Television in the cloud virtualisation era

Produced by

DIGITAL TV EUROPE

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Introduction

Pay TV providers face a growing number of competitive challenges, both from the entry of new telecom entrants looking to deliver multi-play services to drive up revenue per user and from a growing number of flexible and innovative OTT service providers. Established pay TV operators and new entrants alike are increasingly looking to cloud technologies both to reduce their capital and operating costs and to extend the range of their offerings and increase the speed with which they can introduce new services.

While cloud TV has attracted much attention, the nature of the benefits it offers and the ways in which it can best be deployed to match the priorities of operators is still subject to debate.

DTVE recently surveyed over 150 video industry players from over 40 countries, 17% of whom identified themselves as triple or quad-play operators, 12% as pay TV channel operators, 10% as OTT service providers, 10% as free-to-air broadcasters, 7% as IPTV service providers and 7% as cable operators to find out their views on a range of topics related to cloud TV. (Other respondents included DTH operators, consultants, system integrators and technology providers.)

The survey revealed that:

- Cloud TV is important but it's not going to replace the set-top box anytime soon. While TV operators believe that most TV services will ultimately be delivered from the cloud, and many are already using cloud technologies, they will also continue to invest in advanced set-top platforms. Essentially, operators currently see the cloud as a complement to advanced boxes in the home rather than as a substitute that could take expensive consumer premises equipment off their books.

- Operators want to match the speed and level of innovation provided by OTT providers and to provide access to titles that are owned and marketed by a wide variety of third-party OTT providers. They are more interested in using the cloud to extend the technical reach of their services than they are in using it to extend the range of content on offer to their subscribers.

- Operators are primarily interested in delivering services that are personalised, and that match the innovation – particularly in terms of the user experience – that has been achieved by OTT providers.

- Operators not only see a consistent, advanced multiscreen user guide as a key app that could be enabled by cloud TV but are looking to migrate DVR services to the cloud rapidly if the technology is available and the rules allow it. TV operators are interested in providing advanced user guides that integrate OTT and multiscreen content as well as traditional pay TV services, and see the cloud as having an important role in enabling this. As far as DVR is concerned, while a large number of operators currently deliver DVR services through set-top boxes in the home, few want to deploy hard-drive enabled boxes if they can avoid it. DVR is a key application that could attract operators to use the cloud.

The cloud and pay TV

Our survey results indicate that there is not only a high awareness of cloud TV as a concept but that the cloud will play a major role in enabling the delivery of pay TV services in the future.

Asked to choose one of a number of statements that best reflected their opinion on the relevance of cloud-based delivery of TV to pay TV operators, the vast majority of respondents agreed that many if not most pay TV services will ultimately be delivered from the cloud, while over 95% claimed an awareness of what cloud TV meant. However, views on how cloud TV technology might have a direct impact on investment decisions by operators are less clear-cut.

Among those who believe in the cloud there is roughly an even split between those who hold that service providers will migrate the majority of services to the cloud and roll back on investing in consumer premises hardware, and those who believe that pay TV operators will continue to invest in advanced set-top technology and use cloud technology to complement that investment.

A significant number of respondents – 42% – endorse the view that, while a growing proportion of services will be delivered from the cloud, operators will continue to invest in advanced set-top box platforms and will continue to deploy set-tops for the foreseeable future.

By contrast, approximately 21% of respondents believe that the bulk of pay TV services will be delivered from the cloud in the future and that operators will progressively move away from investing in set-top boxes. A smaller, but significant, number – 16% – endorse the view that the cloud represents the future of pay TV and believe unambiguously that the vast majority of services will be delivered from the cloud in the near future.

Only a small minority of respondents – fewer than 4% – believe that cloud-based TV will play only a marginal role in the future of pay TV. (fig. 1)

Respondents to our survey not only demonstrated a high awareness of cloud technology as a term, but also claim to be using the cloud to deliver services now. Approximately 37% of the sample say they are using cloud technologies to deliver a range of services, while a further 24% say they are in the midst of trials of cloud technology to deliver some services, although they have yet to launch any of these commercially.

A further one in five respondents say they are studying the use of cloud technologies, while a smaller group say they plan to use cloud technologies in the future. Fewer than one in 10 respondents say they have no plans to launch cloud-based TV services. (fig. 2)

Fig. 1. Which of the following statements best reflects your opinion of the relevance of cloud delivered TV services to pay TV operators?

