The OTT TV Experience

Produced by

DIGITAL TV EUROPE

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Intraway
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Contents

Introduction

OTT TV is now a ubiquitous feature of the video landscape. Pay TV operators with their own delivery infrastructure have launched OTT services to complement their mainstream offerings and have used OTT delivery as a technique to enable their subscribers to view content on tablets, smartphones and other devices.

At the same time, standalone OTT services, spearheaded by Netflix, have gained traction with users. Netflix and other OTT providers have also sought to team up with TV platform operators, in particular to deliver their offerings to the TV screen with a Quality of Service that can best be facilitated by an infrastructure-based service provider.

As consumers get more used to using TV everywhere services and sign up in increasing numbers for standalone OTT offerings, they are becoming more demanding and more aware of the experience on offer from OTT. Meanwhile, in a crowded OTT environment, providers of services are seeking to identify the best way to differentiate their offerings, including via Quality of Experience.

DTVE recently surveyed over 130 senior industry figures from 50 countries, including cable and telecom pay TV operators, OTT service providers and content providers, to share their views on the success factors for OTT, the relative importance of Quality of Experience and the emerging relationship between OTT providers and infrastructure-based internet service providers (ISPs).

The survey revealed that:

- Video quality features high in the list of factors that determine the success or failure of OTT services, including the absence of buffering, good video start times and decent-quality resolution. Also important is the overall experience embodying content discovery and navigation. Quality is rated marginally more highly than the content available via OTT and considerably higher than contract terms offered to subscribers as a factor that determines success or failure. Other factors that are important in determining the quality of the viewer experience include the device chosen for playback and the network over which content is delivered. The survey revealed that smartphones, tablets and operator-supplied set-top boxes were rated highest for quality, with service provider-supported WiFi the preferred delivery network in the home.

- Many OTT service providers have partnership agreements in place with infrastructure-based ISPs that are designed to improve the quality of the viewer experience, and a significant number of ISPs have opened up their networks to partnership deals with third-party OTT providers. OTT providers and ISPs are also employing a range of techniques to measure Quality of Experience of OTT services on networks. Respondents in fact showed a high level of consensus that video services should be treated fairly and should not be privileged on the basis of the kind of commercial deals they can strike with infrastructure operators. However, they are also in agreement that video is a special case as a category of data.

- The picture of how well ISPs support the activation and provisioning of OTT services on their networks is mixed. In general, support for services delivered to the TV via a device controlled by the operator is higher than for services delivered from the cloud, while support for premium services is higher than for low-cost or free offerings. ISPs have an interest in offering decent support because the Quality of Experience of OTT services is an increasingly important determinant of call volumes to their customer care centres.

Factors for OTT success

OTT services embraces a wide range of activity, including offering web-based services direct to consumers and offering IP-based video delivery to tablets and smartphones as part of a wider pay TV or broadband subscription

Cable and telecom operators are relatively highly represented in our survey, so TV everywhere services that are designed to complement a traditional pay TV offering feature high in the list of OTT services offered by our sample. Over 38% of respondents say they offer this type of service on their networks.

However the range of OTT services provided by our survey respondents is varied. Over 30% say they offer a standalone subscription video-on-demand service, while 27% say they offer OTT live subscription video. A further 25% say they offer transactional video-on-demand on a standalone basis. Some 18% offer free video-on-demand with 10% offering free live OTT video.

Some 21% of respondents provide infrastructure over which third-party OTT video companies can deliver their own services, with a similar number – 19% – providing the infrastructure for third-party OTT providers as well as providing their own OTT or TV everywhere services. (fig.1)

When it comes to identifying the key factors that determine the success or failure of an OTT service, the survey sample clearly indicates that video quality and the quality of the viewing experience together are of prime importance.

Asked to rate 12 different factors for their relative importance in determining how successful a service will be, our sample consistently gives a higher score to factors related to the viewing experience directly than to contract terms and the type of content offered on the service.

Of the 12 success factors put to respondents, the highest average weighted score for importance went to 'delivering consistent viewing quality without buffering, pixellation or freezing' of the image. This was rated as 'very important' by 85% of respondents and moderately important by 14%. The second highest rated factor was 'enabling fast video start up times with minimal buffering', rated very important by 76% and moderately important by 21%, Also rated extremely highly is 'providing video at a resolution and picture quality that matches that available via broadcast TV', which was rated very important by 71% and moderately important by 27%.

Beyond the raw experience of viewing video of decent quality, 'providing a compelling user experience including effective content discovery tools' also rated highly, with 69% viewing it as very important and 25% as moderately important.

The survey responses indicated that differentiating on quality of experience could be more fruitful than looking to offer something unique in content. 'Providing content that is different from that available elsewhere' is seen as very important by 54% of respondents and moderately important by 37%, while close to 10% either view it as not very important or not at all important. 'Providing content that matches that available from other sources at a competitive price' rates similarly.

Factors such as ease of sign-on and activation are rated similarly to the content mix. 'Providing easy sign-on and activation of the service' is seen as very important by 64% and moderately important by 31%, while providing single sign-on and activation of the service across multiple devices is seen as very important by 57%. Providing easy to use billing mechanisms is seen as very important by 49% – a similar rating to that given to 'providing customer care that can successfully address OTT related concerns in a timely fashion'.

Of much less importance in the eyes of respondents are the contract terms under which a service is offered to end users. Only 35% rate 'providing flexible sign-on terms such as no ongoing contract and easy sign off' as very important. (However, on the contrary, services that require long-term

Fig. 1. Does your organization offer the following services?

