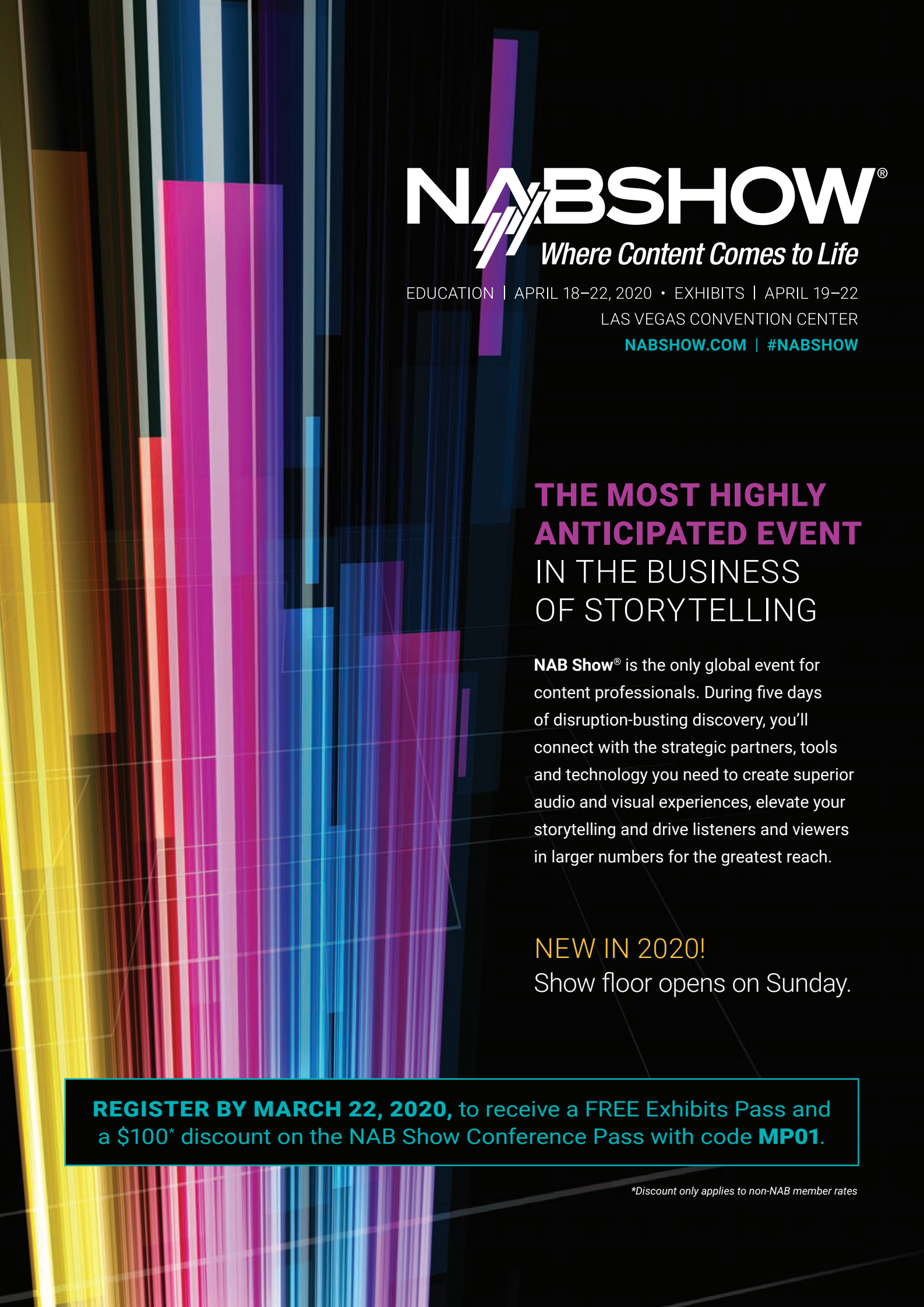
Insight on the global video delivery business

Digital TV Europe

January/February 2020

Digital TV landscape | IP Video | Advanced Advertising | Thematic streaming | TV operating systems | WiFi | Video QoE

INDUSTRY SURVEY 2020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This issue

Editor's note

Streams of thought

Digital TV Europe's fifth annual survey's unifying theme is streaming – its impact on the video business, its ongoing evolution and challenges and opportunities as the field becomes more crowded.

Streaming's seemingly unstoppable progress – marked by its overtaking of traditional pay TV in terms of subscriber numbers, though not yet in terms of revenues – has been the biggest media story for a while now. But last year marked a step change, with launches and announcements of future plans by the big studios, moves by broadcasters to build streaming offerings and an acceleration in the shift of consumption patterns that is driving all of this.

Several hundred industry executives from 67 countries responded to our request to share their views on this year's seven topic areas. Respondents were surveyed online between December and January.

This year's topics are: our review of the overall digital TV landscape; the migration of video distribution to IP; advanced advertising – a key way to make streaming work; the opportunity for niche or thematic streaming services; TV operating systems and the evolution of consumer premises equipment strategies by service providers; the role of WiFi within the offerings of service providers and the importance of Video Quality of Experience to streaming providers.

The results once again provide a unique snapshot of executive views of the challenges and opportunities facing the video industry.