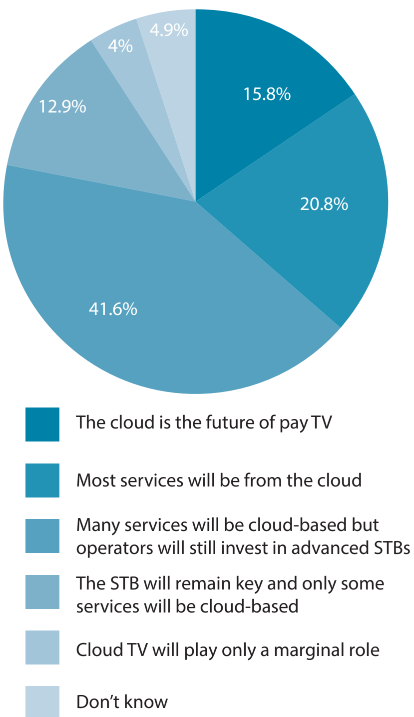
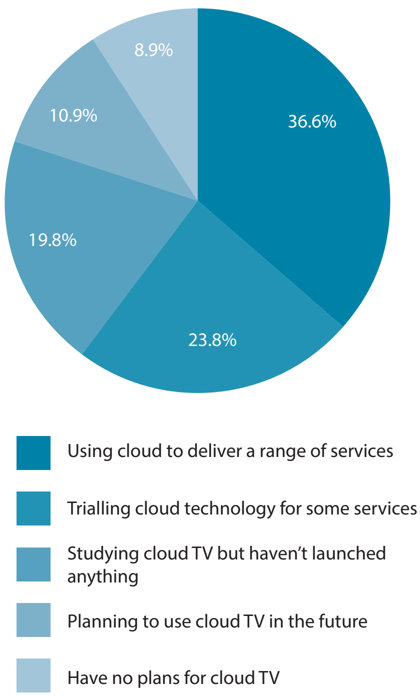


Fig. 2. Which of the following descriptions best reflects your experience of using cloud TV technologies to date?

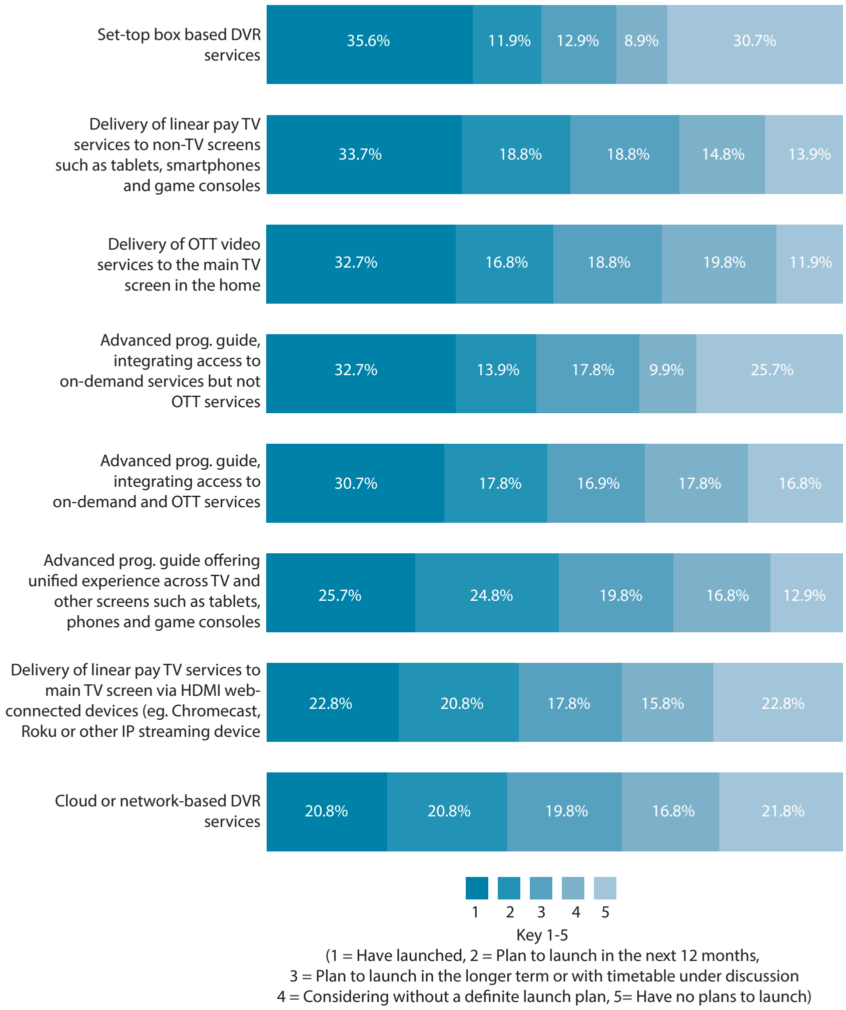


Categories of service

The high level of interest in cloud TV exhibited by our survey respondents – and the significant proportion that already claim to be offering a service – is likely to be linked to the fact that many of our sample already claim to be offering various advanced TV services, including services that could potentially benefit from the use of cloud technologies.

