



# The future of the Rich Communication Suite

By:

*mobile* SQUARED

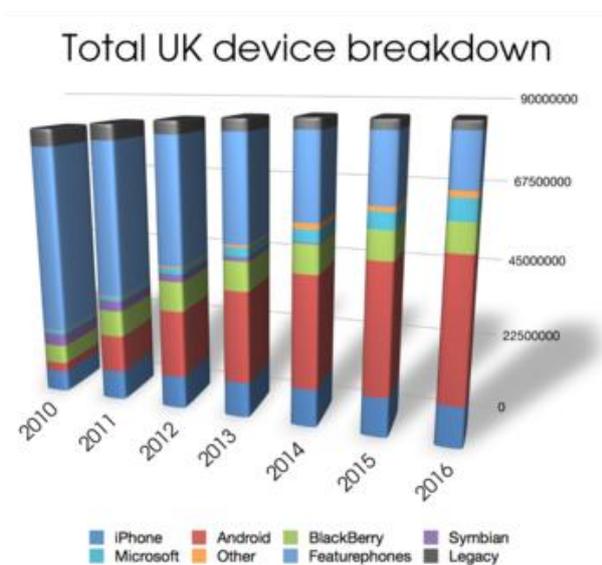


## Introduction

The growth in mobile messaging in all its guises – SMS, MMS, mobile email and mobile IM – is continuing to grow unabated, but the alarm bell rung earlier this year by Royal KPN in the Netherlands about the impact Over The Top (OTT) IM services on smartphones are having on traditional network-based traffic is now increasingly being heard elsewhere.

The rapid adoption of smartphones throughout the mobile user base has provided many benefits for the operator community - most notably around increased data usage and, therefore data revenues. The uptake in smartphones has enabled operators to migrate more users to monthly data plans and seen the length of those contracts increase from an average of 12 months to 18-24 months. In one move, operators have been able to increase the contract lifetime of their customers, while also increasing the revenue they generate from them.

At the end of 2010, for instance, there were approximately 19.67 million smartphones in the UK and 61.36 million featurephones or other devices. Every year, approximately 30 million handsets are sold in the UK, with approximately 80% of all contract users and 55% of all pay as you go users now upgrading to a smartphone.



Based on these current trends alone, mobile<sup>SQUARED</sup> forecasts smartphones will number 32.44 million by the end of this year in the UK – over 50% penetration of the entire population. Moreover, by 2015, smartphones will number 63.83 million – approximately 100% population penetration.

Despite the overall rise in smartphone penetration and data usage, however, text messaging still dominates mobile operator non-voice revenues worldwide.

According to Portio Research, mobile messaging service generated operator revenues of more than \$179 Billion in 2010. That figure is set to break through \$200 billion this year, \$300 billion in 2014, and on to \$335 billion by end-2015. Portio says messaging services still form the bulk of non-voice revenues for operators worldwide, with SMS and MMS combined contributing 55.9% of total mobile data revenues in North America, 51.4% in Europe, and a massive 63.1% in Asia Pacific.

Portio estimates that over 6.9 trillion SMS messages were sent worldwide in 2010 and expects that figure to top 8 trillion this year. However, beyond the massive emerging markets such as China and India where person-to-person (P2P) messaging is still growing strong, bulk marketing and application-to-person (A2P) messaging are fast catching up. For example, Juniper Research estimates that A2P messaging will actually overtake P2P by 2016 as a result of increased use of the mobile marketing channel by industries including financial services, advertising, marketing, business administration, ticketing and entertainment, etc.

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However, the rise of A2P messaging should not be viewed in isolation. Juniper also expects mobile IM users to exceed 1.3 billion by 2016, while mobile email users are expected to quadruple from around 481 million last year. These last two points are inextricably linked to the rise of the smartphone, and are one reason why, in April this year, KPN issued a profit warning as a result of lower-than-expected consumer wireless revenues.

