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OPERATOR PERSPECTIVES ON 4G BSS REQUIREMENTS

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INTRODUCTION

Flexibility, agility, speed, responsiveness: time and again we hear and read these words in discussions surrounding the future of the mobile operator. Often outplayed in service development by internet innovators that run free of network ownership, operators nonetheless have to bear the weight of the traffic—and the brunt of end user resentment when, for whatever reason, service falls short.

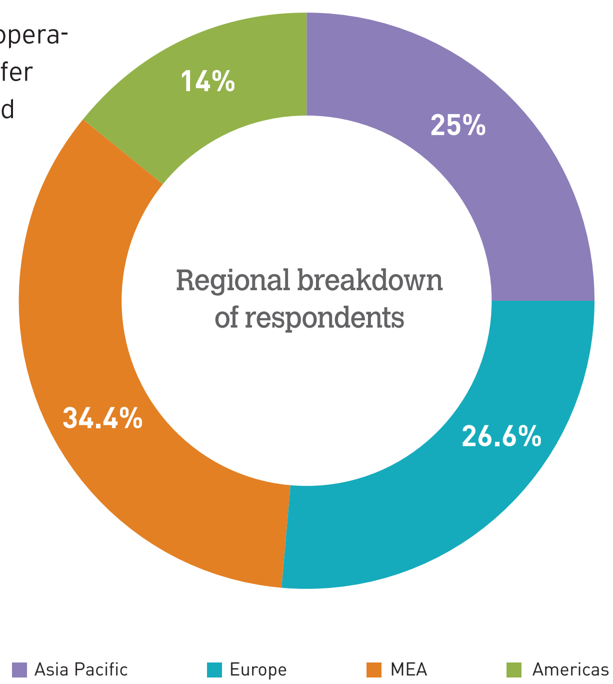
The pace of innovation has increased by an order of magnitude and yet operators are still running large numbers of legacy systems in their BSS environments that were designed for a different generation—both in technical and human terms.

Their limitations in respect to those key attributes mentioned above have much to do with their BSS environments. The elimination of silos, integration of disparate systems and game-changing transformational upgrades are permanent fixtures on the operator's agenda.
How operators address these issues will have a significant impact on their future successes and there are some big questions that need answering.

This paper draws on the previously unreleased results of a survey conducted at the beginning of 2014. This survey sought the opinions of more than 60 operator executives from around the world on requirements for BSS evolution as the industry condolidates its move to an LTE world.

The results show quite clearly the challenges that operators face in regard to their BSS systems. They also offer some insight into how those challenges are influenced and exacerbated by a range of factors, including the emergence of a range of new services and the need to deliver innovative new models for service delivery and charging.

Some of the results could have been anticipated and others were surprising. But only by understanding these problems can operators begin to make vitally important decisions about the nature of their BSS evolution.



MARKET SNAPSHOT: HOW MANY VENDORS, AND WHY?

It is probably news to nobody that many telcos have cluttered, multi vendor BSS environments. But just how many vendors were present at the operators represented in our survey?

Just short of one quarter of respondents appear to have a fairly manageable BSS environment, with less than three suppliers present. At the other end of the scale, more than one fifth revealed that they have six or more vendors present– and 7.8 per cent owned to having between 11 and 20 suppliers in their current BSS environment. But by far the largest share, 37.5 per cent, reported that they have between three and five vendors present.

A number of factors have contributed to the crowded nature of some operators' BSS portfoliоs. What stood out from the results was that many operators have been affected by procurement strategies that were department or service-led, although a desire to avoid reliance on a single vendor was also apparent.

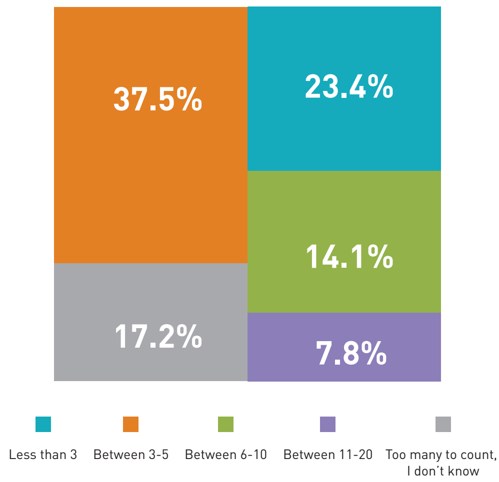
Respondents were asked to select all that applied from a list of reasons for having a multi-vendor environment. 'Legacy system limitations' and 'Different business lines have different systems' were the most popular answers, both selected by 47 per cent of respondents. Closely related to both of these, and selected by 31.3 per cent of respondents, was a legacy strategy of investing in a new system each time the operator wanted to introduce a new service.