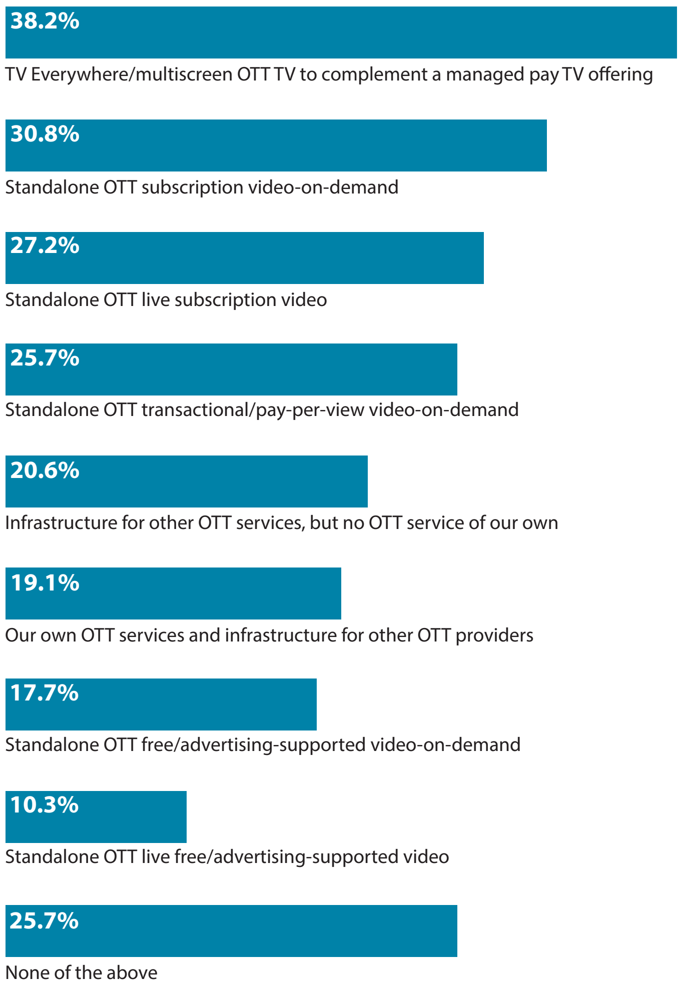
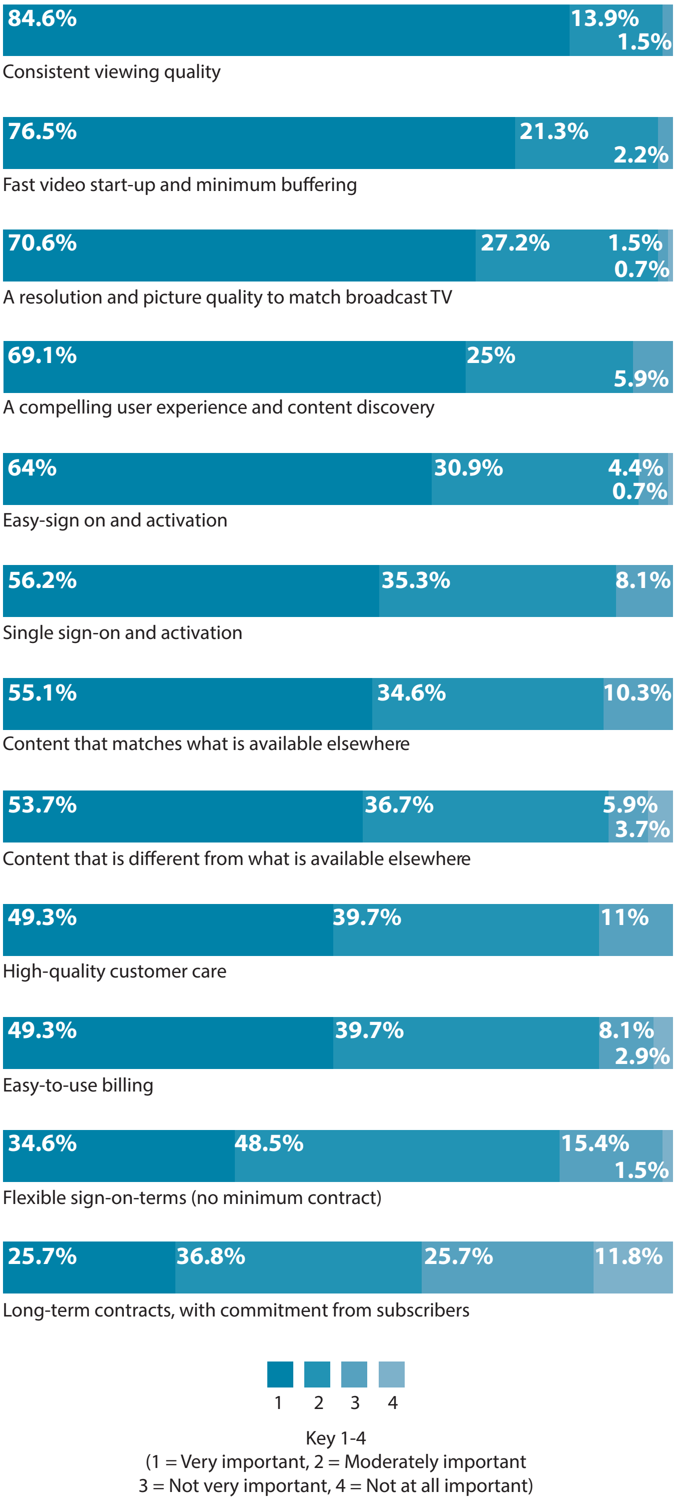


Fig. 2. How important are the following factors in delivering a successful OTT TV service?



commitments are clearly not perceived to be highly regarded – only 26% say that long term commitments and long minimum contract periods are very important in determining the success of a service). (fig.2)

Playback devices

While the features and quality of experience provided by service providers is clearly important in determining whether that service succeeds or fails, not every element that shapes the consumer experience is dependent on the provider. The quality of individual playback devices is also important, and OTT operators' perceptions about which devices are most popular will shape their other choices to some degree.

