscribers to remain on their networks, which would achieve two objectives – the reduction of churn, and the continuing use of the mobile operator's voice, messaging and data services.

In this scenario, operators could decide not to charge for the IP SEM-enabled service, but to include it as a value-added service in the bundle of services for which the subscribers would pay their usual monthly fee. By not charging for an IP SEM-enabled service, such as SAMbox, mobile operators would be able to emulate the business models of the various over-the-top providers but do so in such a way that they subsidize the cost of the service,

while at the same time encouraging their subscribers to adopt and use the service.

As a result, mobile operators would be able to use the SAMbox service to retain their subscribers and the revenues accruing from those subscribers, and also to retain a proportion of the revenues potentially lost from subscribers who may have otherwise switched to a competing mobile operator and/or to an OTT service.

4.1.2 New revenues from increased messaging

Depending on the way in which mobile operators configure their SAMbox service, operators could generate new revenues from their subscribers' increased use of messaging within the service.

In offering a SAMbox service for free, mobile operators are likely to see a higher use of the service for messaging. For those subscribers who are heavy users of SMS, it is likely that the ability for these subscribers to be able to send SMS from their PC, tablet device or IPTV would be a very attractive feature, for example, and would increase their messaging use. The increased use of messaging by the user of a SAMbox service would in turn stimulate a higher volume of incoming messaging traffic. A proportion of the incoming traffic would be between the users of a SAMbox service, and therefore would not be revenue-generating for the mobile operator. However, a proportion of the incoming traffic would be generated by subscribers who are not users of the SAMbox service, and would therefore be revenue-generating for the mobile operator.

4.1.3 New revenues from increased data usage

Similarly, mobile operators could generate new revenues from the increased use of mobile data associated with their subscribers' use of SAMbox features such as instant messaging, file sharing, interaction with their Facebook and Gmail accounts, and network-based storage and back-up.

Typically, those subscribers who wish to access the SAMbox service would require a voice-and-data plan, which would provide mobile operators with the opportunity to up-sell such plans to their existing subscribers. Mobile operators would also be able to use the service to attract new subscribers to their networks, which would also give the operator the opportunity to sell voice-and-data plans.

4.1.4 Additional potential revenue from advertising

Mobile operators could also generate revenues from their SAMbox service by selling advertising inventory,

which is a business model that a number of OTT service providers are pursuing. However, those mobile operators that are already offering mobile advertising as a separate capability on their networks would have a significant advantage over the OTTs, in that they can offer the SAMbox service as additional inventory to their existing advertising clients. They may also be able to offer their clients package deals on advertising inventory, in order to encourage brands to place ads on the new service.

4.1.5 Additional premium revenue from premium services for the enterprise market
Premium services are another area of potential new revenue for mobile operators. A mobile operator could choose to provide its subscribers with a basic set of IP SEM-enabled or SAMbox service for free, and to charge a premium for any additional, value-added services. For example, an operator could provide a basic level of network storage and back-up for free, but charge a fee based on a sliding scale for any extra storage that the subscriber may require.

5. Rogers One Number: An example of an operator IP-based communications service, using IP SEM

Rogers One Number is Rogers Wireless' first converged communications service to be offered over its IMS platform and LTE network. Launched in February 2012, Rogers One Number is available to postpaid subscribers only.

Rogers One Number is a free, multimodal service that enables Rogers Wireless subscribers to use their mobile phone number as their single identity for accessing a range of services via a Web portal on a PC or Mac. In short, Rogers One Number could be regarded as Rogers Wireless' attempt to create an IP-based communications service which resembles Skype or Google Voice.

Please see the companion case study: *Rogers Wireless' Rogers One Number converged-communications service.*

6. Launching services based on Comverse IP SEM

6.1 Prerequisites
Mobile operators that are seeking to deploy Comverse's SAMbox will also need to deploy Comverse's IP SEM. IP SEM is aimed at providing a bridge between a mobile operator's existing network assets – such as its SMSC, MMSC, voicemail, video-mail, location-based services, network address book, operational support systems and business support systems – and third-party applications

and services, including IP-based applications and services.

6.2 Recommendations
6.2.1 Service activation
Comverse recommends that mobile operators seeking to launch services based on IP SEM, such as SAMbox, operate on the basis of mass activation, with subscribers given the option to opt out, rather than opt in. This strategy would have the likely impact of ensuring the highest possible penetration of the service at launch, and would also make it easier for non-users to become users when or if they discover that their contacts are already using the service.

6.2.2 Pricing
Alongside mass activation, Comverse recommends that IP SEM-enabled services be priced on the "freemium" model, thus removing a potential barrier to entry, that is, that mobile subscribers are required to pay a monthly subscription in order to access the service. Many of the IP-based messaging and mobile voice-over-IP (mVoIP) services provided by OTTs are perceived to be "free" services by mobile subscribers; in order for mobile operators to remain competitive with these OTT services, they must also be prepared to offer their own services for free, or "perceived free".

Under the freemium model, mobile operators would provide a basic, SAMbox-enabled service for free, but mobile subscribers may be willing to pay for premium features.