M&A activity has been a constant in the operator sector and 29.7 per cent of respondents cited business growth through acquisition as another reason for a multi-vendor environment. It was interesting to note that 12.5 per cent said that a previous attempt at BSS consolidation or transformation had failed.

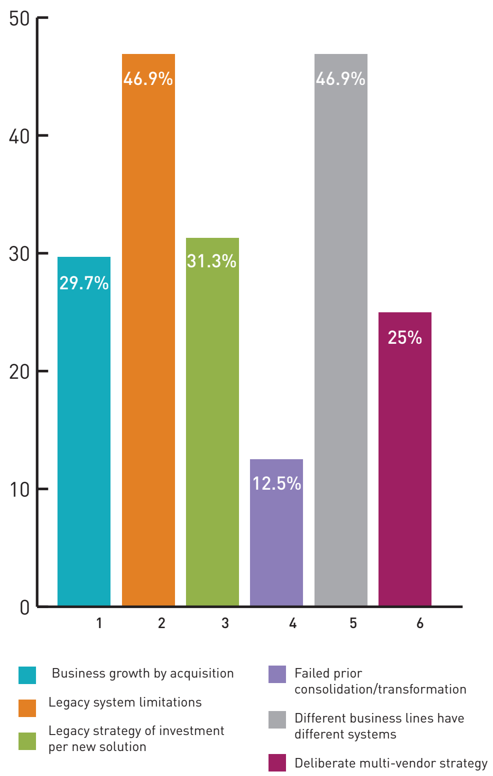
One quarter of respondents, meanwhile, reported the deployment of a deliberate multi-vendor strategy.

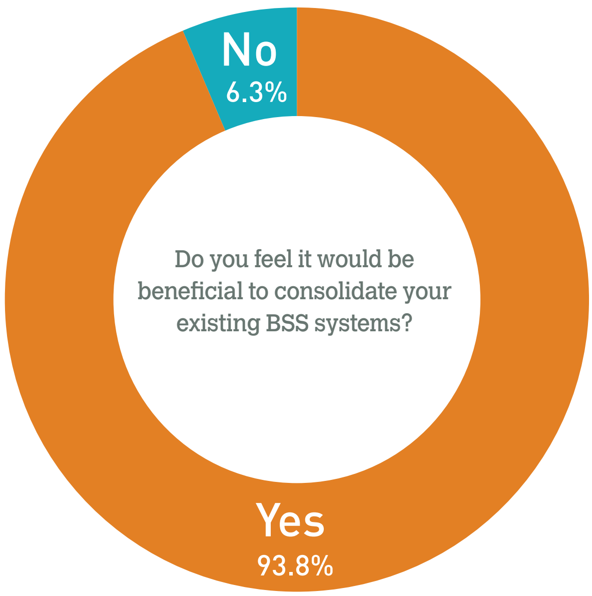
Whatever the reasons behind the structure of the portfolio, enthusiasm for evolution was overwhelming: 94 per cent of respondents said they felt it would be beneficial for their organisation to consolidate its existing BSS systems.

Solutions from how many different vendors are present in your current BSS environment?



Why do you have this number of separate BSS systems?





FRAGMENTATION AND CONSOLIDATION: PROBLEMS AND BENEFITS

Such emphatic support for BSS consolidation suggests that current levels of fragmentation are causing operators serious problems. We presented respondents with a number of challenges related to disintegrated BSS environments and asked them to rank them in terms of seriousness.

The challenges were rated on a scale of one to seven, with seven indicating the highest level of seriousness, and answers revealed deeply felt concerns among operators about their ability to launch new services and pricing models as quickly as necessary.

There are a number of ways to interpret the results. If we take an average rating, for example, then the most serious concern among respondents was that IT development costs for such complex BSS environments are too high. This was given an average rating of 5.53 out of seven, where one is the lowest level of concern and seven is the highest.

But perhaps a more effective measure of respondents' depth of concern is to combine the percentage of respondents who ranked each option six or seven for severity. Interpreted in this way, slow time to market for new services and promotions emerged as the most serious challenge operators face as a result of their fragmented BSS environments by some distance. More than 60 per cent of respondents gave this a six or seven rating and it was also the option with the highest occurrence of seven ratings, at 34.9 per cent.

But delays are not the extent of the problem, with 51.6 per cent of respondents giving a six or seven rating to the statement that they are in fact unable to support new services or business models because of the absence of an integrated BSS environment.

In second place, scoring six or seven for seriousness as a challenge by 54.8 per cent of respondents, was the high Opex and Capex costs associated with a fractured BSS environment. Related to this and slightly behind, ranked six or seven by 53.3 per cent of respondents, was the fact that BSS complexity was driving IT development costs to unacceptably high levels.