We therefore asked respondents to rate the most popular devices based on their perception of how frequently customer choose them to watch an OTT service.

According to our survey sample, the most widely used devices to view OTT content are smartphones and tablets, with iOS and Android smartphones and tablets rated broadly equal in terms of importance.

The next most-frequently used devices to view OTT content, in the view of our sample, are internet-connected set-top boxes provided by ISPs and pay TV service providers. The operator-supplied device is seen as more widely used than consumer electronics streaming media devices such as Chromecast, Roku, Apple TV and Amazon Fire TV, which are given an equal rating to internet-connected smart TVs.

The least-used devices for viewing OTT content, in the view of our survey sample, are game consoles, with fully 56% of respondents believing these are either not used very often or never used. (fig. 3)

Asked to rate the quality of viewing experience of OTT content on the same categories of devices in different viewing environments, iOS smartphones and tablets accessed via WiFi in the home scored highest, with 60% saying that the viewing experience is 'very good' and a further 37% saying it is moderately good.

Android smartphones and tablets via WiFi in the home come next, with 50% rating the performance of these are very good and a further 44% rating them as moderately good.

Internet-connected set-tops provided by a pay TV operator or ISP also scored high for quality of experience among our sample, just ahead of retails streaming media devices such as Apple TV and internet-connected smart TVs.

Smartphones and tablets accessed outside the home via mobile networks were rated less highly, with Apple devices scoring better than Android in this instance. Some 34% of respondents though iOS smartphones and tablets delivered a very good experience with 53% saying they delivered

Fig. 3. How often do customers choose these devices to view OTT services?

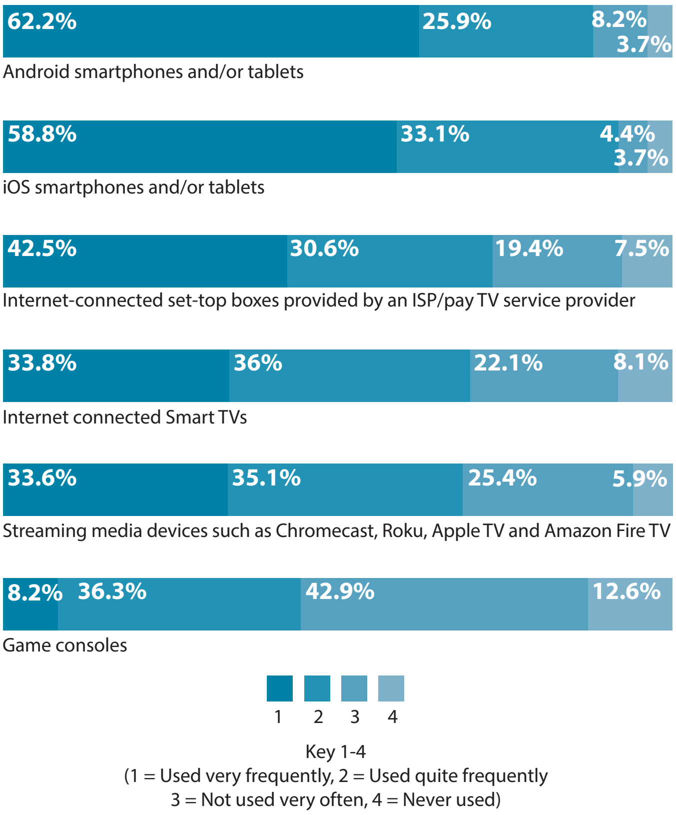
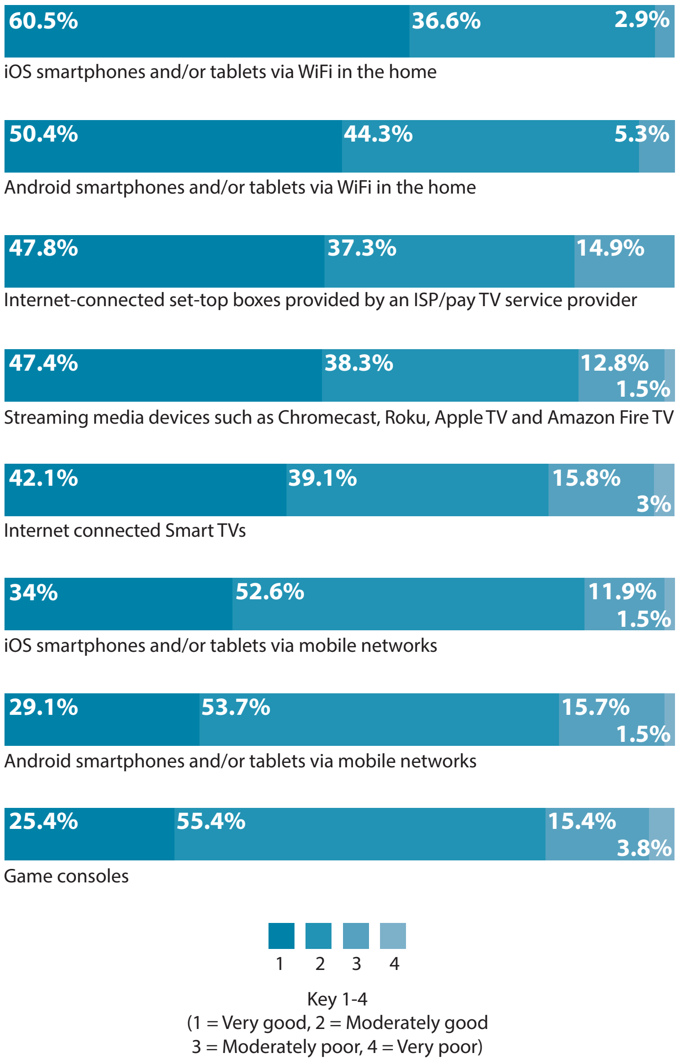