We asked respondents about their deployment of a range of digital services grouped under three broad headings: advanced interactive programming guide; OTT and multiscreen services; and DVR services.

Fig. 3. Which of the following TV services are you currently offering or plan to offer in the future?



Around a third of respondents say they have already launched an advanced interactive programming guide that integrates on-demand services but falls short of including OTT services. A further three in 10 have integrated access to on-demand and OTT services in their programming guides, while just over a quarter of respondents say they have deployed an advanced guide that provides a unified experience across the TV and other screens including tablets, smartphones and game consoles.

When those who plan to launch these services within the next 12 months are included, the number for each category that have either launched or plan to launch a service rises to around 50% in each case, strongly indicating that operators that have deployed advanced user guides, but have yet to integrate on-demand, OTT and multiscreen functionality to those guides, plan to do exactly that within the next year.

Of those that have yet to launch an advanced user guide and have no definite plans to do so, there is stronger interest in guides with on-demand, OTT and especially multiscreen functionality.

Only about one in eight respondents say they have no plans at any stage to deploy advanced user guides that deliver a unified experience across multiple screens.

Regarding the inclusion of OTT services to the main screen in the home, about one third of survey respondents say they already deliver this, with a further 17% saying they plan to do so within the next 12 months. A smaller proportion currently use web-connected retail devices such as HDMI streaming sticks or similar devices to deliver OTT services to the TV. About a third of respondents say they are delivering linear pay TV services to IP devices including tablets, smartphones and game consoles, and another one in five say they plan to do so in the next 12 months.

Regarding DVR services, we asked our survey respondents if they offer set-top based DVR and cloud-based DVR separately. Over a third – 36% – say they currently offer hard-drive based DVR via set-tops, with a much smaller proportion saying they plan to do so in the next 12 months, while just over one in five say they offer cloud or network-based DVR, with a similar proportion saying they plan to do so in the next 12 months.

Of those that have yet to offer a DVR service, interest in cloud or network-based DVR is on the up, while interest in client hard-drive based DVR appears to be on the wane.

Three in 10 respondents say they have no plans to launch a hard-drive based DVR service at any stage, while only one in five have no plans to launch a cloud or network-based service. A higher proportion plan to launch cloud or network-based services in the long term or are considering a launch without a definite plan than are planning or considering hard drive-based DVR services. (fig.3)

Views of the cloud

Further evidence of the momentum behind cloud-based TV delivery is provided by the views of our survey respondents on whether a basket of services are more effectively delivered via the cloud or the set-top box.

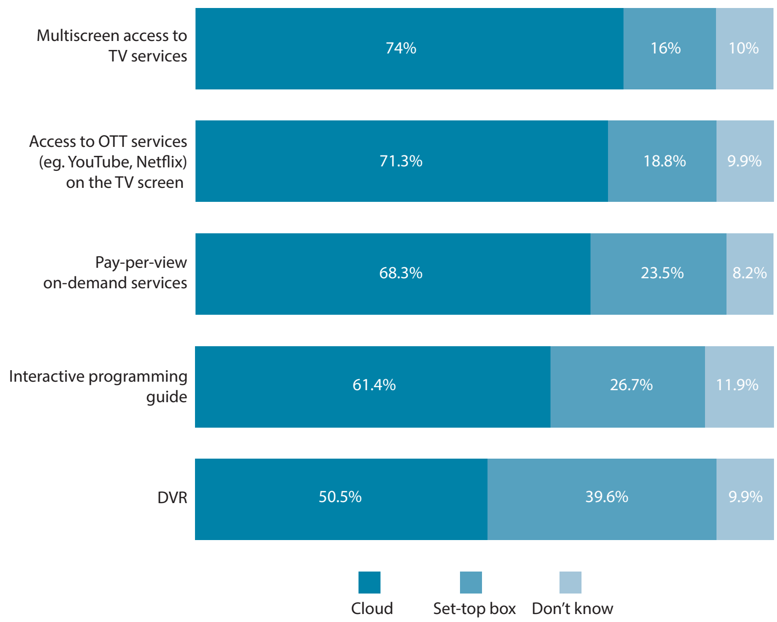
Perhaps unsurprisingly, respondents break strongly in favour of the cloud when it comes to delivering multiscreen and OTT services. Three in four say that multiscreen access to TV services is more effectively delivered via the cloud, against 16% in favour of the set-top box. A similarly high proportion – seven in 10 – favour the cloud for the delivery of OTT services such as YouTube or Netflix to the TV screen, against 19% who favour the set-top box. In each case, a relatively small proportion of one in 10 respondents answered 'don't know' to these questions.