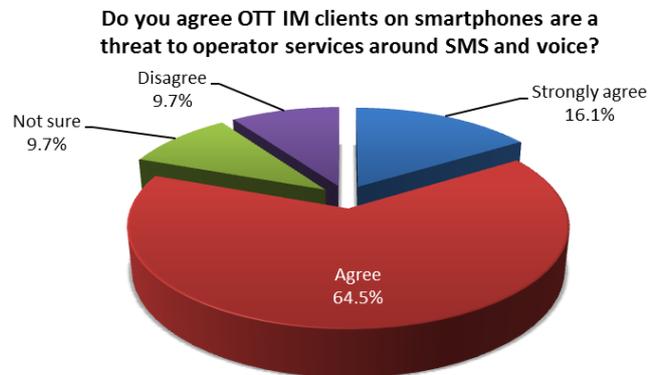
KPN said there had been a ‘rapid change in customer behaviour’, as well as increasing price pressure and rationalization in its business division. Specifically, KPN’s Chief Executive Officer Eelco Blok said increasing use of IM services like WhatsApp and BlackBerry Messenger had impacted its domestic operations – pointing to a 10% drop in the number of text messages sent in March 2011, compared to a 10% rise the previous year. As a result, KPN’s mobile service revenues in the Dutch market dropped 8.1% in the first quarter.

BlackBerry currently supports around 70 million users worldwide who send around 100 billion messages per month. As evidenced KPN, BBM is already having an impact on text messaging revenues in the Netherlands, so it is hardly surprising that operators should be concerned about the future of P2P SMS as smartphone adoption increases, and users spread their activities across BBM, iMessage, Google Talk, Facebook Messages, and other IM apps.

The re-emergence of interest in Rich Communications Suite (RCS) applications, as the industry moves towards an all-IP network architecture based on the adoption of LTE technology, theoretically provides operators with the means to combat OTT-creep head on – namely by offering an Enhanced Address Book for service discoverability; Rich Call for video and file sharing, and; Rich Messaging for instant messaging. Enhanced RCS (RCSe), the first commercial implementation of RCS, will offer these three applications all in real time, all preinstalled on devices, and all accessible through the Address Book application.

### OTT IM clients on smartphones are cannibalizing operator services now...

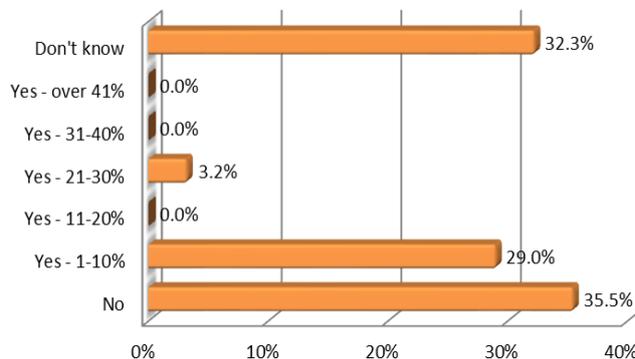
During October this year, mobile<sup>SQUARED</sup> surveyed 31 leading operators regarding the impact OTT IM clients on smartphones are having on operator services such as SMS and voice calling. Individual survey results are anonymous, but the respondents represent most of the major operator groups worldwide – including AT&T, Deutsche Telekom, Metro PCS, Orange, Orascom Telecom, QTel, Saudi Telecom Company, T-Mobile, Telecom Italia, Telefonica, Telekom Austria, TeliaSonera, Telstra, Turkcell, Singapore Telecom, Sprint Nextel, Verizon, Vodafone and Zain.



Source: Mavenir

A total of three-quarters of all operators surveyed thought that OTT IM clients on smartphones - such as Skype, iMessage, Google Talk, Facebook Messages, WhatsApp – do pose a threat to traditional operator-based services around SMS and voice. Specifically, 63% of respondents agreed with the statement, while a further 17% strongly agreed. Only 10% of survey respondents did not think OTT IM clients were a threat, while another 10% were not sure.

Have you seen traffic decline over the last 12 months... ?