Fig. 4. How do you rate the quality of experience of viewing OTT video services over the following devices?



a moderately good experience. For Android devices the equivalent figures were 29% and 54%.

Game consoles came bottom of the league, with only 25% rating these as very good. (fig.4)

Smartphones and tablets are clearly seen as the favoured devices for viewing OTT content. However, if views of respondents about devices demonstrates anything, it is, not unexpectedly, that playback involving the active participation of the fixed-line service provider in the delivery chain is desirable. WiFi is clearly better than mobile, and service-provider-managed set-top boxes are viewed positively.

Third-party services and the network

Our survey highlights the importance of Quality of Experience in ensuring the success of OTT services. What then is the role of the infrastructure-based service provider or pay TV operator in delivering that Quality of Experience?

In the case of service owned and operated by the service provider directly, the responsibility and the benefit – in terms of attracting subscribers and ensuring their loyalty – is clear.

In addition to offering their own wholly-owned services, operators' networks are also used by third-party OTT providers to reach their end users. Some of these providers may have formal partnerships with service providers relating to the presentation of their services and the quality of service with which they are provided. Others may not.

We asked our survey sample to provide details of their relationship with third-party OTT services (in the case of infrastructure-based operators) or with infrastructure-based operators (in the case of third-party OTT services).

Of those for whom the question was relevant, the biggest proportion – 24% – identified as OTT service providers that have a commercial or marketing relationship in place with one or more ISPs. The next biggest group – 21% – identified as ISPs that provide technical distribution to OTT services and are also involved in commercial or marketing partnerships with one or more third-party OTT providers, but don't provide OTT content themselves. Some 17% of respondents identified as ISPs that provide technical support and have marketing or commercial relationships in place with third-party OTT companies, but also provide their own OTT content.

Of the remainder, 15% identified as OTT providers without any commercial or marketing relationship with an ISP. Some 13% identified as ISPs that provided technical distribution for OTT services but without marketing or commercial deals in place, but which also provide their own content. A further 9% are have the same relationship with third-party OTT providers but do not provide their own content. (fig.5)

We also asked survey respondents to identify the techniques they employ to measure the quality of service of OTT services delivered across networks that are not directly controlled by the provider.

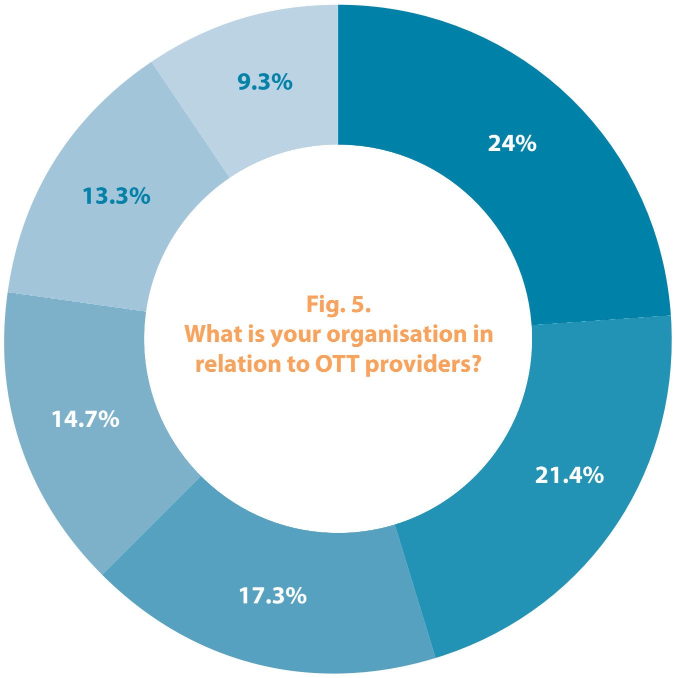


Fig. 5.
What is your organisation in relation to OTT providers?

- An OTT service provider that has a commercial/marketing relationship in place with one or more ISPs
- An ISP that provides technical distribution to OTT services, and is also involved in commercial/marketing partnerships with one or more third-party OTT providers but doesn't offer its own content
- An ISP that provides technical distribution to OTT Services, provides its own content and is also involved in commercial/marketing partnerships with one or more third-party OTT providers
- An OTT service provider that has no commercial/marketing relationship with any ISP
- An internet service provider (ISP) that provides technical distribution to OTT services and provides its own content but without a commercial/marketing partnership with third-party OTT providers
- An ISP that provides technical distribution to OTT services but without a commercial/marketing partnership with third-party OTT providers and it doesn't offer its own content

Of those for whom the question was relevant, two thirds said that they monitor their own OTT platform.