Over two thirds of respondents also prefer the cloud when it comes to delivering transactional video-on-demand services, against under one in four who favour the set-top box only. Over three in five say the cloud can more effectively deliver the interactive programming guide, with one in four favouring the set-top box for this application.

Respondents are more evenly split when it comes to delivering DVR services. However, a clear majority – over 50% – look to cloud-based DVR, while only two in five believe the set-top is still the best option for a DVR service.

The results show a clear majority of respondents in favour of the cloud for each service category, with respondents evidently unmoved by counter-arguments in favour of client-based delivery of services, such as issues relating to bandwidth availability, quality of experience and rights. (fig.4)

Fig. 4. In your opinion, is it more effective to deliver the following advanced services from the cloud or from a set-top box in the home?



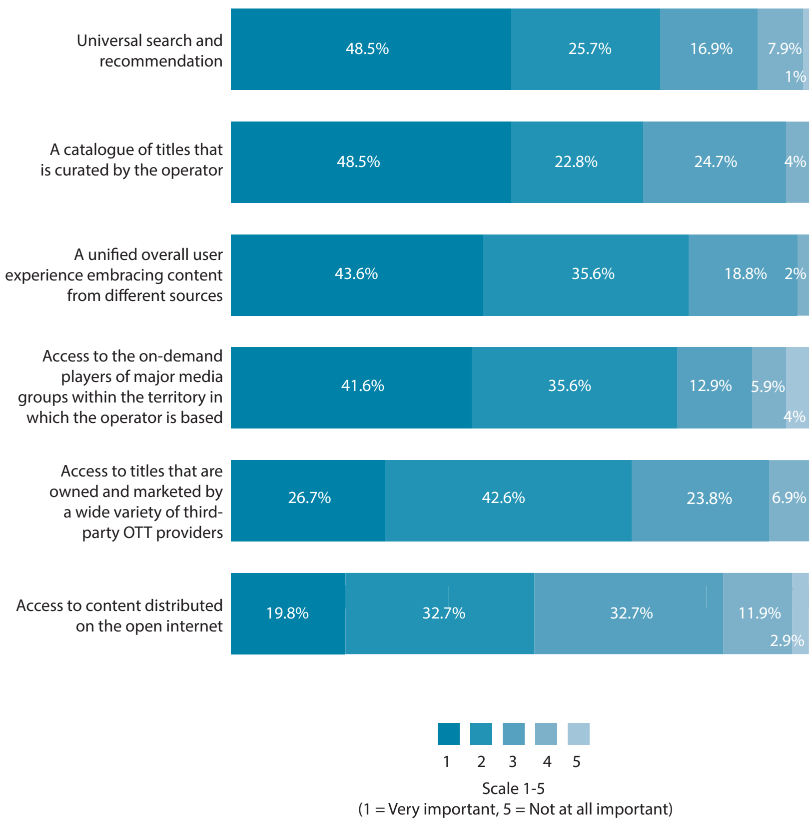
VoD and the cloud

The survey looked in some detail at one category of service – video-on-demand – to assess whether the priorities of pay TV operators could better be served by a broader cloud-based platform.

Asked to rate a range of factors for importance to the success of a VoD offering on a scale of one to five, our respondents accorded significance to a unified overall user experience that embraces content from different sources, with close to four in five respondents giving this the highest or second-highest possible score. Three in four also rated the ability to provide universal search and recommendation with the highest or second-highest possible score.

Also highly rated by survey respondents was the notion of curation of content (by the pay TV provider), with a catalogue of titles curated by the operator seen as key to the success of VoD by almost one in two respondents, who gave this the highest possible score for importance. Survey respondents also viewed access to the on-demand players of major media groups within the territory in which the operator is based as key to success, with three in four giving this a score of one or two on a scale of one to five.

Fig. 5. How important is it for pay TV operators to provide the following features as part of a video-on-demand offering?



The survey sample accorded lesser but significant importance to the ability to provide access to titles that are owned and marketed by a wide variety of third-party OTT providers, while providing access to content distributed on the open internet is not seen as particularly important.