The least high-ranked of the challenges was poor visibilty of subscriber behaviour, with 46 per cent of respondents giving it a six or seven rating. But while this was relatively low in the context of this question, it should be borne in mind that all of these challenges are clearly felt by operators to be serious concerns.

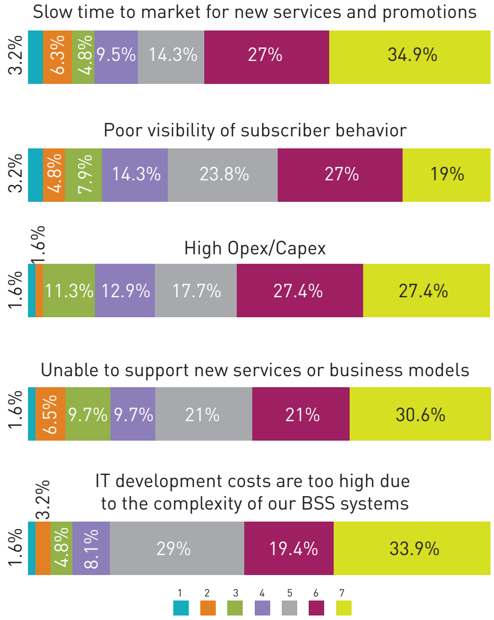
These challenges were reflected in a separate question in which we asked operators to rate the benefits they would expect to derive from the consolidation of their BSS systems. Using a similar scale as in the question discussed above, operators rated a number of options for the level of benefit, with seven being the most beneficial.

Once again the top answers related to business model and service development. More than 80 per cent of respondents gave a six or seven benefit rating to the ability to support new pricing strategies. The same rating was given by 73.8 per cent of respondents to the ability to launch marketing promotions and new services more quickly.

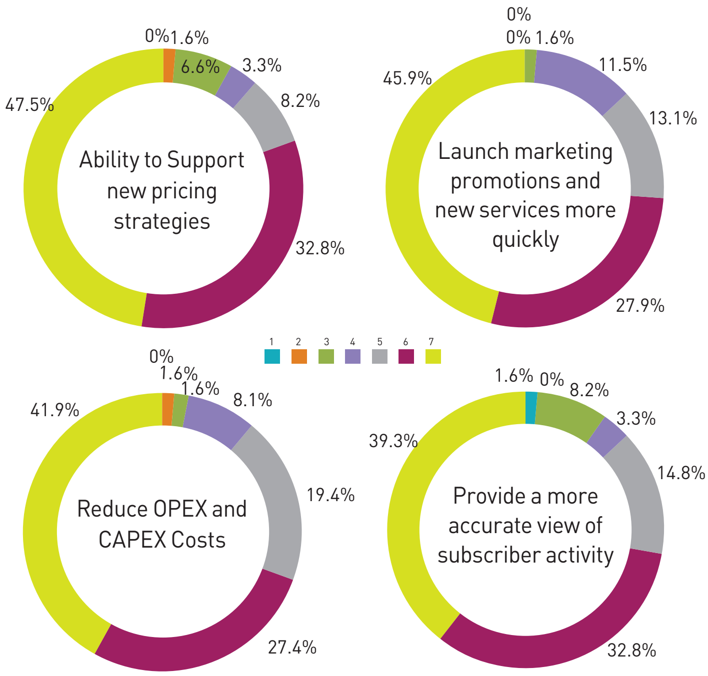
Fractionally behind this, rated six or seven by 72.1 per cent of respondents was the ability to provide a more accurate view of subscriber activity, while 69.3 per cent of respondents gave the same rating to the ability to reduce Opex and Capex costs.

This section of the survey revealed very clearly that operators' ability to develop and launch new pricing strategies and services as quickly as they believe they need to is hindered by their BSS environments. And as we shall see in the next section this creates a worrying threat to their ability to monetise their next generation networks.

Q What are some of the key challenges that you are experiencing by not having an integrated BSS environment? (Rank 1 – 7 in terms of seriousness, with 7 being the most serious)



Q Which of the following benefits would you hope to achieve? (Rank 1 – 7 in terms of beneficial impact, with 7 being the most beneficial)



BSS AND SERVICES: THE MUTUAL IMPACT

Operators have spent billions of dollars acquiring spectrum and deploying LTE networks and they are under great pressure to drive return on those investments through the deployment of next generation services. Given operators' concerns about the limitations of their BSS environments, though, this may not be straightforward.