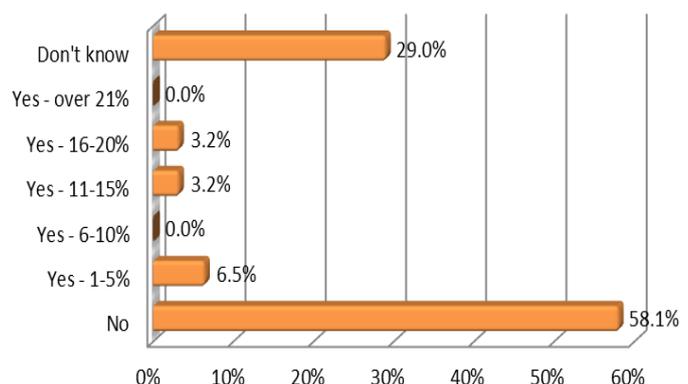
Source: Mavenir

More importantly, however, one third of all the operators surveyed by mobile<sup>SQUARED</sup> said they have actually seen operator-based network traffic decline in the last 12 months as a result of increased use of OTT clients and applications on smartphones, while almost 15% said they have also seen actual revenues decline as well.

A total of 29% of operators said they have seen operator traffic decline between 1-10% in the last 12 months, while 3.2% said it had fallen 21-30%. Another 32.3% said they did not know whether traffic had declined as a result of the use of OTT IM clients on smartphones, while 35.5% – the single largest group – said they had not seen any difference to date.

The impact of the decline in SMS traffic and, to a lesser degree, voice and video

Have you seen operator revenues decline over the past 12 months... ?



Source: Mavenir

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calling, is witnessed by the fact that 12.9% of operators surveyed have seen revenues decline over the last 12 months as a result of the increased use of OTT IM clients on smartphones. A total of 6.5% have seen revenues fall between 1-5%, while a further 3.2% have each seen drops of 11-15% and 16-20% respectively.

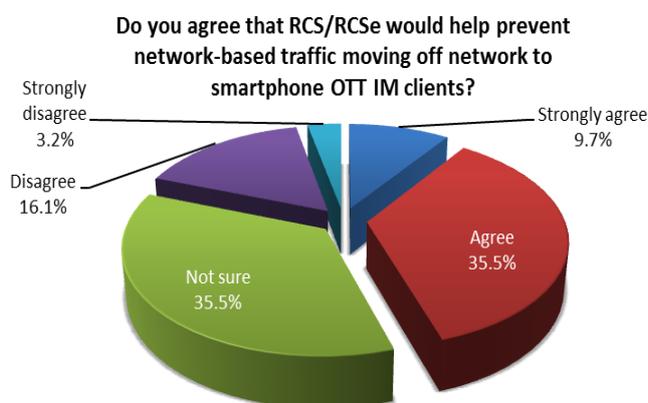
Survey respondents believe the emergence of OTT services mean that operators are now competing with a completely different business model to the traditional telco set-up – one based purely on IP. IM clients on smartphones may be cannibalizing SMS revenue streams, but OTT VoIP services are also seen as a major threat to the core voice business too. Of particular concern is the lucrative international and inter-carrier voice and SMS market.

Although revenue business models are changing, however, it doesn't mean that operators cannot also partake. The emergence of a Rich Communications Ecosystem (RCE) will enable mobile users to send IM, live video chat and exchange files across enabled devices on any mobile network. The key point here is that the traffic will continue to reside on the network and operators will not be reduced to the role of a dumb-pipe.

The momentum behind RCE is gaining ground as mobile operators begin to rollout LTE network technology and the IMS functionality which will enable RCSe. According to the Global mobile Suppliers Association (GSA), 248 operators have now committed to commercial LTE network deployments or are engaged in trials, technology testing or studies. The GSA says 35 LTE networks have already launched commercial services and it expects at least 100 more launches by end-2012.

Currently, five of the world's largest mobile operators – Deutsche Telekom, Orange, Telecom Italia, Telefonica and Vodafone – have publicly committed to deploy RCSe, with fully interoperable services expected to be launched in Spain, Germany, France and Italy later this year and 2012.

The GSM Association – the driving force behind RCSe – says the service is aimed at the billions of global mobile voice and text users. "Operators around the world have suffered from a commoditization of voice revenues, and RCSe is about 'de-commoditizing' those revenues by leveraging the investments made in the high speed data networks."



Source: Mavenir

Over 45% of survey respondents agreed that RCSe would help prevent network-based traffic moving off network to OTT IM clients on smartphones. Approximately 10% strongly agreed that RCS would help stem OTT-creep, while 35.5% agreed.