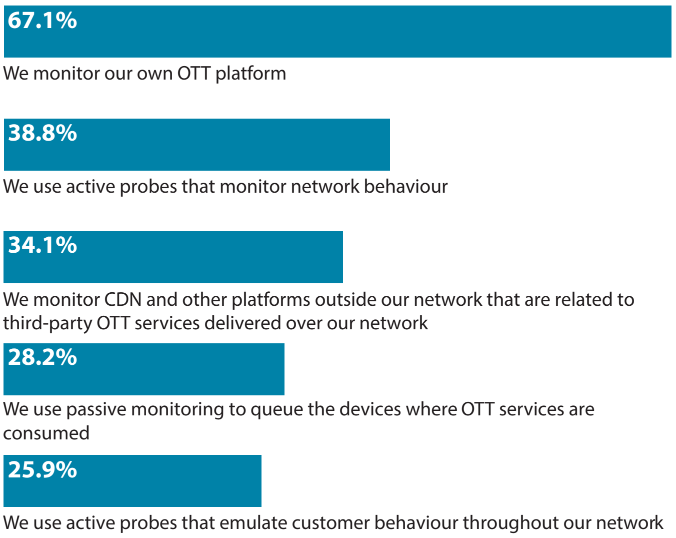
Thirty-nine per cent said that they use active probes that monitor network behaviour. Some 34% monitor CDN and other platforms outside their own network that are related to third-party OTT services delivered over their network.

Somewhat less popular but still widely employed – used by 28% of respondents for whom the question was relevant – is passive monitoring to queue the devices where OTT services are consumed, and the use of active probes that emulate customer behaviour throughout the network, used by 22%. (fig.6)

Quality of Experience

The relationship between ISPs and third-party-owned and operated OTT services is a highly charged one, bringing into play the issue of net neutrality and how much it is permissible to prioritise certain service

Fig 6. How do you measure the quality of experience of viewers of third-party OTT services on your network?



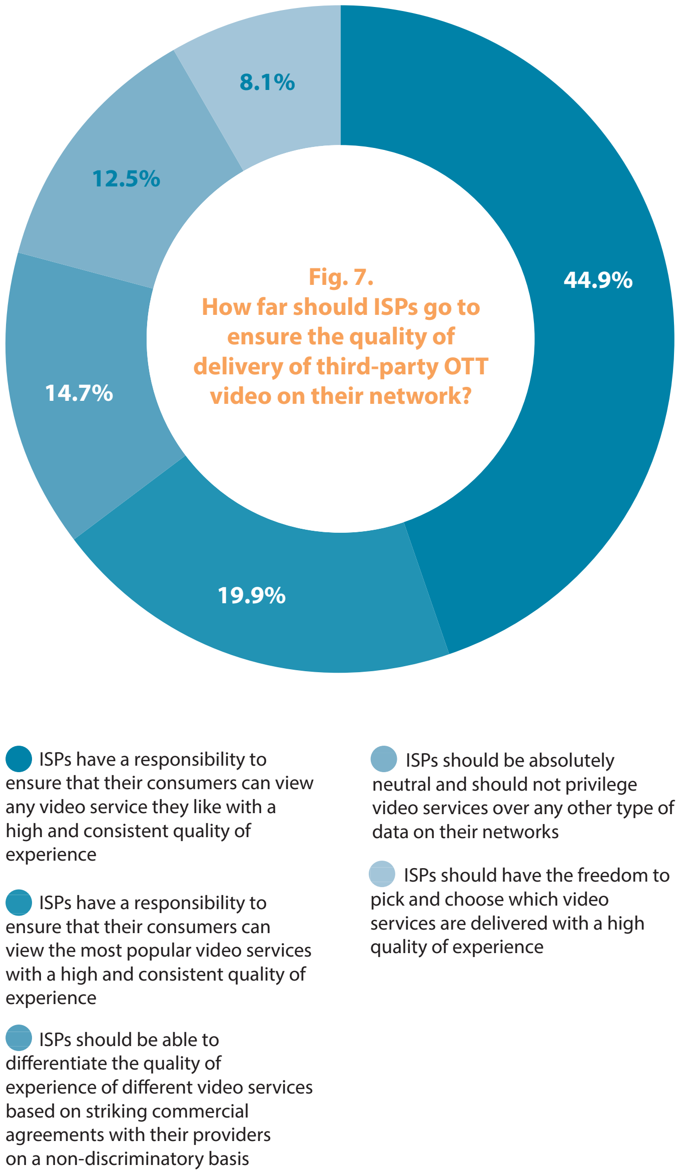


Fig. 7. How far should ISPs go to ensure the quality of delivery of third-party OTT video on their network?

categories because they require a higher degree of Quality of Service than others.

Quizzed on this, our survey sample showed a high level of consensus that video services should be treated equally fairly and should not be privileged on the basis of what kind of commercial deals they can strike with infrastructure operators. However, they also believe that video as a category is deserving of special treatment vis à vis other forms of internet traffic that may not be as sensitive to latency and the availability of bandwidth.