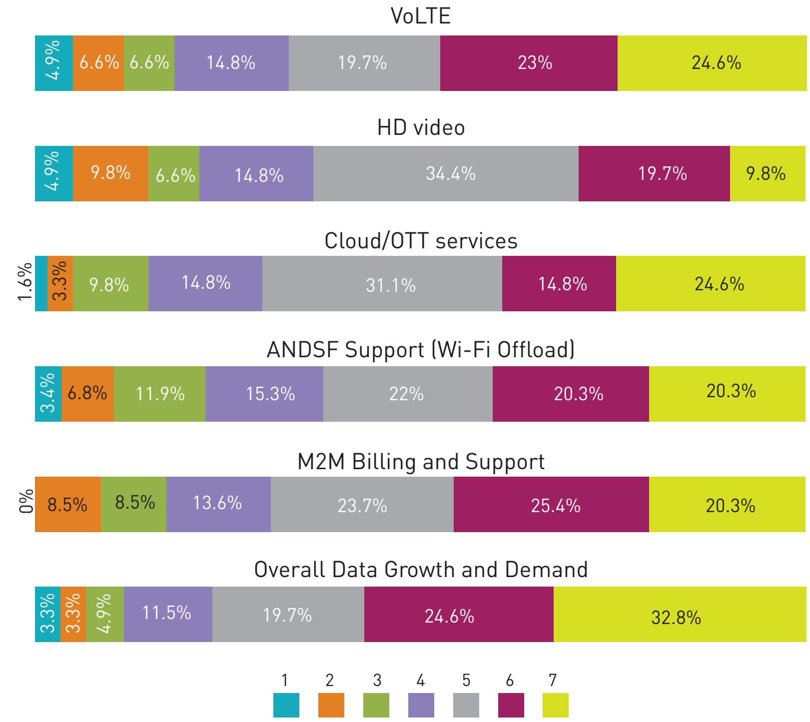
For example, 68.2 per cent of respondents ranked the ability to quickly launch and support new pricing plans six or seven out of seven for importance in the monetisation of next generation services. This was the highest ranked operator attribute in this regard, ahead of subscriber self-care/ provisioning (rated six or seven by 65 per cent of respondents) and better insight into customer experience (62.5 per cent).

In light of the results discussed in the previous section this should be a cause for concern. Indeed, responding to a separate question, 43.8 per cent of operators said that the inability to support new tariffs and pricing models was one of the challenges they will face in launching new services.

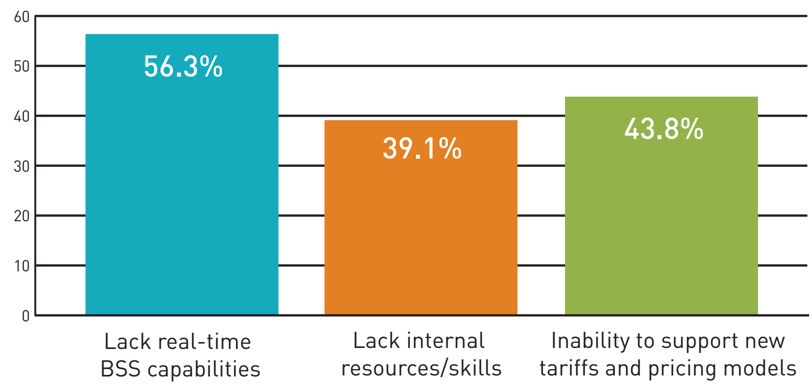
There was a bigger surprise in store with this question, however. The challenge that the largest proportion of operators said they will face in launching new 4G services was the lack of real-time BSS capabilities, which was selected by 56.3 per cent of respondents.

Commenting on this data, Jim DeMarco, Chief Technology Officer at BSS specialist Redknee, notes: "This is a counterintuitive result, but it makes sense. Real time solutions have been around for quite a while, but many legacy voice prepaid systems can't do data, and few postpaid systems can handle real time. With the real time nature of the internet, this technology lapse is a gaping whole for many operators."

Q To what extent will these next generation services challenge your current BSS systems the most? (Rank 1 – 7 in terms of seriousness, with 7 being the most serious)



Q What challenges will you/ do you face in launching new 4G services?