Stuart Thomson, editor

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Informa Tech, Blue Fin Building
110 Southwark Street, London SE1 0TA
Website: www.digitaltveurope.com

Editor Stuart Thomson
Tel: +44 (0) 20 7017 5314
stuart.thomson@informa.com

Deputy Editor Jonathan Easton
Tel: +44 (0) 20 7017 5390
jonathan.easton@informa.com

Commercial Director Patricia Arescy
Tel: +44 (0) 20 7017 5320
patricia.arescy@informa.com

Art Director Matthew Humberstone
Tel: +44 (0) 20 7017 5336
matthew.humberstone@informa.com

Marketing Executive Abigail Dede
Tel: +44 (0) 20 7017 6018
abigail.dede@informa.com

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The digital TV landscape

Streaming continues to dominate discussions of the evolving digital TV landscape.

Respondents to our survey believe that streaming services will enjoy strong growth, and that pay TV will either decline or, at best, only grow slowly. The success of streaming providers in capturing a growing share of the market goes hand-in-hand with an ongoing shift away from linear viewing and towards viewing on multiple devices, all of which is viewed as a positive development by our survey sample.

Technology trends that help fuel the streaming boom include the accelerating availability of bandwidth.

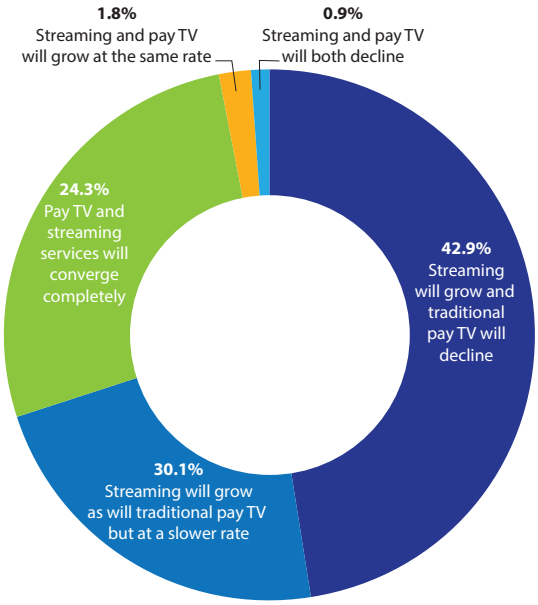
SVOD is the key business model within streaming, and Netflix remains the leading player, but the launch of new services from the likes of Disney means that the streaming space is becoming vastly more competitive.

1. How strong are the prospects for pay TV services in the next two years?

We live in the era of the streamer. Streaming services are now a presence in millions of homes that have, in the past, looked to pay TV operators to deliver entertainment services. So it comes as no surprise that our survey respondents believe that streaming services are overtaking pay TV providers as engines of growth.

Three in four respondents believe that streaming services will grow faster than pay TV over the next two years, with the bulk of the remainder taking the view that the two will converge completely, rendering any distinction between them meaningless. The biggest single group – representing 43% of the total – believe that streaming services will not only grow faster than pay TV but that traditional pay TV services will actually decline. This is more or less the same proportion that believed this in last year's survey.

Fewer than 2% of respondents believe that streaming and pay TV services will grow at more or less the same rate.



Key takeaway

Streaming services are going to grow faster than traditional pay TV services over the next two years, and many respondents believe that pay TV services will decline.

43%
believe that traditional pay TV services will decline.

2. What industry developments will have the biggest impact on the TV business?

We asked survey respondents to rate six key industry trends for their positive or negative impact on the digital TV business globally.

For our sample, the most positive trend of the six is the shift in content consumption from linear to non-linear and from TV to multiple screens. This was rated very positive or moderately positive by three in four respondents, with 44% rating it very positive.

The second most positive trend was the launch of direct-to-consumer streaming services by big media companies such as Disney or Warner Media.

In a sign that every cloud comes with a silver lining, the third most positive trend of the six was the growing prevalence of cord-cutters, cord-nevers and the trend towards à la carte and contract-free consumption of video. This was rated very or moderately positive by just over half of respondents, with a third rating it as moderately positive.

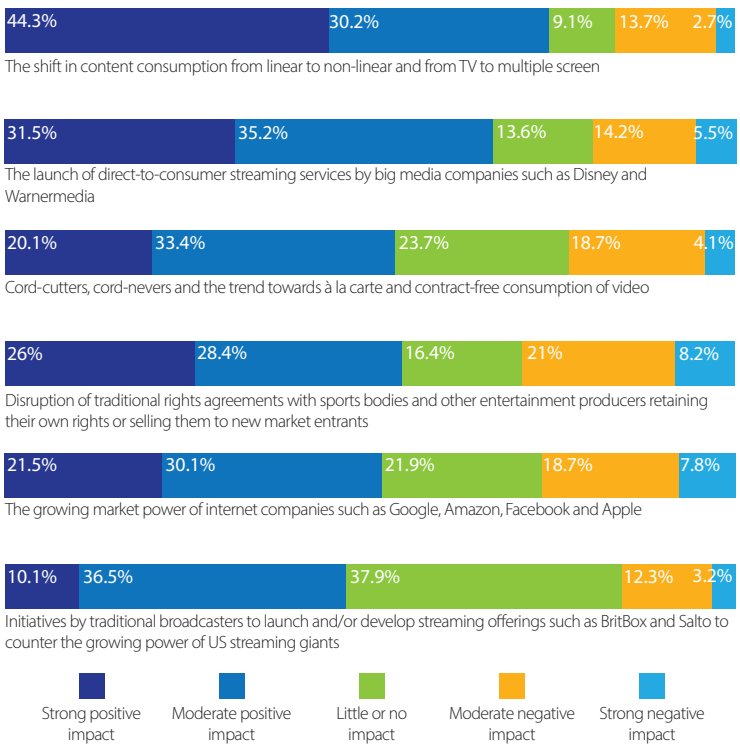
Respondents are also broadly positive about the disruptive impact of sports bodies and entertainment companies retaining their own rights or selling them to new market entrants rather than established players. However, about three in 10 respondents disagree and believe this will have a negative impact.