Almost half of respondents – 45% – endorsed the view that ISPs have a responsibility to ensure that their subscribers can view any video service they like with a high and consistent Quality of Experience. A further 20% endorsed the slightly more nuanced position that ISPs have a responsibility to ensure that consumers can view the most popular video services with a high and consistent Quality of Experience, meaning that close to two thirds of respondents take the view that operators should not differentiate between their own and third-party services, and should provide a decent level of Quality of Experience across both.

A smaller group of respondents – 15% – believe that ISPs should be able to differentiate the Quality of Experience of different video services based on their ability to strike commercial agreements with their providers on a non-discriminatory basis, while a minority – 8% – go further by saying that ISPs should have absolute freedom to pick and choose which video services are delivered with a high quality of service. A further 12.5% believe that ISPs should be absolutely neutral and should not privilege video services over any other type of data on their networks. (fig.7)

OTT services are many and varied. Some are highly popular and others are distinctly of minority interest. The quality of video can vary irrespective of the bandwidth available, and a further distinction can be made between paid-for premium services and free-to-view offerings, with the inference sometimes drawn that viewers are often willing to set a lower bar in terms of Quality of Experience for the latter.

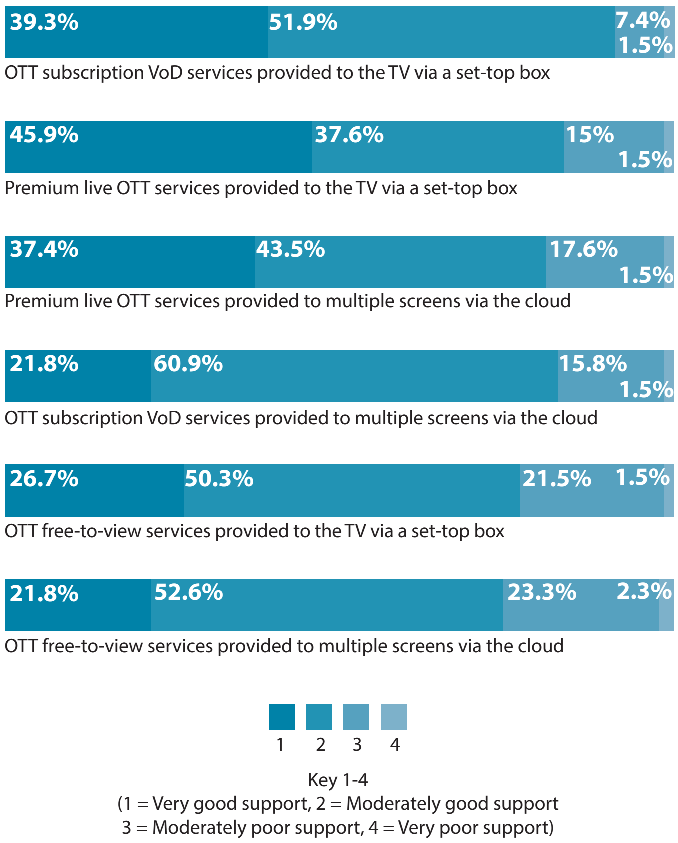
We also asked our survey respondents to rate how well they think the Quality of Experience provided by ISPs is in relation to a variety of different types of OTT service.

The results show that our sample believes services delivered via set-top boxes are delivered with a higher Quality of Experience than those delivered to consumer devices, and premium services – especially live services – are delivered with a higher Quality of Experience than free ones. OTT subscription VoD services delivered to the TV via a set-top box and premium live OTT services delivered in the same way scored equally highly in terms of the Quality of Experience provided, with up to 46% of respondents believing that ISPs provided very good support for premium live OTT services provided in this way. A further 38% believe they provide moderately good support. (In the case of SVoD, 40% said ISPs provide very good support and 52% said they provide moderately good support).

ISPs also provide a high level of Quality of Experience for premium live delivered to multiple screens via the cloud, and good support for SVoD services delivered in this way.

Slightly less favoured – but still with decent Quality of Experience – are free-to-view services delivered to set-tops. The least favoured in terms of their perceived Quality of Experience are free services delivered via the cloud. However, even in this case, 22% believe they provide very good support and 53% believe they provide moderately good support, so the overall picture is quite favourable. (fig.8)

Fig. 8. How good do you think the quality of experience provided by ISPs is in support of the following types of OTT video services on their networks?



Support for third-party business models

If ISPs are perceived to supply a decent quality of experience in relation to the playback of content – particularly for premium services delivered to set-tops – views of their support for activation and provisioning of services reveals a more mixed picture.

Asked to endorse one of five statements that best expresses their view, only 21% of respondents say that ISPs provide very high-quality support for services from OTT partners. A further 35% say they provide moderately good support, while 30% say they provide mixed support and take the view that the picture is too vary to make a generalised comment.

Some 10% say that ISPs provide quite a poor level of support for activation and provisioning of services, while just over 5% say the generally provide an extremely poor level of support. (fig.9)

Broken down by type of service, the picture is more positive, but there is a clear distinction between perceptions about support for activation and provisioning of services delivered to the TV via a set-top box and those delivered primarily to other screens via the cloud.