From the responses to this question, it is clear that our survey sample believes that factors contributing to the success of VoD that could potentially benefit from cloud-based provision – such as embracing content from different sources, universal search and recommendation and – to a lesser extent – access to OTT service providers' content – rank highly. However, it is also true that some potential features that could benefit from cloud technology, such as access to a wider world of internet content, are seen as less important. (fig. 5)

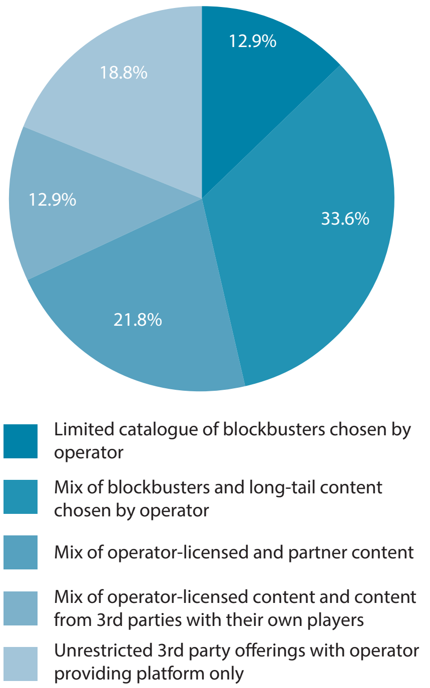
When asked directly about the kind of pay TV VoD offering that is most attractive to consumers, our sample also took a relatively cautious view regarding the breadth and openness of service that would best appeal to pay TV subscribers. Asked to choose one of a set of statements that best expressed their view, over a third of respondents said that a mixed catalogue of recent blockbusters and long-tail content selected and licensed by the operator would have the strongest appeal.

This was followed in popularity by a mixed catalogue of pay TV operator-licensed combined with content from selected partners delivered via their own players.

An unrestricted offering with the pay TV operator supplying the technical platform only, or an offering that includes content from an unrestricted number of legitimate third-party suppliers, attracted less support.

Responses to questions relating to VoD indicate that cloud TV technology, while highly important to operators, is seen as a powerful technical enabler for advanced services, and not as a substitute for a content strategy. Operators – or a significant portion of them – continue to value curation and their own skill in deciding the level of supervision of the choices they make available to their customers. (fig. 6)

Fig. 6. For video-on-demand, which type of offering would be most attractive to consumers?



Pay TV priorities

While the appeal of web-based services as part of an overall pay TV VoD offering attracts a mixed response, survey respondents are highly aware of the wider threat presented by OTT services, and in particular, by their adaptability and flexibility in delivering new and exciting user experiences. If TV operators believe that cloud solutions have a high degree of relevance to their business, this is likely related to the nature of the competitive threat facing them.

Asked to rate a set of factors for relevance to the success of the pay TV business now and in the future on a scale of one to five, survey respondents highlighted, above all, the need for pay TV operators to match the experience users are increasingly accustomed to on the web.

Among the very top priorities for our survey sample is the ability to personalise the user experience, matching the experience of users on the web, and the ability to launch new services at the same speed as web service providers.

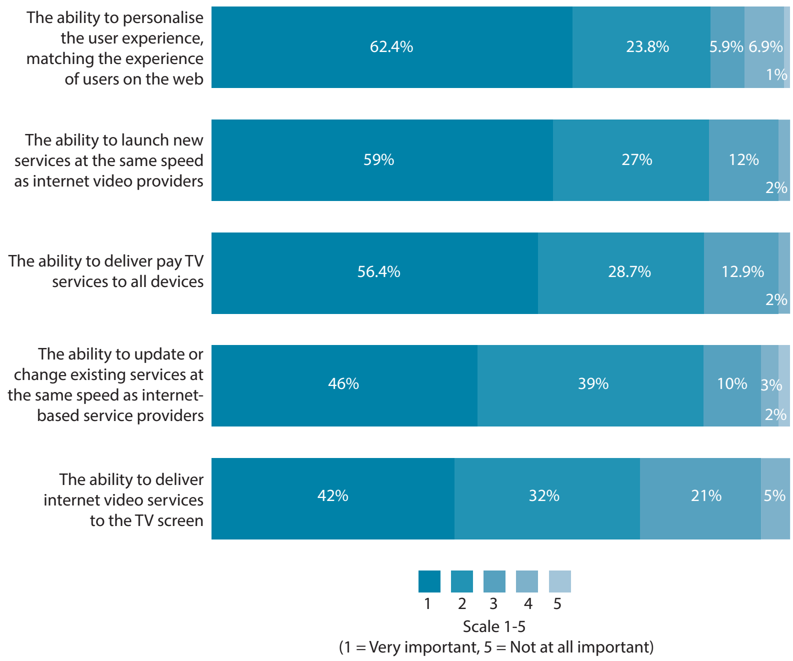
Over three in five respondents gave the ability to personalise in the same way as web services the maximum possible rating for importance, with a further 24% giving it the second highest possible rating. Also extremely important to survey respondents is the ability to launch new services at the same speed as internet video providers. Three in five respondents gave this the highest possible rating with a further 27% giving it the second-highest possible rating.