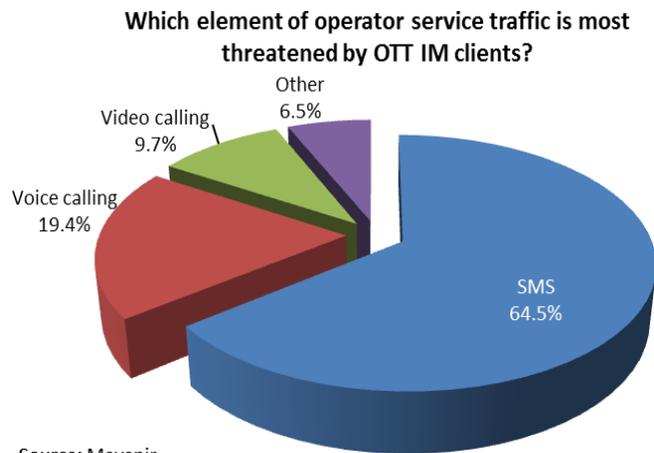
Another 35.5% of all respondents were not sure, while only 19% of operators surveyed disagreed.

The question now is whether RCSe will be too late to change the game? The fear is that a lack of operator co-operation will make it difficult to compete with entrenched OTT services, while the value of RCSe will be hard to communicate to customers. On the other hand, RCSe is designed to include the whole mobile universe, meaning billions of users can interact on the same platform within existing operator services.

**... and it will only get worse in the future**

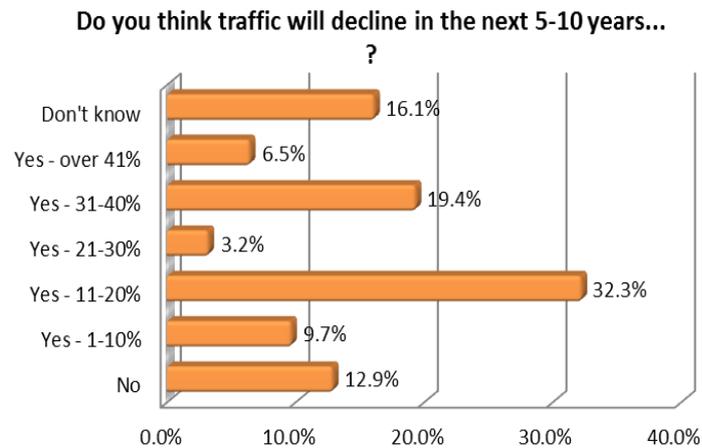
The SMS market is widely seen to be most at threat from OTT IM clients on smartphones, according to almost 65% of operators surveyed. Approximately 20% identified voice calling traffic as most at threat, with almost 10% choosing video calling traffic.

Operators that chose ‘Other’ said that messaging traffic in general was at threat – including an operators own IM attempts, while others said that text messaging was the obvious loser at the moment, but eventually OTT IM clients would also eat into voice services – particularly IDD and roaming traffic.



Source: Mavenir

Looking to the future, the situation is not expected to improve without changes to operator services and business models. mobile<sup>SQUARED</sup> asked if operator traffic will decline from current levels in the next 5-10 years as a result of increased use of OTT clients on smartphones, and a massive 70% of respondents agreed that it would.



Source: Mavenir

Almost 10% of respondents thought operator traffic (from messaging, voice and video calling) would decline between 1-10% from current levels over the next 5-10 years, while 32.3% (the single largest group) thought traffic would decline between 11-20%.

A further 20% expected a decline of 31-40%, while 6.5% thought traffic would fall by more than 41%.