The growing power of companies such as Google, Amazon, Facebook and Apple is viewed positively by a narrow majority of respondents, although substantial numbers also believe this will have a neutral or negative impact.

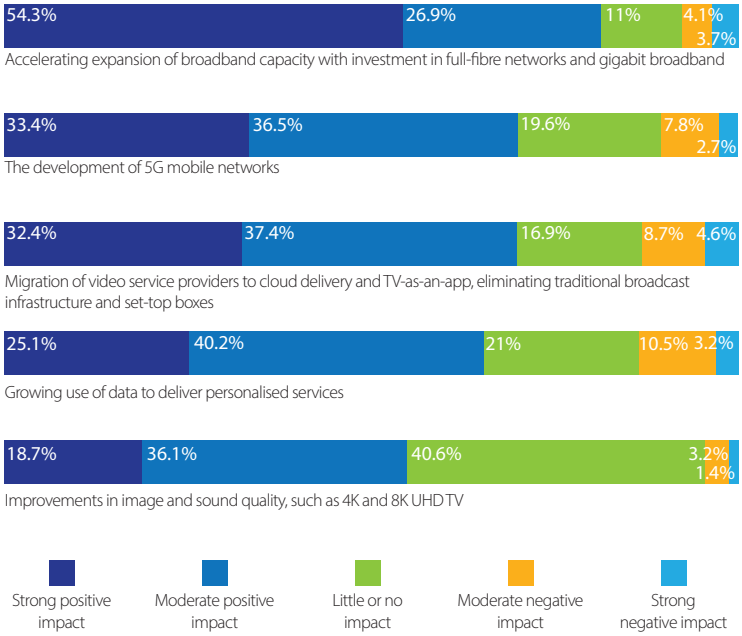
As far as initiatives by mainstream broadcasters to launch their own local streaming services – the likes of BritBox and Salto – is concerned, the largest group of respondents believe this will have little or no impact on the industry.

Key takeaway

Survey respondents believe that most of the big shifts under way in the TV business will have a broadly positive impact on balance, and the shift from linear to on-demand and from the TV to multiscreen consumption is viewed as a very positive development



3. What technology developments will have the biggest impact on the digital TV business?



We also asked respondents to rate five technology trends for their positive or negative impact on the global digital TV business over the next two years.

The most positive technology trend, in the view of our survey sample, is the accelerating expansion of broadband capacity with investment in full-fibre networks and Gigabit broadband. Bandwidth is the lifeblood of the age of streaming and over eight in 10 respondents believe this is either very positive or a moderately positive development.

Similarly, the development of 5G mobile networks is viewed positively by our survey respondents, with seven in 10 viewing this as very positive or moderately positive.

About seven in 10 respondents also view the migration of video service providers to cloud delivery and TV-as-an-app implementations, away from traditional broadcast infrastructure and set-top boxes as a positive development. There are some dissenters however, with 5% viewing this as a very negative development.

The growing use of data to deliver personalised services is also a positive development for the majority, although with the balance of opinion leaning towards 'moderately positive' rather than 'very positive'. About a third of respondents are either ambivalent or negative on data, with 14% viewing the use of data to enhance personalisation as either moderately negative or very negative.

Respondents are more sceptical about the merits of improvements image and sound quality such as 4K and 8K UHD TV, with over 40% taking the view that this will have a neutral or nugatory impact.

Key takeaway

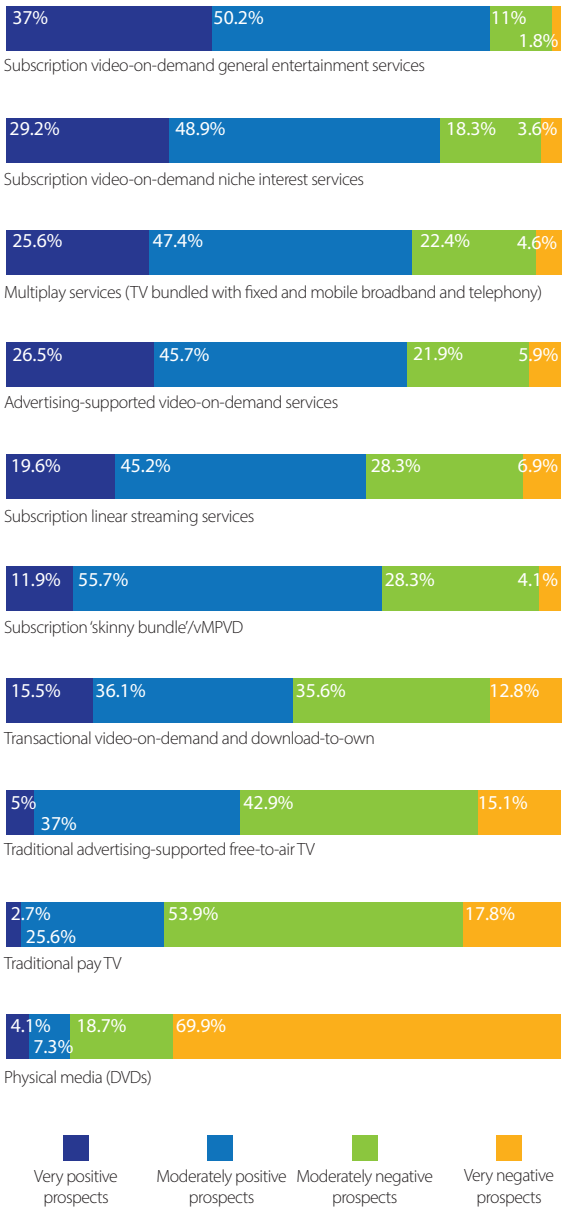
Bandwidth is the enabler of streaming video, and accelerating availability of high-bandwidth networks can only have a positive impact on the TV business.