6.2.3 Client distribution
Comverse recommends that, in order to ensure the widest-possible penetration of IP SEM-enabled services, such as SAMbox, mobile operators should embed or pre-load the relevant client wherever possible on smartphones and tablets, or offer the client as an application download when the mobile subscriber connects through a data dongle to their network. Applications should also be made available on Apple's App Store and Google Play.

7. Conclusions

7.1 The OTT risk: The operators' response so far
Informa has identified five key strategies that mobile operators are implementing in answer to the threat of OTT communications services. These strategies are:
- Do nothing
- Fight
- Neutralize
- Partner
- Emulate

Mobile operators are not necessarily implementing any of these strategies in isolation, but are applying a mix of them in order to minimize the effect of OTT.

There is a proportion of mobile operators which are doing nothing, that is, they are actively embracing OTT services as a means by which they can encourage their subscribers to purchase data plans. Such operators include Three, KDDI Japan and Verizon Wireless, all of which have partnered with Skype, for example.

On the other hand, a number of mobile operators are fighting the spread of OTT services by seeking to prevent their subscribers from using these services on their networks, using a combination of economic disincentives and technology platforms (such as deep packet inspection). The economic disincentives include blocking or disrupting mobile VoIP services for low-end or prepaid customers, requiring these customers to purchase an add-on and/or pay-monthly plan in order to be able to use the service. Vodafone UK has implemented this strategy. Other operators have resorted to regulatory intervention, for example, in June 2012, the South Korean mobile operators successfully persuaded the Korean Communications Commission to allow them to restrict access to KakaoTalk's mVoIP service on their networks.

The third approach that the mobile operators are taking is to restructure their price plans in order to make it more attractive for their subscribers to use the voice and messaging services on their network, as opposed to the "free" services provided by OTTs. Consequently operators are introducing tariffs that include very large voice and messaging bundles so that customers don't feel that they need to use OTT services in order to save money. Operators are also introducing integrated price plans, which include a mixture of voice minutes, SMS and mobile data, and which are also designed to protect the overall customer spend from the use of OTT services. KPN, TeliaSonera, Telenor and Vodafone are among those operators that have restructured their mobile plans in order to mitigate the impact of OTT services on their revenues from traditional communications services.

Fourth, some mobile operators have chosen to partner with one or more OTT players, and in so doing harness the popularity of the OTT brand to the operator's brand. In this way, the mobile operator would seek to retain its existing customers and attract new customers while making only a minimal investment in subscriber acquisition costs. In future, these operators would seek to increase both the range of services on offer and also the number of potentially billable events that OTT users generate. For example, Telefonica Colombia partnered with WhatsApp (see fig. 12) towards

Fig. 12: Telefonica Colombia and WhatsApp partnership

Source: Telefonica

the end of 2011 in an attempt to increase its non-SMS data growth, following a decline in its SMS traffic in the 12 months to end-June 2011. By partnering with WhatsApp, Telefonica sought to target its low-end prepaid customers with revenue-generating data plans, with a secondary aim being to encourage these customers to purchase smart-phones and more expensive, post-paid data plans.

The fifth and final strategy that some mobile operators have elected to pursue is to attempt to emulate the OTT providers, and to introduce their own OTT-like services. These operators recognize that, if they do not want to be sidelined by the OTT service providers, then they need to act like an OTT service provider and re-establish their services and brands on their customers' smartphone home screens. The US operators T-Mobile and AT&T, European mobile operator Telefonica O2 and Canada's Rogers Wireless are examples of mobile operators that have all, over the past 18 months, launched their own OTT-like service (see fig. 13).

Of the five strategies listed above, Informa believes that only the last two are future-proof. That is, the mobile operators' best chance of minimizing the impact of OTTs on their traditional messaging and voice revenues is either to develop their own OTT-like service, or partner with an OTT player (see fig. 14).

Assessing if any of the strategies – either carried out in isolation or in combination – are potentially customer-friendly and which ones are future-proof is the most important part of this analysis. Without a doubt, any action that prevents either all or some of the customers from using OTT services is fundamentally not a long-term strategy. However, many operators will try and use a combination of usage policy and pricing to prevent some of the OTT communication services from eroding revenues.

Neutralizing the effect of OTT services by increasing service-bundle sizes and introducing price tiers is an effective strategy, especially when carried out in

Fig. 13: Examples of mobile operators' OTT-like services

Telefonica

Rogers Wireless

AT&T

Sources: Telefonica, Rogers Wireless, AT&T Mobility

combination with network polices, but, in the long run, this strategy does not protect operators from overall price pressure. Quite simply, when the bulk of customers reduce the usage of their inclusive messages or voice minutes because they use OTT services, they will start demanding discounts on the overall price of the bundles they use and effectively introduce price pressure.

Informa believes that customers generally like Internet communication services and that operators need to be able to offer the same customer experience that is available via OTT communications. This is one of the main reasons why Informa believes that operators will need to be able to offer services that give the same rich user experience as OTT communications, whether this can be developed in-house, acquired or offered to the customers in partnership with OTT players.