BSS AND SERVICES: THE MUTUAL IMPACT

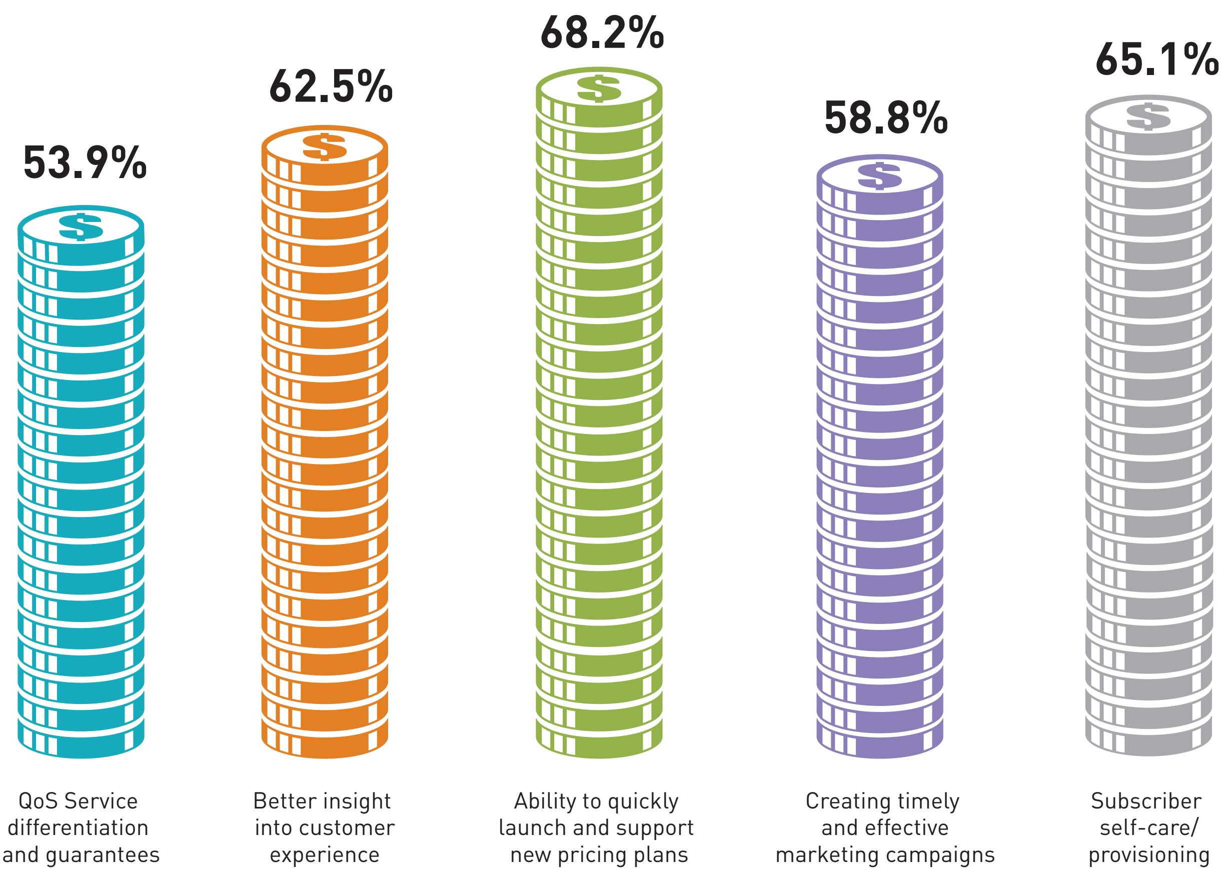
More than half of our survey respondents said they expected QoS service differentiation and guarantees to be very important to monetising next generation services

Different next generation services will exert different levels of pressure on operators' BSS installations, so we asked respondents to rate a number of services for the seriousness of the BSS challenge they represent. The most challenging, ranked six or seven by 47.6 per cent of respondents was Voice over LTE, a service that we can expect to ramp up in terms of service launches during this year and next.

M2M billing and support—a key business opportunity for operators looking to expand and diversify—was felt to be a serious BSS challenge by 45.4 per cent of respondents, while cloud/OTT services (39.4 per cent) and HD video (29.5 per cent) were judged less of a concern. As we noted earlier, though, a low rating compared to other services does not eclipse the fact that significant concerns exist.

There is much discussion around quality of service differentiation in relation to next generation services and the ability to blend policy and charging is widely expected to be very important to operators moving forward. More than half of our survey respondents said they expected QoS service differentiation and guarantees to be very important to monetising next generation services and, in the following section, we will look at this in a little more depth.

How important do you believe the following will be for monetizing next generation services?



QUALITY CONTROL

To date most instances of operators using quality of service controls have centred on the throttling of service for end users who have exceeded certain usage boundaries. But operators are looking to exploit QoS as a means of differentiation.