4. Which types of services have the best growth prospects?

Survey respondents were asked to rate the growth prospects of a range of types of service offering over the next two years.

Subscription video-on-demand services will fare best, in the view of our survey sample. SVOD general entertainment services came at the top of the list, with almost nine out of 10 respondents believing they will have very positive or moderately positive prospects. SVOD niche-interest services came next, with eight out of 10 taking the view that these would enjoy very positive or moderately positive growth prospects.

Traditional service providers can take comfort from the



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Almost nine out of 10 respondents believe that SVOD general entertainment services will have very positive or moderately positive prospects. Some eight out of 10 believe that SVOD niche-interest services will enjoy very positive or moderately positive growth prospects.

fact that multiplay services – TV bundled with fixed and mobile broadband and telephony, the lifeblood of fixed-line operators – came next in the list. Multiplay was very closely followed by another streaming model on the rise, advertising-based video-on-demand.

Streaming dominates the list of service offerings with strong growth prospects. After AVOD, subscription linear streaming services and subscription 'skinny bundle' or vMPVD services came next. However, in both cases a substantial minority of respondents dissent, with around a third of the sample believing they have moderately negative or very negative growth prospects in each case.

Traditional advertising-supported free-to-air TV comes eighth out of 10 in the list, with 58% taking the view that it has moderately negative or very negative prospects. Free TV does however have the edge on traditional pay TV in the view of respondents, with three in four respondents believing the latter has moderately negative or very negative prospects.

Only physical media fares worse, with seven in 10 respondents taking the view that the DVD business has very negative growth prospects.

Key takeaway

The future belongs to streamers – and in particular to SVOD.

5. Which company had the biggest impact on the digital video business over the past year?

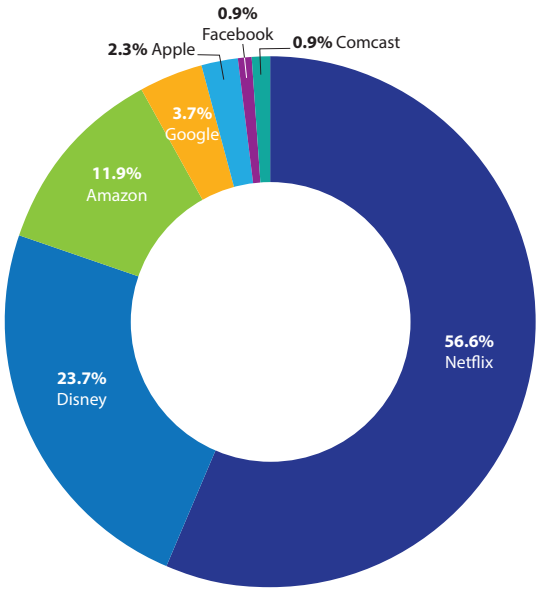
Finally, in relation to the overall digital TV landscape, we asked survey respondents to identify the company they thought had the biggest impact on the digital video distribution business over the last year from a list of eight possible candidates.

As in past years, Netflix stands apart in a class of its own here. Fifty-seven per cent of respondents believe the streaming giant had the most impact, very slightly down on the 62% who chose Netflix in the last survey.

The highest riser in our list this year was Disney, which took the number two slot. Some 24% of respondents thought Disney had the biggest impact in a year that saw it launch its streaming play, a huge rise from the 1% who chose the company last year.

Amazon dropped from second to third place. This year, only 12% of respondents thought it had the biggest impact, compared with 22% last time round.

Google came fourth with 4%, down from 9% last year, followed by Apple with 3% – a rise from 1%. Other players barely registered on the list this year. Facebook and Comcast attracted single figure votes and WarnerMedia scored zero.



Key takeaway

Netflix continues to make the weather in terms of its overall impact on the digital video business, but Disney is giving it a run for its money. Disney's gain has also been Amazon's loss, with a significant year-over-year decline despite making significant moves in entertainment and sports streaming.

In summary

Survey respondents firmly believe that streaming is eclipsing pay TV as the dominant mode of video distribution. Most survey respondents believe that streaming will grow faster than pay TV and two in five believe that pay TV will actually decline.

Most of the big changes that are taking place in the video distribution business are viewed positively, with the shift in consumption from linear to non-linear and to multiscreen viewing seen as having a very positive or moderately positive impact on the overall business.

Technology changes that benefit streamers are also viewed positively. The accelerating availability of bandwidth is seen as very positive, as is the development of 5G mobile networks.

If survey respondents are cheerleaders for streaming, within that catch-all they believe that SVOD has the strongest growth prospects. Traditional free and pay TV, on the other hand, are viewed as having negative prospects, although service providers can take comfort from the fact that the multiplay concept is still seen as enjoying positive growth.

Netflix continues to set the weather for the industry, in the view of respondents, but the launch of Disney+ has had a significant impact, with Disney rising up the ranks to supplant Amazon as the second most impactful company last year.