ISPs rate quite highly in the view of our survey sample for their support for activation and provisioning of SVoD services delivered via set-tops, with

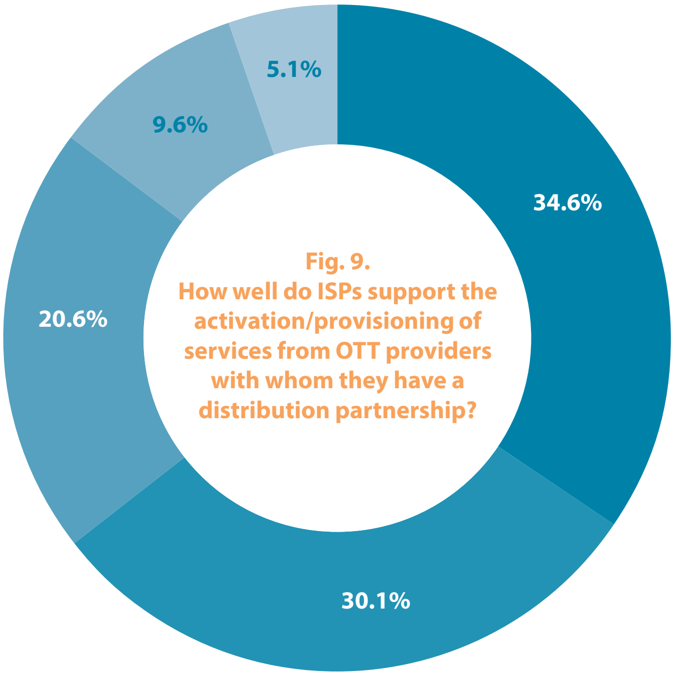
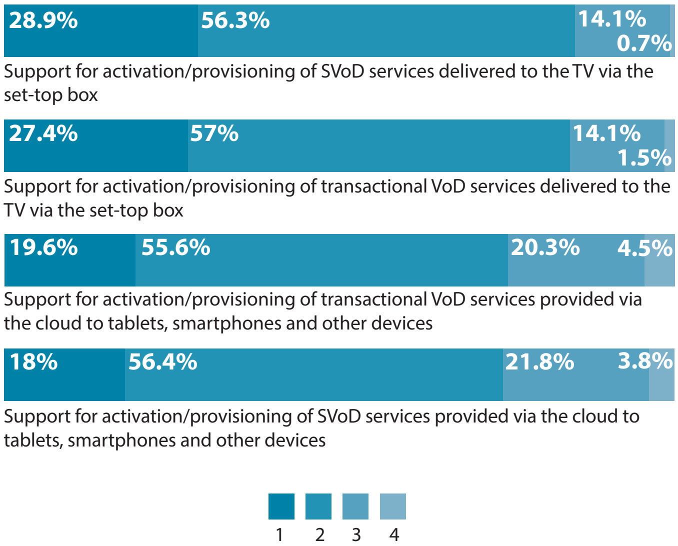


Fig. 9.
How well do ISPs support the activation/provisioning of services from OTT providers with whom they have a distribution partnership?

- ISPs provide moderately good support for the activation/provisioning of services from OTT partners delivering services on their networks
- ISPs provide mixed support for the activation/provisioning of services from OTT partners delivering services on their networks – the picture is too varied to make a generalised statement
- ISPs provide very high-quality support for the activation/provisioning of services from OTT partners delivering services on their networks
- ISPs provide quite a poor level of support for the activation/provisioning of services from OTT partners delivering services on their networks
- ISPs provide an extremely poor level of support for the activation/provisioning of services from OTT partners delivering services on their networks

Fig. 10. How well do ISPs support activation/provisioning of the following types of OTT services?



Key 1-4
(1 = Very good support, 2 = Moderately good support
3 = Moderately poor support, 4 = Very poor support)

29% saying they provide very good support and 56% saying they provide moderately good support. Perceptions of support for transactional VoD services are almost as high, with 27% saying ISPs provide very good support and 57% saying they provide moderately good support.

In the case of support for activation and provisioning of services delivered via the cloud to tablets, smartphones and other devices, the picture is more mixed. Some 18% say that support for SVoD services is very good, with 56% saying support is moderately good. However 26% say that support is ether moderately poor or very poor. In the case of transactional services, 20% say that support is very good, 56% say it is moderately good and 25% say it is either moderately poor or very poor. (fig.10)

OTT, service providers and customer care

The importance accorded to video quality for premium and free services over managed and unmanaged networks, and to efficient activation and provisioning of services, is demonstrated by responses to the final question we put to the survey sample.

We asked respondents to rate a range of potential motivations to call ISP customer care centres for their importance, including issues specific to various types of OTT service as well as traditional pay TV services managed by the operator.

Quality of experience for pay services – whether managed by the operator or provided by OTT companies – rated as a high cause of customer care calls in the view of our survey respondents. Problems with video quality or quality of experience of pay TV services provided by the ISP itself rated very highly, with 54% saying this has a very significant impact on call volumes and 34% saying it has a moderately significant impact.

In the case of paid for OTT services, however, the impact was equally great, with 54% saying it has a very significant impact and 33% saying it has a moderately significant impact.

The next most significant cause of calls in the view of respondents is issues related to activation and billing – particularly in this case activation and billing of OTT services that are bundled with services provided by the ISP itself. In this case 41% thought the impact on calls would be very significant and the same number again thought it would be moderately significant. In the case of activation and billing of pay TV services provided by the ISP, the figures were similar.