The third area prioritised by respondents is the ability to deliver pay TV services to all devices, with over 56% giving this the top score and a further 29% giving it the second highest possible score.

Marginally less important – but still regarded as extremely significant – is the ability to update or change existing services at 'web speed' and the ability to deliver internet video services to the TV screen. (fig. 7)

The importance of matching the speed and flexibility of web-based service providers is also highlighted by our survey sample's views on pay TV service providers' current ability to launch new services quickly. Asked to choose a statement that best reflected their view of the time currently taken by pay TV operators to launch a new

Fig. 7. How important do you think the following factors will be to the success of the pay TV business now and in the future?



service, over seven in 10 respondents either thought that operators are too slow to launch new services and are falling behind internet-based operators or that they are in danger of losing out to internet based operators in the future. (The majority take the slightly more optimistic of the two positions, endorsing the view that operators currently have the ability to match their customers' expectations, but that they are in danger of falling behind internet players in their ability to launch new services quickly in the future).

Only a small minority of respondents – fewer than 7% – take the view that pay TV and OTT services are fundamentally different and that pay TV customers do not respond positively to frequent changes, while fewer than 2% of respondents argued that the pay TV experience is clearly superior to OTT. (fig. 8)

In addition to highlighting the importance of speed in launching advanced services, respondents also value reach. Asked to choose one of a set of statements that best reflected their view of the importance for a pay TV operators of delivering advanced services to their entire base, nine in 10 respondents said that operators must ultimately be able to deliver a complete portfolio to all their subscribers. Of these, just over half said it is important for pay TV operators to deliver the complete portfolio of services to all subscribers in the shortest

Fig. 8. Are pay TV operators fast enough to launch new services compared with OTT providers?

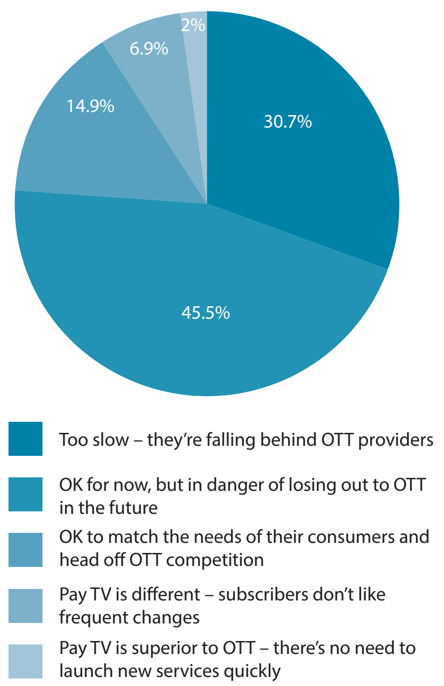
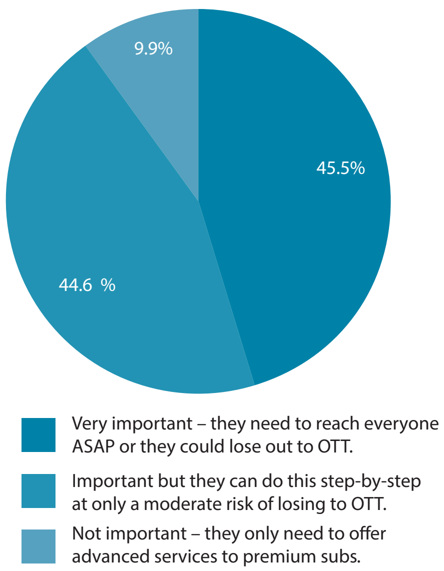


Fig. 9. How important is it to deliver advanced TV services to a pay TV operator's entire subscriber base?



possible time, while the remainder said that operators can afford to deliver advanced services to their entire base in a measured, step-by-step way with only a modest risk of losing some customers to OTT competitors.