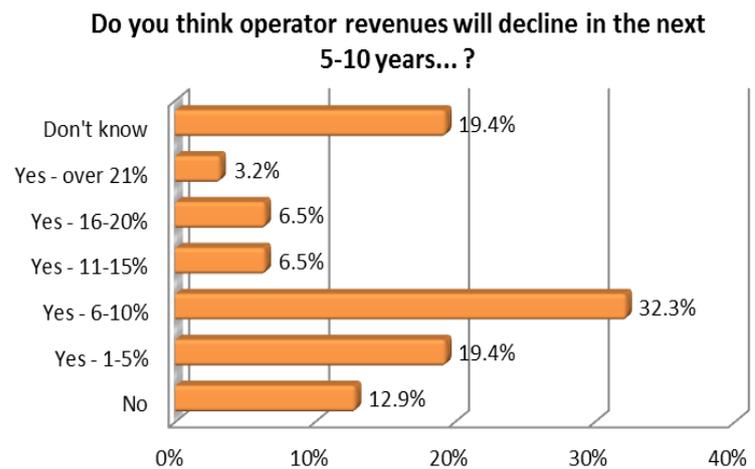
A total of 16% did not know, while only 12.9% said they did not expect to see any change from the current position.

An often overlooked side-effect of OTT usage is the impact it has on an operator’s service support costs, as mobile users often cannot, or do not, differentiate between OTT and network-based services. Almost one third of operators surveyed said they were concerned about the impact on customer service support costs as a result of OTT providers, while a similar amount were not sure.

The expected revenue impact of OTT-creep into network-based services and support costs over the next 5-10 years was immense. Over 65% of operators expected to see some form decline in revenues from current levels as a result of increased use of OTT IM clients on smartphones.

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Almost 20% of operators thought revenues would decline between 1-5% in the next 5-10 years, while 32.3% (the largest single group) expected to see a fall of 6-10%. Another 6.5% each predicted that revenues would fall 11-15% and 16-20% respectively, with 3.2% expecting a drop of more than 21%. Only 12.9% saw no impact over the period, while almost 20% said they did not know what would happen.



Source: Mavenir

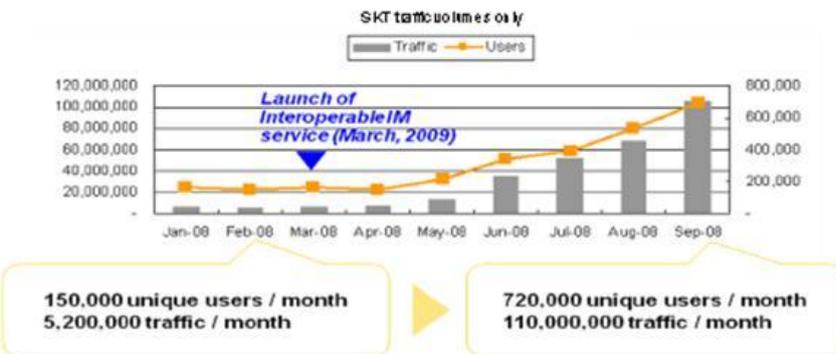
## RCS - leading the fight against OTT services

The jury had been out on RCS for some time, primarily due to the complexities of integrating IMS within legacy network architecture. However, the adoption of IMS within LTE means RCS services will become no more than an app server on the LTE network infrastructure sitting on top of Voice over LTE capabilities.

RCS is based on a specification put forward by Bharti, Deutsche Telekom, Orange, Orascom Telecom, SK Telecom, Telecom Italia, Telefonica, Telenor and Vodafone, and will enable customers to use IM, share live video and files, such as photos, simultaneously during calls - regardless of the network or device used, and all with the same identifier – the mobile phone number.

In order to access the smartphone platforms which do not support native implementation of RCS, the GSMA also recently invited software companies to submit development proposal with a functioning RCS client ready to demonstrate as of September, 2011.