Sponsor comment

Andy Ashley, International Marketing Director, Digital Element

SVOD growth should come as no surprise, not only is the convenience of choosing what to watch, when, compelling for viewers, so is the proliferation of premium content available through increasingly popular SVOD services, that provide content not available elsewhere for low cost.

The rise of SVOD has gone hand in hand with the explosion of devices that are capable of streaming high-quality video. Better quality mobile screens, the proliferation of low-cost data plans and the increasing number of WiFi hotspots are fuelling this growth. People are no longer viewing through one TV per household, they can access content through a variety of devices wherever they want.

This viewing revolution presents some interesting challenges for broadcasters. As people are watching more content whilst on the move from multiple devices, broadcasters have to be mindful of compliance with licensing, copyright agreements and cultural differences – granting access where viewing is permissible, restricting access where it is not, all whilst making the user experience as seamless as possible.

IP Video migration

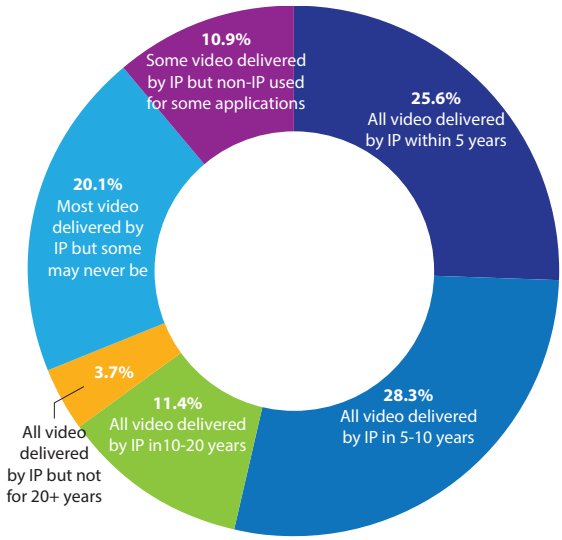
Video is moving away from legacy technology to IP both within the broadcast production environment and for distribution to end users.

In terms of distribution to consumers, IP-based delivery is growing fast thanks to the launch of multiple streaming offerings, continued growth in on-demand viewing at the expense of linear, and the ongoing entry into the multi-play broadband market of fixed and mobile telecom providers.

At the same time, traditional broadcasters' ability to offer additional services such as UHD TV offerings has been hemmed in by competition for spectrum.

Given these trends, it is no surprise that there is huge interest in migrating video distribution to IP, but industry players still have some reservations and concerns about how far and how fast this should go.

1. How quickly and completely will video services migrate to IP?



We asked survey respondents to identify how long they believe it will be until all video is delivered to end users via IP. The results reveal the majority of our sample to be very bullish about how quickly IP migration will take place, but a minority are much more sceptical.

Over half of respondents believe that all video is likely to be delivered over IP within 10 years, with one in four holding the view that IP migration will be complete within five years.

A much smaller portion take the view that IP migration will take longer than this to complete. Some 11% favour 10-20 years and just under 4% believe that IP migration will take place, but not for at least 20 years.

Below this, there is a statistically more significant minority who believe that some services will remain non-IP-based.

Some 21% believe that while most services will eventually make the switch, some may never be delivered using this technology, and 11% believe that while some services will be delivered over IP, non-IP technology will be used indefinitely for others.

Key takeaway

A majority of survey opinion is more divided on whether video will migrate completely to IP than on the timeframe for IP migration, with a significant minority taking the view that some services may never use IP.

> Over half of survey respondents believe all video is likely to be delivered over IP within 10 years.

2. What consumer trends are driving IP migration?

The biggest factor driving the migration of video distribution to IP, in the view of survey respondents, is that people are increasingly watching video-on-demand rather than linear TV, which in the long run will make broadcast technology redundant. Three in five respondents rated this as highly important and a further third rated it as moderately important, meaning that over nine in 10 view this as a key reason for IP migration.

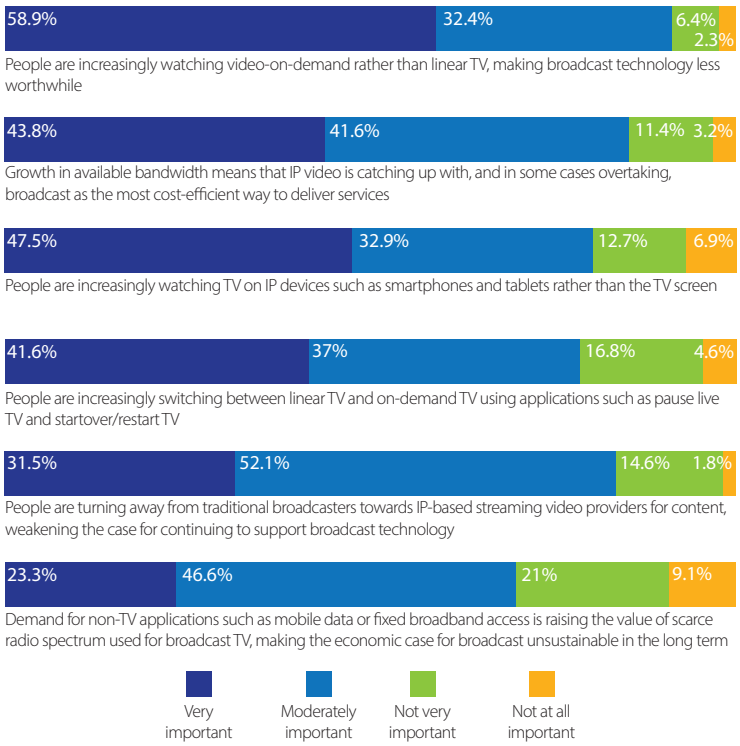
The next most important reason for IP migration, in the view of respondents, is that increased bandwidth available to consumers at a lower cost means IP video is catching up with or overtaking broadcast as the most cost-efficient way to deliver services. The comparison is open to challenge, but clearly there is a perception that streaming costs are going to be increasingly competitive with broadcast delivery.