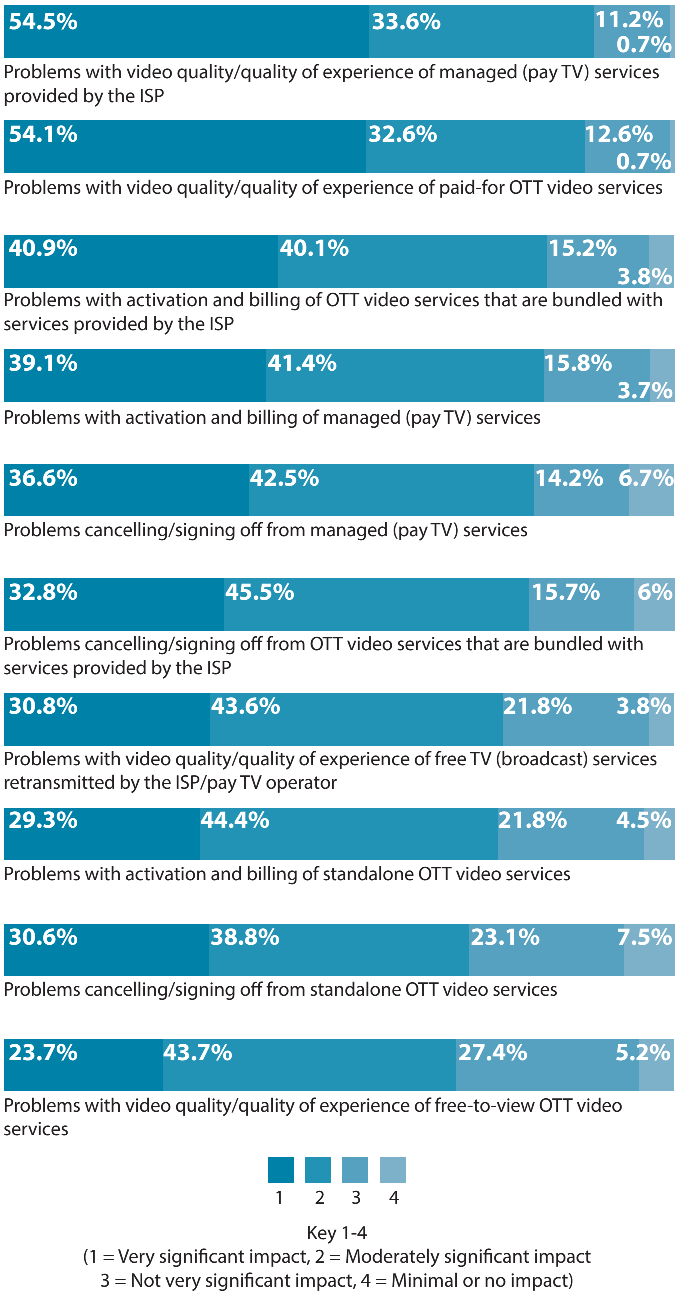
Problems with signing off, both in relation to pay TV services and bundled OTT services, are also rated as being significant for call volumes.

Issues related to signing on and off premium services rated slightly higher in terms of their impact on call volumes than problems with video quality or quality of experience of free broadcast services retransmitted by the ISP or pay TV operator.

Problems with activation and billing, and cancelling or signing off, of standalone OTT services, rates lower among the factors listed in terms of their impact on call volumes, while issues related to video quality of free-to-view OTT services rates lowest of all in terms of its impact. (However, this is all relative: even in the case of video quality for free OTT services, almost 68% believe the impact on call volumes will be either very significant or moderately significant.)

The results indicate that, in the view of our survey respondents at least, video quality of premium services – whether directly offered by the ISP or OTT services that are bundled in some way with the main offering – is the most important reason for call volumes, followed by activation, billing and cancellation issues related to these services. Standalone OTT services are less important, but only comparatively so. Increasingly it would seem, there is a perception that ISPs' customers are turning to their service providers' call centres when they experience problems with OTT services delivered over their network. (fig.11)

Fig. 11. How big an impact do the following have on the volume of calls to ISPs' call centres and ISP operating costs?



Conclusion

This survey highlights the importance of Quality of Experience in all its aspects to OTT. As consumers' expectations – particularly for premium services – rise, and viewing of longer form content migrates to the big TV screen, OTT viewers are becoming less tolerant of buffering, low-quality resolution, slow start times and poor activation and provisioning of services. From our survey responses, video quality in particular is seen as increasingly important in determining whether OTT services succeed or fail. It is therefore of paramount importance for ISPs to be aware of Quality of Experience exactly as it is perceived by end users of the service.

In order to ensure that services deliver a high Quality of Experience to consumers, it is in the interest of OTT providers to team up with ISPs, including those that offer their own TV services, as these have the infrastructure in place to provide the necessary support. That support can include not only sufficient bandwidth to ensure video quality but support for activation and provisioning of services, and content discovery and navigation tools.

It is also in the interest of ISPs to team up with OTT providers, not only to enhance the range of content they offer but because their own subscribers are likely to hold them responsible for the quality of video services delivered over their networks. Poor quality OTT video means a higher volume of calls to customers care centres, leading to additional costs and lower customer satisfaction.

While this mutual interest is evident to many industry participants, the exact nature of the partnerships and how these play into the vexed question of net neutrality remains subject to clarification. There is a broad consensus that ISPs should offer non-discriminatory access to third-party OTT providers, but it remains to be seen whether this can be based on commercial deals between OTT companies and ISPs, and whether ISPs can provide privileged access to certain video services.

On the whole, however, the case for cooperation between ISPs and OTT content providers is clear. Our survey shows that cooperation along these lines is happening, but there remains room for improvement, particularly in monitoring the customer experience.

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