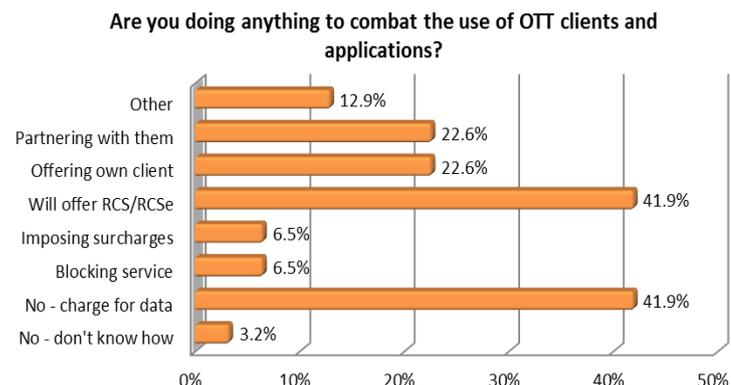
Evidence from South Korea demonstrates the impact interoperable operator-based IM can have on network traffic and, therefore, on stemming the flow of traffic to OTT IM clients. In 2004, SK Telecom launched its commercial mobile IM service – Mobile Messenger, followed in 2007 by Korea Telecom’s Show Messenger, and LGT’s Oz Messenger in 2008. These were stand-alone products, which could not interwork with other networks, hence buddy lists and messages were confined within each operator’s network.



Source: South Korean Case Study, Park Soe-Yi, SKT Rich Communications 2009, Paris, 4<sup>th</sup> November 2009

operators saw an increase in IM traffic of 100 times than prior to interoperability, and the number of users increased by a staggering 54 times. Seventy percent of users were in the 10-20 age group, and IM activity at night increased manifold. Korea Telecom also conducted in-depth analysis targeting heavy users of SMS to determine if cannibalization occurs due to IM usage. The operator found that heavy users of SMS keep sending the same quantity of SMS, but also use IM as much as SMS.

Not surprising, then, that the vast majority – over 58% – of operators surveyed expect that their customers will want to use RCS-based services, with only 16% saying they do not, and 26% not sure. As we heard earlier,



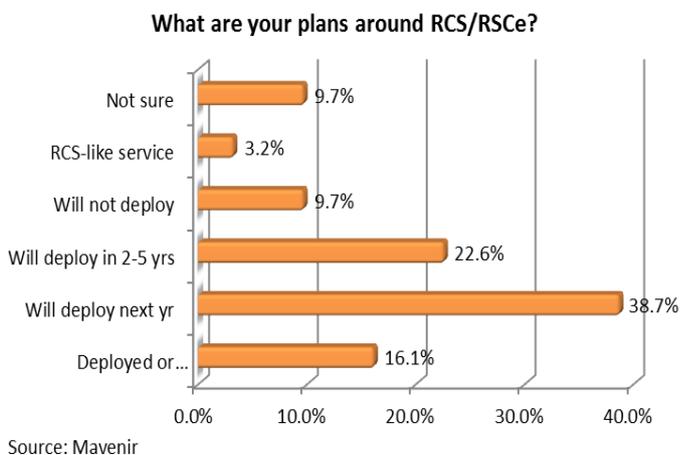
Source: Mavenir

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approximately 45% of operators surveyed here believe that if they offered an RCSe type service it would help prevent network-based traffic moving off network to OTT IM clients on smartphone.

Consequently, almost 42% of operators say they will roll-out IMS or LTE technology in order to offer RCSe services to their customers as a means of combatting the use of OTT clients and applications on smartphones.

However, another 42% said that they are not currently doing anything to combat OTT usage and are merely charging for the data used via their tariffing policies. Interestingly 22.6% of respondents also said that they are either offering their own IM client, or partnering with OTT providers. A minority, 6.5%, are trying to either block access to OTT clients or imposing surcharges for using OTT clients via deep packet inspection technology.



To date, 16% of operators say that they have either deployed or are now deploying RCSe services, with almost 39% saying that they plan to deploy RCSe next year, and 22.6% planning to deploy within the next 2-5 years. Only 10% of respondents said that they have no intention of rolling out RCSe services to their user-base, with a similar percentage not sure of their plans at the moment.

The remainder, another 3% of operators, plan to deploy 'RCS-like' services instead, which enable operators to rollout the enhanced address book functionality of RCSe quicker to market and without the need to install an IMS.