Multiscreen viewing comes next in the list, with migration of viewing away from the TV to mobile screens leading inexorably to the migration of video distribution from broadcast to IP, avoiding the need for duplication of effort.

Similarly, the growing popularity of switching from linear to non-linear viewing through applications such as pause live TV and startover TV means that broadcast technology is no longer sufficient on its own. This is also seen as an important driver.

The trend for people – particularly the younger demographic – no longer to watch traditional broadcasters' output in favour of streaming services is seen as a moderately important driver.

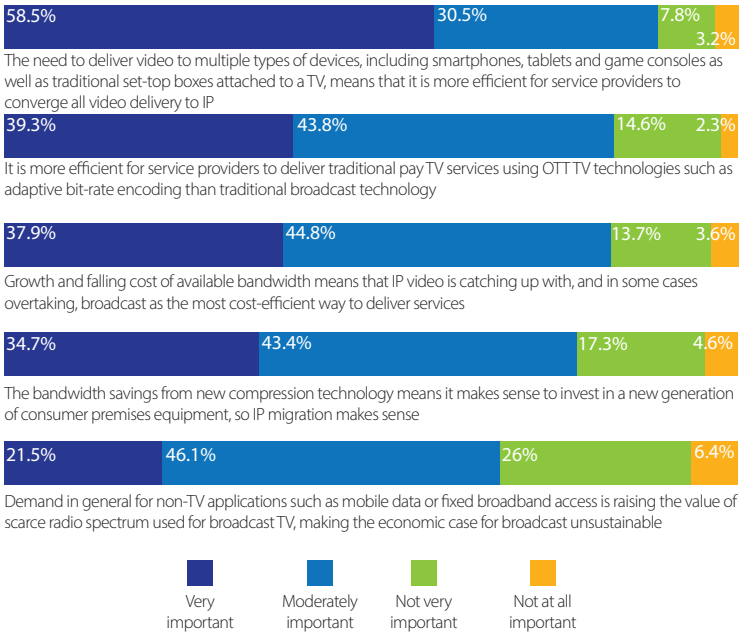
Also of moderate importance, but also at the bottom of the list of reasons for IP migration, is competition for spectrum from mobile telecom companies and fixed wireless broadband players, raising the value of spectrum and making the case for broadcast more difficult to sustain.



Key takeaway

Multiple consumer trends are driving IP video migration, but most important is the switch from linear to non-linear viewing, which is also being made more practical by the falling cost of bandwidth for streaming.

3. What trends among video service providers are driving IP migration?



While the switch from linear to non-linear viewing is seen as the key consumer trend driving IP migration, from the perspective of service providers, the key trend is multiscreen viewing. This in the view of survey respondents, means that it is more efficient for service providers to converge all video delivery to IP rather than to run different distribution technologies in parallel. Some three in five respondents rate this as a very important reason for IP migration and three in 10 rate it as moderately important.

Other reasons seen as very or moderately important drivers include the idea that it is more efficient to deliver traditional pay TV services using OTT TV technology – meaning adaptive bit-rate encoding – than traditional broadcast. This is something that telecom service providers and cable operators are increasingly wrestling with.

Also of high-to-moderate importance as a driver is the falling cost of available bandwidth, meaning that IP is catching up with or overtaking broadcast as a cost-efficient way to deliver video. Similarly, the fact that new compression technologies deliver bandwidth savings implies that it makes sense for service providers to invest in a new generation of consumer premises equipment to receive IP video signals.

The value placed on spectrum that is currently used for broadcast by mobile operators and others may provide an additional incentive for holders of that spectrum to migrate their services to IP, but this is seen as only of moderate importance as a driver of IP video migration in the view of survey respondents.

Key takeaway

For service providers, the key incentive to migrate video to IP is that efficiencies can be generated from delivering services over a single infrastructure rather than running multiple video distribution systems in parallel. It is also a fact that video is increasingly being viewed on IP devices.

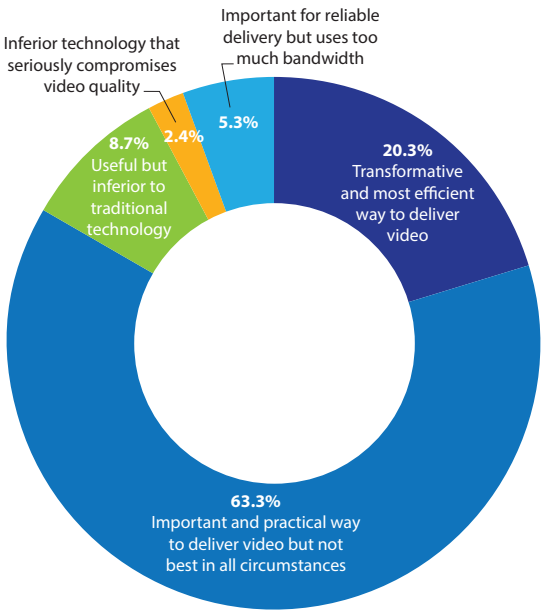
4. How useful is adaptive bit-rate technology as a way to deliver reliable video services?