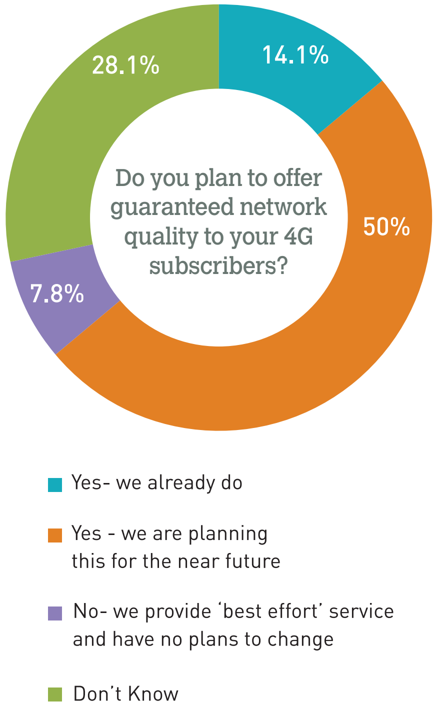
Some of the respondents to our survey have already begun this process, with 14.1 per cent of respondents saying that their organisation already offers guaranteed network quality to its LTE subscribers. Half of all respondents said they were planning to introduce this strategy in "the near future" while less than ten per cent said there were no such plans. For these respondents a best effort approach to LTE service provision continues to suffice.

We then asked respondents to tell us for which services they expect guaranteed network quality to be the most important. Again answers were provided as ratings on a one to seven scale, where seven represented the highest importance.

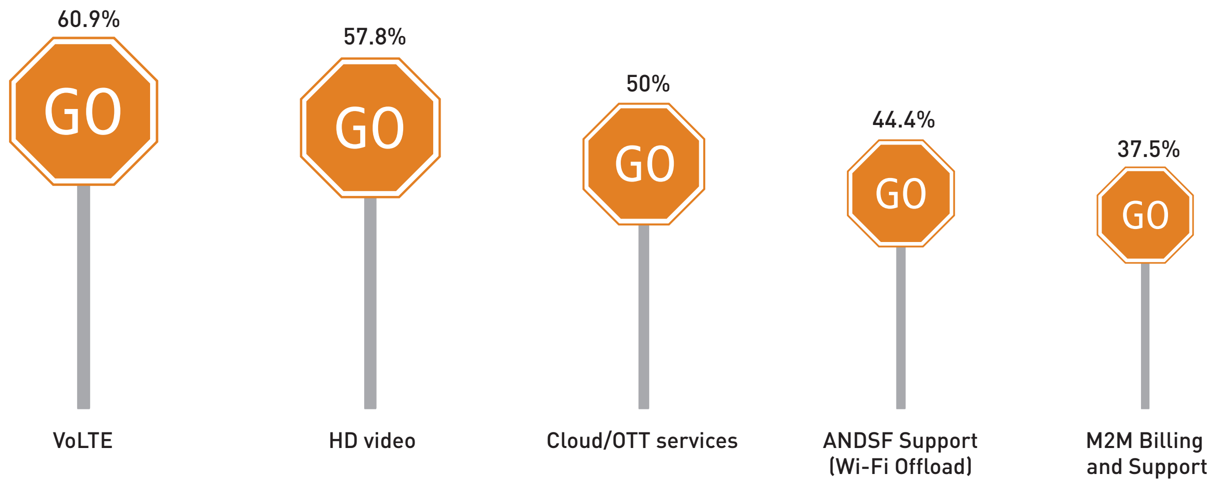
Perhaps unsurprisingly Voice over LTE emerged as the service that operators expect to be most dependent on guaranteed QoS, with more than 60 per cent of respondents rating it six or seven on the scale. This was closely followed by HD video, given the same rating by 57.8 per cent of respondents and M2M billing and support, given the same rating by 50 per cent.

"More than 80 per cent of respondents rated QoS as ranging from somewhat important to mission critical," says Redknee's Jim DeMarco. "But today QoS is completely separate from pricing. The ability to do policy and charging together is mission critical now because operators' pricing mix has to include the quality and delivery mechanism as part of the customer offering. This need will accelerate as operators adopt sponsored data plans. We're seeing some operators dabbling in these areas now, but more than half of operators in the survey are saying they can't include policy with pricing."

It is clear that operators recognise the need for change. But this simply places in front of them the complex problem of successfully introducing that change so that they are aligned to the challenges of the present and future market.



Please rank the importance of guaranteed network quality for the following services



MAKING CHANGES

There is a big difference between operators knowing they want to do something and actually doing it. While it is clear from the survey results discussed so far that some kind of rationalisation of the BSS environment is hugely important for a significant number of operators, such a process is far from simple.

We asked respondents about obstacles that could stand in the way of any attempts they might make to consolidate their BSS portfolios. The biggest concern, rated six or seven out of seven for seriousness, was the issues that surround integration; the fact that such a project could be too difficult and time consuming.

The next most serious threat, rated the same by 52.4 per cent of respondents was that consolidation might be too costly, making it difficult to contsruct a clear business case.