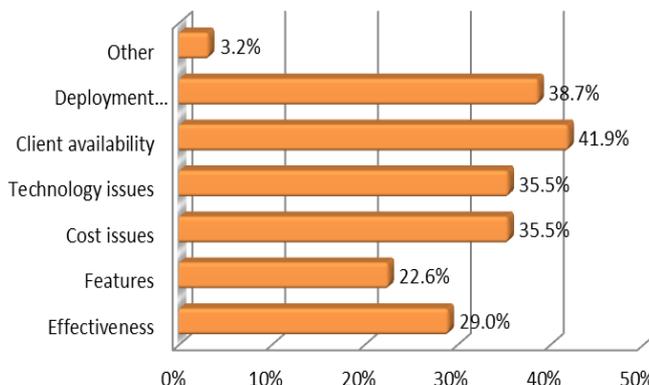
## Barriers to RCSe... and other options

Despite the apparent operator interest in, and demand for, RCSe and ‘RCS-like services’ a number of barriers remain to the rapid deployment of these services – namely issues around cost, technology deployment, client availability and lack of go-to-market strategy.

Most operators surveyed (41.9%) identified the lack of client availability as the main barrier to deployment, followed by 38.7% who pointed to challenges with deployment.

A further 35.5% each identified cost and technology issues around IMS as the likely deterrents.

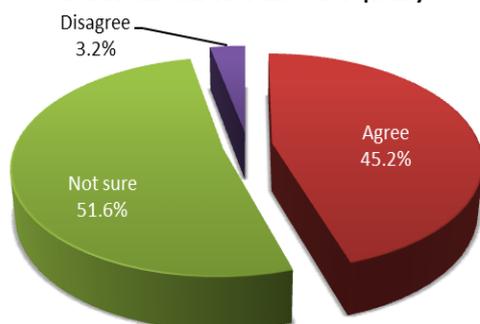
What, if any, are the barriers to deploying RCS/RCSe?



The research demonstrated that operators worry that RCSe native implementation can be difficult across different OEMs, while updating in-market devices could slow the network effect from launch. More so, however, is the doubt that investment in RCSe will actually have a clear customer benefit and provide investment returns. Twenty-nine percent of respondents felt that OTT IM clients are already too entrenched in the market, thereby diminishing the overall effectiveness of RCSe capabilities, while 22.6% thought that RCSe does not offer sufficient features to generate a meaningful impact on OTT IM clients.

All these barriers are obviously causing concern as only 16% of operators surveyed are currently deploying RCSe services. Despite operators identified that the overwhelming threat of network-

Do you agree that a pre-IMS, end-to-end, white-labelled, cloud-based service would enable operators to rollout RCS-like services more quickly?



Source: Mavenir

based traffic cannibalization is from OTT IM clients. This highlights that issues around cost, technology - specifically IMS integration, and the lack of available clients currently, are all holding back investment.

Over 45% of operators surveyed here believe that a pre-IMS, end-to-end, white-labelled, cloud-based service would enable operators to rollout ‘RCS-like’ services more quickly.

However, even a pre-IMS service would have to be co-ordinated with different operators to reach any form of scale which, in reality, means it is unlikely to be rolled out to market quickly. There are obvious cost benefits to a pre-IMS, cloud-based solution, but operators may prefer to go native believing that customers will demand a higher quality solution, or at least one offering better reach, than is already available through OTT IM clients.

## Conclusion

KPN was perhaps the first operator to publicly state the damage OTT providers are causing to network-based traffic, but 80% of all operators surveyed by mobile<sup>SQUARED</sup> also agree that OTT IM clients pose a threat to traditional operator-based services around SMS and voice.

More importantly, however, 32.2% of all operators surveyed have actually seen operator-based network traffic decline in the last 12 months as a result of increased use of OTT clients and applications on smartphones, while almost 15% said they have seen revenues decline as well.

Looking ahead, the situation is not expected to get any easier, with 70% of operators predicting traffic will decline further over the next 5-10 years because of the use of OTT clients, while more than 65% expect to see revenues decline as well.

All in all, this has helped create demand, and a market opportunity, for RSCe and RCSe-like services that can replicate the IM capabilities of OTT providers while maintaining IM messaging traffic on network. Over 45% of survey respondents agreed that RCSe services (offering services such as Enhanced Address Book, Rich Call for video and file sharing, and Rich Messaging for instant messaging across all mobile networks) would help prevent network-based traffic moving off network to OTT IM clients on smartphones.