While the reasons to move to IP video are compelling, survey respondents are a little bit more sceptical about the merits of the key technology that enables streaming video services to the end user – adaptive bit-rate (ABR).

To be clear, a majority of respondents believe ABR is an important technology, but there are differences within this group over whether it is ideal for all video distribution.

Some 20% of respondents who are aware of ABR believe that it is a transformative technology and the most efficient way to deliver video in all circumstances. A larger group – 63% of respondents – believe that ABR is an important technology and a major boost for OTT as a mainstream video distribution mechanism, but with the caveat that it is not the best way to deliver video in all circumstances.

About 9% believe that ABR is useful in limited circumstances but is inferior to traditional broadcast technology, while a very small group – 2% – hold that ABR is an inferior technology that seriously compromises video quality. A further 5% believe that ABR is important for reliable delivery but uses too much bandwidth in comparison with broadcast technology.



Key takeaway

Adaptive bit-rate is a very important technology for video delivery, but opinions diverge over whether it is the best solution in all circumstances.

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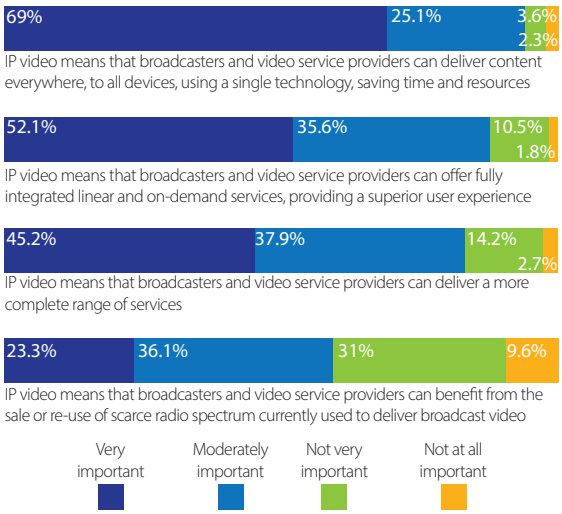
5. What are the advantages for broadcasters and service providers in migrating to IP?



The big advantage of migrating video delivery to IP, in the view of our survey respondents, is that it enables them to deliver content everywhere, to all devices, using a single technology – thus making big savings on time and resources. Almost all respondents believe this is an important advantage, with over two thirds believing it to be very important.

The second big advantage of IP video migration, in the view of the survey sample, is that video service providers can offer fully integrated linear and on-demand services, providing a superior user experience. Over half of respondents believe this to be a very important reason and over a third believe it to be moderately important.

A significant majority of respondents also believe that it is very or moderately important that IP migration enables broadcasters and video service providers to deliver a more complete range of services – spanning catch-up, targeted advertising and so forth.

Less compelling to survey respondents – once again – is the argument that IP migration means that broadcasters and video service providers stand to benefit from the sale or re-use of scarce radio spectrum. While a majority of respondents still believe this is very or moderately important, a substantial minority is more sceptical, with two in five taking the view that it is either not very important or not at all important.

Key takeaway

The big advantage of IP video migration to service providers is that it enables them to deliver content everywhere without the need for parallel infrastructures.

6. What are the main challenges to migrating video to IP?

We asked survey respondents to rate a number of key challenges that could stand in the way of the migration of video distribution to IP.

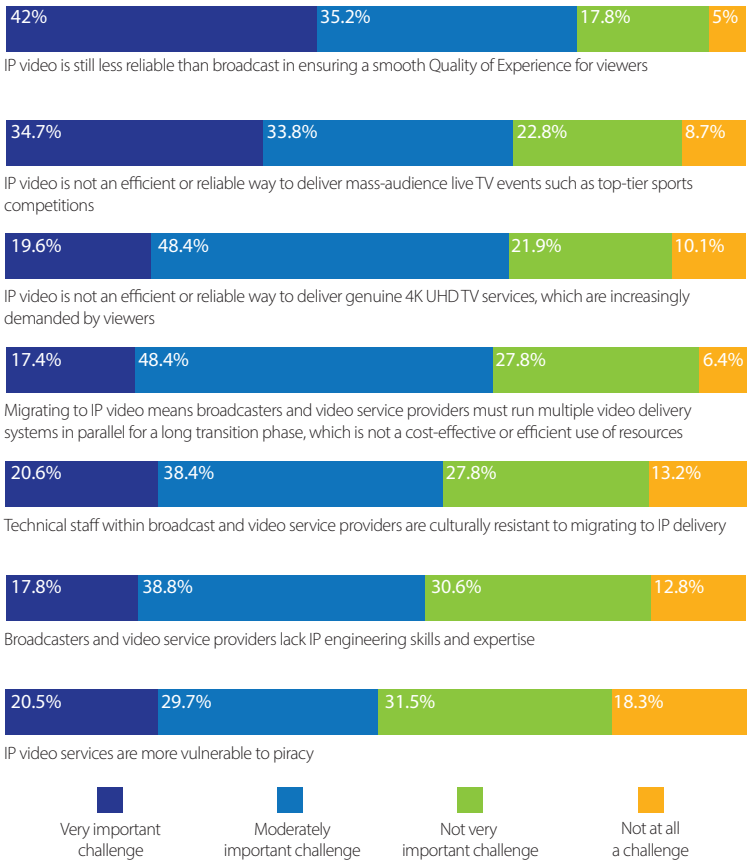
The most important challenge by some distance, is that IP video is still less reliable than broadcast in ensuring a smooth Quality of Experience for viewers. Three out of four respondents view this as either very important or moderately important.