One third of respondents gave a six or seven rating to the assertion that consolidation is too risky; that their various systems would not work properly in combination. The same proportion gave the same rating to a structural issue, namely that it is not clear who within their organisation would be best placed to lead any transformation process. This is related to an answer from another question, in which almost 40 per cent of respondents said that their organisation lacked the internal resources and skills to properly address the launch of new 4G services.

And yet we know from the 2014 Telecoms.com Intelligence Global Industry Survey, the results of which were published in February, that many operators are planning to deploy or upgrade a range of BSS applications within the next year.

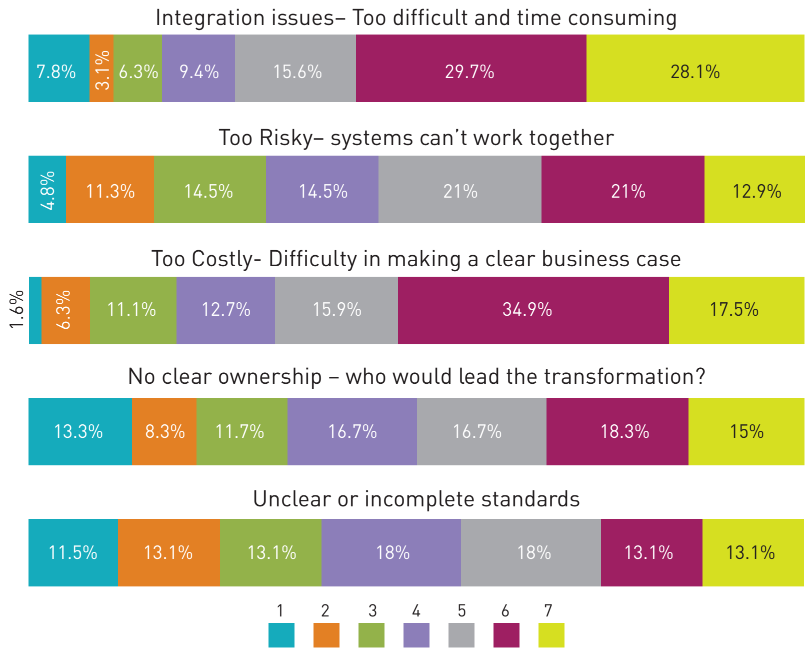
We asked more than 350 operator representatives which applications they were planning to deploy or upgrade and the results can be seen in the chart on this page. The system set for the most widespread attention is customer management, slected by 43.6 per cent of respondents, while billing and self service also scored highly.

More than 27 per cent said that they were planning to overhaul their complete BSS systems which was balanced, to an extent, by the 18.2 per cent who reported that no systems were earmarked for deployment or upgrade.

There is much debate within the industry over the relative benefits of a full BSS transformation and a more piece-meal approach. Redknee's Jim DeMarco argues that the "big bang" transformational approach is indeed too costly and unwieldy and that the problem needs to be segmented into manageable chunks that are addressed with the end goal always in mind.

"The challenge for operators is to be able to do something that's profitable but while at the same time being more responsive," says Redknee's DeMarco.

What are the biggest obstacles to consolidation of your BSS environment? (Rank1 – 7 in terms of seriousness, with 7 being the most serious)