Only one in 10 respondents endorsed the view that operators can afford to limit the availability of advanced services to a small tier of their subscribers who are willing to pay a premium for the privilege of receiving them. (fig. 9)

Reach of services and cloud challenges

While respondents clearly believe it is important (in theory) to be able to deliver advanced services such as DVR, video-on-demand, interactive programme guides and OTT video to as high a number of their customers as possible, the survey results suggest that many are struggling to achieve this in practice.

Asked what proportion of their customer base they estimate to be technically capable of receiving a range of advanced TV services, respondents gave a wide spread of responses. The greatest reach was achieved for the interactive programme guide, which close to a third of respondents said was available to over 90% of their base. Video-on-demand is also widely available, with one in four respondents saying it is available to over 90% and a further 19% saying it is available to between 70-90% of their base. OTT services delivered via a set-top box, and DVR services (whether via a set-top box or the cloud) are available to smaller overall proportions of users, according to our sample's estimates. Fewer than half of our respondents claim that OTT video is available via a set-top to over half of their customer base. Set-top-based DVR services are available to over 90% of customers for only 16% of respondents, but cloud or network-based DVR is only available to 90% of users for 8% of respondents. (fig. 10)

Actual use of such services by customers is somewhat more restricted. Only 16% of respondents believe that the interactive programme guide – the most widely available advanced TV service – is used by over 90% of their customers. In each category of service listed in the previous question, respondents believe that the proportion of customers actually using the service is significantly less than the technical reach of those services. (fig. 11)

Fig. 10. What proportion of your subscriber base do you estimate is currently technically capable of receiving the following advanced TV services?

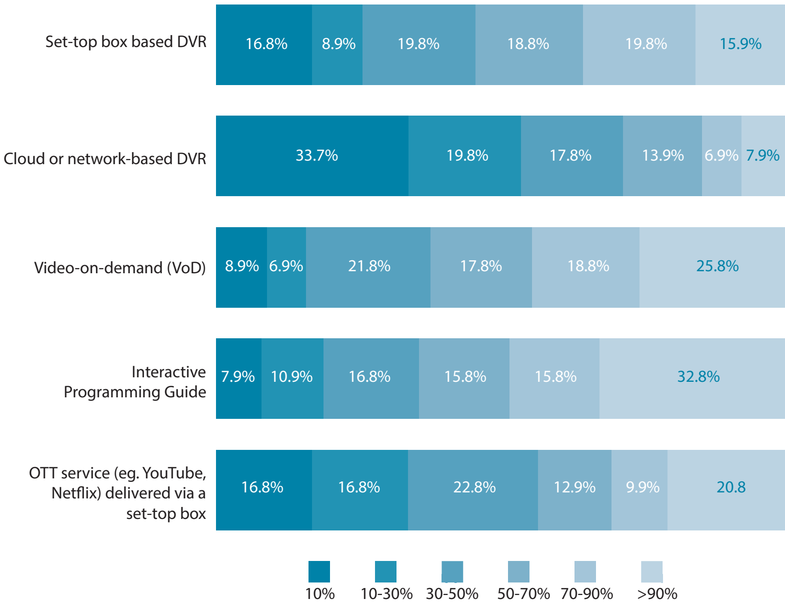
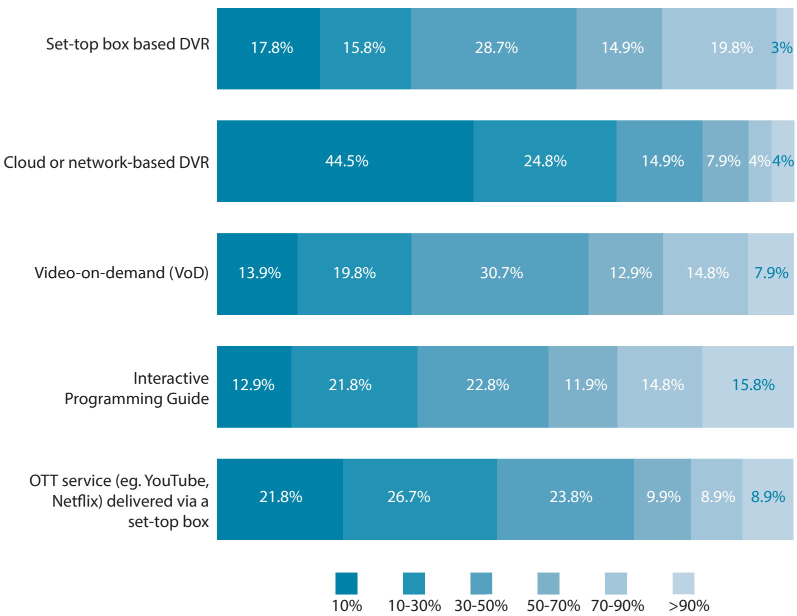