South Korean operators saw their own IM traffic volumes rise 100 times following the introduction of IM interoperability, with the number of users increasing 54 times. Korea Telecom also discovered that heavy users of SMS keep sending the same quantity of SMS, but also use IM as much as SMS.

To date, 16% of operators surveyed say they have either deployed or are now deploying RCSe services, with almost 39% saying that they plan to deploy next year, and 22.6% planning to deploy within the next 2-5 years.

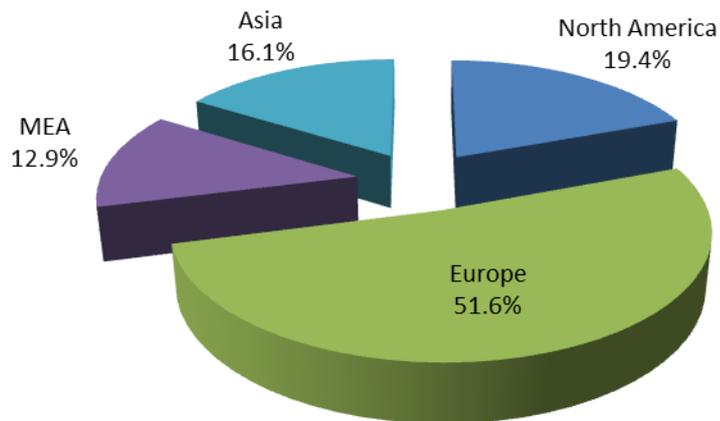
Despite the apparent interest in RCSe, a number of issues are likely to curtail the rapid deployment of these services – namely cost, technology deployment, client availability and lack of go-to-market strategy.

Almost 42% of operators surveyed identified the lack of client availability as the main barrier to deployment, followed by 38.7% who said deployment challenges, and a further 35.5% each who identified cost and technology issues around IMS as likely deterrents.

Reluctance to invest in RCSe now may provide a window for pre-IMS, end-to-end, white-labelled, cloud-based service to provide 'RCS-like' services more cheaply, and quicker to market. Over 45% of operators surveyed here believe that a pre-IMS solution may enable them to rollout 'RCS-like' services more quickly, while also voicing concerns that it would be difficult to co-ordinate multi-operator solutions – even cloud-based – quickly and while offering scalability.

## Appendix

### Location of survey respondents



Source: Mavenir

Note: mobile<sup>SQUARED</sup> surveyed 31 operators for Mavenir, representing most of the major operating groups worldwide, from September to mid-October.

The majority of respondents were based in Europe (51.6%), followed by North America (19.4%), Asia (16.1%) and Middle East and Africa (12.9%).

## **About mobile<sup>SQUARED</sup>**

mobile<sup>SQUARED</sup> provides specialist research which enables brands, agencies and the mobile industry to increase engagement with the mobile consumer.

We conduct primary research on the mobile industry and mobile consumers, with a focus on delivering exclusive forward-looking data on mobile device usage, mobile web, app and commerce trends and usage, and mobile advertising responsiveness to help clients identify and respond to fast-changing mobile trends.

And for a wider view of the industry, we provide detailed mobile industry user and revenue forecasts.

Our clients look to mobile<sup>SQUARED</sup>'s expertise to provide candid insight into the mobile market. We do this using our extensive global network of senior contacts to research, collect and collate the latest data, developments, trends and insight on an ongoing basis.

For more information, please visit [www.mobilesquared.co.uk](http://www.mobilesquared.co.uk)

## **About Mavenir Systems**

**Mavenir Systems** is a leading innovator of mobile infrastructure solutions for use by mobile operators to offer LTE and cloud-based communications services. We provide IP-based core network solutions for mobile operators worldwide to migrate voice and messaging services to LTE and enable operators to offer enhanced user experiences with voice, video, rich communications, and converged IP messaging that leverage LTE's new devices and higher speeds. Mobile operators can also transform their core network and extend into virtual and cloud environments to monetize and deliver **Mobile Cloud Services**.

The company's innovative approach is driving the convergence of mobile services architectures across 2G, 3G and 4G networks with new, open services ecosystems for telephony and messaging services to allow mobile operators to compete against the over-the-top (OTT) service providers.

For more information, please visit [www.mavenir.com](http://www.mavenir.com)