Comverse's IP SEM platform and SAMbox service should assist those mobile operators that are seeking to emulate OTT services to develop and launch their own OTT-like service. Also, those mobile operators that are seeking to eventually develop and launch RCS services will be able to use the RCS-compliant IP SEM and SAMbox to do so.

7.2 How Comverse SAMbox over IP SEM can help mobile operators overcome the OTT challenge

7.2.1 Mobile operators can use their existing network assets and capabilities to offer their subscribers a new, converged communications experience.

Mobile operators that deploy Comverse's SAMbox over IP SEM can use the platform to integrate with their existing SMS, MMS, voicemail and video-mail infrastructure in order to offer a converged communications experience that is significantly richer in features than the services provided by OTTs. In particular, IP SEM provides an opportunity for those mobile operators that have deployed LTE/IMS to start generating a return on their investment in these networks.

In addition, because mobile operators control the network, they can also control the quality of the converged communications experience, to ensure maximum

Fig. 14: The five strategic options mapped against six critical criteria

🟦 High 🟩 Medium 🟧 Low

	Effectiveness	Consumer friendliness	Longevity	Safety		Is it future-proof?
				Competitive environment	Regulatory environment	
Do nothing	Low	High	Low	Low	High	👎
Fight	Low	Low	Low	Low	Low	👎👎
Neutralize	Medium	Medium	Low	High	High	👍👎
Partner	High	High	High	Medium	High	👍👍
Emulate	High	High	High	High	High	👍👍👍

Source: Informa Telecoms & Media

availability and reliable service delivery – elements over which OTTs have no control, and which can be a significant differentiator between mobile operator networks.

Operators are also in a better position to offer service continuity across multiple screens and device operating systems, which means they can enable new features such as call pull, where a subscriber can switch a call from their mobile phone to their PC.

7.2.2 Mobile operators can differentiate themselves from their traditional competitors and their new OTT rivals

The mobile IP communications market is still nascent which means significant opportunity remains for mobile operators to be the first movers in their respective markets in terms of providing an OTT-like service that will differentiate them from their competitors. In so doing, mobile operators can encourage their existing subscribers to remain on their networks, while influencing new subscribers to churn onto their networks. Subscriber churn onto the operator's network would occur not only because the service is different but also because it has network-based features that encourage stickiness. These features may even compare favorably against those provided by the OTTs, simply because the OTTs are not able to offer similar capabilities.

Mobile operators are also able to differentiate themselves from OTTs by virtue of their existing relationships with their subscribers, and the wealth of knowledge that they already have about them, which the operators can then use as part of a customer loyalty strategy that is again aimed at reducing churn.

SAMbox over IP SEM can also be white-labeled, which means that the mobile operator can offer the resulting service under its own brand.

7.2.3 Mobile operators can generate new messaging revenue from tablet and data users

Because IP SEM can be used to deliver services to multiple device types and operating systems, mobile operators can potentially use SAMbox (over IP SEM) to convert a tablet- or data-only user into a communications services subscriber. Consequently, the mobile operator could potentially generate revenues from a number of other services, including messaging and file storage.

7.2.4 Mobile operators can increase their presence in social networks

Mobile operators are well aware that social networks are a central meeting point for many of their customers. For example, Facebook stated in its most recent financial

results that it had 543 million mobile monthly active users (MAUs) at end-June 2012 – 102 million of these users only accessed Facebook via their mobile devices. To put that in context, Facebook's mobile MAUs at end-June 2012 comprised 8.7% of total global mobile subscribers, according to Informa. Consequently, a number of mobile operators are keen to take on a greater role in facilitating their subscribers' access to social networks such as Facebook. IP SEM is able to help operators achieve this objective by enabling integration with Facebook.

7.2.5 Mobile operators can deploy IP-based services using the IP SEM platform and SAMbox client both as an evolutionary step towards the provision of RCS-based services, and to extend the capabilities of their RCS platform

The GSMA regards RCS-based services as being the mobile operators' best chance of providing services that allow them to play a role in the IP-based communications market. However, mobile operator services based on the GSMA's RCS standards are taking longer than anticipated to come to market, owing to a combination of technological and business challenges.

Given that OTT providers are already having a significant negative impact on a number of operators' revenues from traditional communications services, mobile operators cannot afford to wait until the various challenges facing the launch of RCS-based services are resolved.

Comverse's IP SEM platform and SAMbox client are RCS-compliant, which means that mobile operators could initially deploy IP SEM and SAMbox in order to roll out their own OTT-like offerings, and start to encourage their subscribers to view the operators as more than just providers of traditional communications services. Once RCS gains sufficient market traction and penetration, mobile operators could then choose to convert or upgrade their services to their RCS platform.

However, even if the mobile operators choose to migrate their IP-based communications services to RCS, IP SEM could continue to deliver value to them by extending the capabilities of their RCS platforms. For example, IP SEM would enable interworking between the operators' traditional communications services, such as SMS, and Internet-based services, such as social networks. Also, the IP SEM RESTful API would more easily enable third-party developers to create services that would use the operators' communications infrastructure.

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