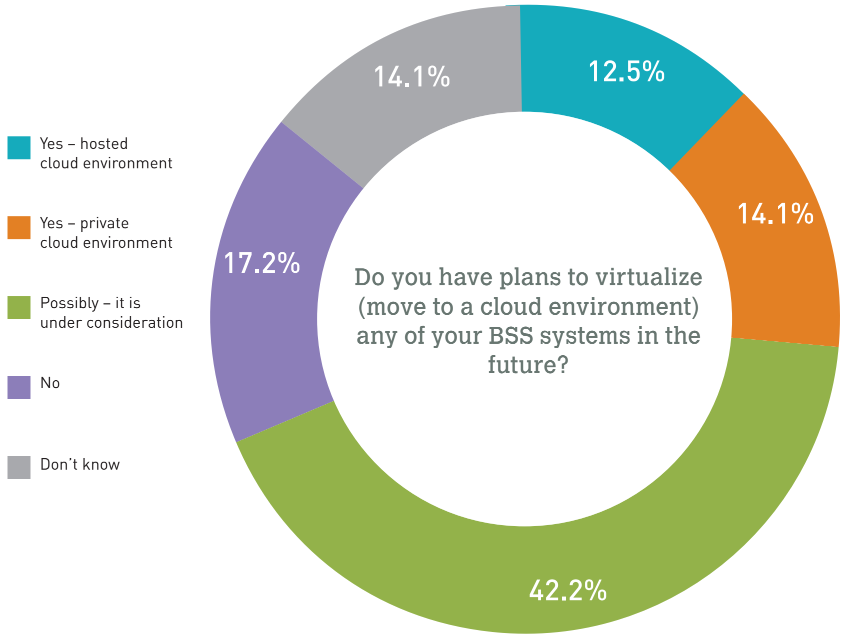
MAKING CHANGES

"Experience has shown us all that large transformation projects end up replacing old problems modeled on old software with old problems modeled on new software. A more pragmatic approach leaves the legacy systems in place where needed to handle purely legacy issues, allowing modern systems to handle the responsiveness in a cleaner manner. Eventually, as the business need that caused the preservation of the legacy system fades, the systems can be eliminated; and the modern system is left standing without a large legacy configuration to hold it back."

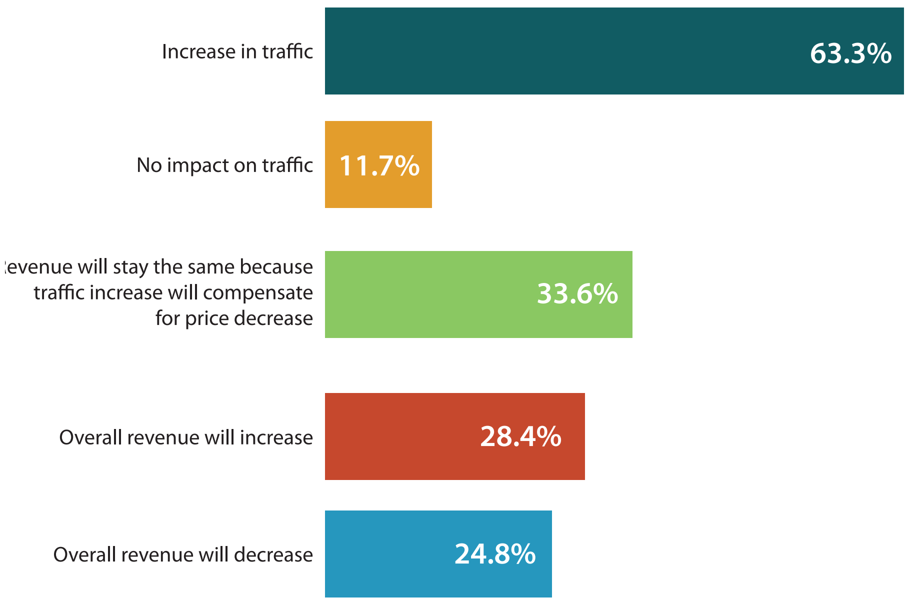
Overlaying new systems is no bad thing if done right, he suggests. Deploying systems that bring real time into the BSS environment—which the survey revealed as a key requirement for many operators—can be done without creating a need for a rip and replace, he says.

"It's just like any mathematical or engineering problem," DeMarco says: "you just have to divide it into managable parts so you can solve it one piece at a time. As long as everything is in line with your long term goal, this is the right way to do it. This is the big step for operators now, to figure out how to divide it up and what are the most important pieces. And 4G services is a very important piece."

Then there is the possibility of moving to the cloud. Where scale of transactions is an issue, a move to external systems can be the way forward. Indeed 42.2 per cent of respondents to this survey reported that their organisations are currently considering the option of virtualising some of their BSS systems. And while 17.2 per cent said there were no plans in place, more than a quarter of respondents said the move to the cloud, for them, has already begun. 12.5 per cent said they had already moved some systems to a hosted cloud environment and 14.1 per cent to a private cloud environment.



Which of the following BSS applications are you planning to deploy/upgrade in the next 12 months?



CONCLUSION

BSS consolidation is an issue of import and urgency for operators around the world, and that urgency derives in no small part from the introduction of a range of new services, business models and charging strategies.

The responses to this survey offered a frank assessment of operators' preparedness to address this issue. The need is clearly well understood; there is no lack of enthusiasm for change. Improved time to market and far greater responsiveness in terms of the development of new charging models and services are essential capabilities for the future.

Equally well understood, however, are the various internal and technical shortcomings and operational challenges that threaten the delivery of that change.

Perhaps most surprising among the results was the proportion of respondents from operators that lack the real-time BSS functionality to enable the kind of flexibility and reactivity that they desire.

Knowing what you want and knowing what you lack are vitally important if progress is to be made but operators clearly also need to develop an understanding of how to plan the journey. Only then can essential change be wrought.

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Established in 1999, Redknee provides critical real-time monetization software to some of the world's largest communications service providers, delivering the most innovative real-time, pre-integrated billing and customer care solutions in the market.

Today, their software addresses the needs of more than 200 service providers and touches one third of the world's population on a daily basis.

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