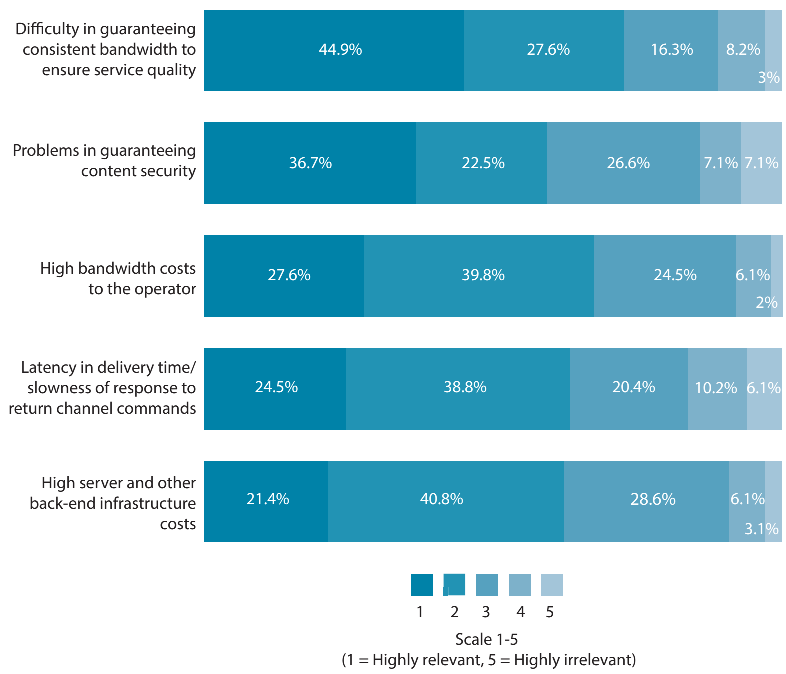
Fig. 11. What proportion of your subscriber base do you estimate uses the following advanced TV services?



Operators clearly want to extend the reach of advanced services as widely as possible, but face challenges in doing so. While there is a high level of awareness of and enthusiasm for cloud technology as a way to improve the overall TV experience, our survey sample also perceives there to be a number of challenges facing those implementing cloud based TV services.

Asked to rate a series of potential obstacles to delivering advanced TV services via the cloud on a scale of one to five, respondents identified difficulty in guaranteeing consistent bandwidth to ensure service quality as a key problem, along with problems in guaranteeing content security. Second-ranked challenges include high bandwidth costs to the operator, high server and back-end infrastructure costs and, to a somewhat lesser extent, latency in delivery and slowness of response to commands. (fig.12)

Fig. 12. What do you think is the biggest obstacle or disadvantage to delivering the advanced TV services in Fig. 11 from the cloud rather than via a set-top box?



Conclusion

TV operators have a strong awareness of cloud technology and clear views on the benefits it confers, but they don't view it as a panacea. They want to use cloud TV technology for two main purposes: to improve the user experience to match that increasingly offered by OTT providers, and to make their own operations work more efficiently. They are less interested in using the cloud to open up their TV platforms to a much wider range of content that is available on the open web.

Taking the user experience first, operators want to deliver greater personalisation and to integrate TV, multiscreen usage and OTT video in a single unified guide. They see the threat presented by OTT providers as being primarily about their ability to offer a superior user experience and they want the tools to combat this and deliver something that has an equal or greater appeal to consumers. This is not primarily about extending the range of content available or opening up existing platforms to a broad range of third-party suppliers – operators do not see the cloud as an alternative to a content strategy. Rather, it is about matching the speed of innovation of web-based providers.

In terms of making their operations work more efficiently, operators believe, on the whole, that many if not most TV services will ultimately migrate to the cloud. Most do not currently see cloud TV technology as an alternative to deploying hardware in the home, but rather as a complement to it. However, they seem to understand that the cloud provides benefits in terms of the efficiencies it delivers and will look to migrate – to take one key example – DVR services to the cloud over time rather than to deploy new hard-drive enabled boxes in the home.

Very importantly, operators also want to extend the reach of advanced services to as many of their subscribers as they can reach, and the cloud can provide clear advantages here, for example by enabling the delivery of advanced user guides and on-demand offerings to legacy devices.

In summary, operators do not see cloud TV as an end in itself, but rather as a means by which they can match the ever-evolving user experience, flexibility and universal reach of OTT services.

This survey was produced in association with ActiveVideo

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