The number two challenge is that IP video is not an efficient or reliable way to deliver mass audience live TV events such as top-tier sports competitions. Given the proliferation of live sports being streamed over the web, this is increasingly topical.

The next two challenges are IP video not being an efficient or reliable way to deliver 4K UHD TV services, and the need to run multiple video delivery systems in parallel for a long transition phase, which is not a cost-effective or efficient use of resources. Both are viewed as moderately important challenges.

Further down the list, three in five respondents believe that cultural resistance to IP migration among technical staff within broadcaster and service provider organisations is a high or moderate challenge. Similarly, just over half think that broadcaster and video service providers lack IP engineering skills and expertise and that is a significant challenge.

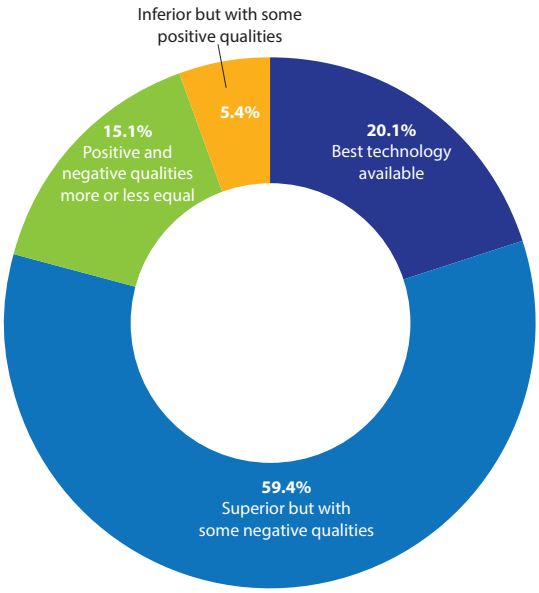
Finally, on the question of whether IP services are more vulnerable to piracy and if this is a challenge, respondents are split 50:50 between those who think this is a high or moderately important challenge and those who believe the opposite.



Key takeaway

The big challenge to IP migration is the perception that IP video is still not as reliable as broadcast in delivering a good Quality of Experience for viewers.

7. How good is IP as a way of delivering video services?



To round off our survey on attitudes towards IP migration for video service providers, we asked respondents to express a view on how good they believed IP to be overall as a technology to enable video delivery.

The overall view is that IP is a good technology to enable video delivery, though there are some residual misgivings. A clear majority – three out of five respondents – believe that IP is, on balance, a superior way to deliver video services, although it has some negative qualities. A further 21% believe unambiguously that IP is the best technology available to deliver video services.

Of the remaining respondents, 16% believe that the positive and negative qualities of IP as a video delivery technology are equal.

Only a small minority – 5% – take the view that IP is an inferior way to deliver video services, although with the caveat that it has some positive qualities. No respondent was of the opinion that IP is the worst technology to delivery video services.

Key takeaway

Survey respondents believe that IP is a good way to deliver video services, although most also believe it has some negative qualities.

80%
believe that IP is a superior way to deliver video services.

In summary

A majority of survey respondents believe that IP video migration will happen at a fast pace and that this is a positive thing.

Over half of respondents believe that all video services will be delivered over IP within as little as 10 years, with this shift being primarily driven by the change in viewing habits that is seeing people watch less linear TV and more content on-demand – increasingly on IP-connected devices. The economic case for IP video migration is also compelling, with growth in multiscreen viewing meaning that it may make more sense for providers to migrate all their video services to IP rather than run different technologies in parallel.

There is also a sense that OTT TV technologies such as adaptive bit-rate streaming mean that IP is catching up with broadcast as a cost-efficient way to deliver video. Respondents believe ABR is an important technology enabler but have reservations about its use in 100% of cases.

The key incentive to migrate to IP is to deliver content to all devices using a single technology, as well as the possibility of integrating linear and on-demand experiences.

Respondents believe the main challenge in the way of IP migration is that IP video is not yet as reliable as traditional broadcast technology. However, there is a general sense that IP video is a superior way to deliver video services even if it comes with some disadvantages.

Sponsor comment

Elke Hungenaert, VP of Product Management, Video Network, Synamedia

This survey offers an interesting snapshot: IP adoption is clearly on the rise and on-demand viewing is a catalyst. But it would be a mistake to assume that live TV is in its death throes. While the time taken to transition to all IP will inevitably vary by region, it will happen. And appointment-to-view events such as live sport will continue to attract live audiences in an all-IP world. This year's Superbowl was watched by over 100m people. This reversed three years of declining viewing figures, with the increase attributed to consumers choosing the convenience of live streaming on a tablet or mobile phone over watching on the main TV screen.

Fortunately, considerable progress is being made to clear those remaining IP technology hurdles and nail the quality of experience. Synamedia is leading the charge here.

Achieving synchronised broadcast/IP latency is one hurdle. At IBC 2019, Synamedia showcased a real-world use case with a latency from content ingest to display on the OTT device of just 6 seconds – equivalent to broadcast latency.

Another concerns bandwidth efficiencies. Our constant quality encoding, part of Synamedia Smart Rate Control, helps customers boost bandwidth efficiencies and reduce bandwidth and storage costs by up to 50%, while delivering the ultimate viewing experience.

And last but not least, the challenge of last-mile scaling can be addressed with Multicast ABR. This will help to make it possible for every Olympics fan on a provider's network to live stream the 200m hurdles final in glorious 4K without a glitch.

Advanced advertising and streaming

There is considerable and growing interest in advertising-based streaming as a business model as rights owners look to optimise the exploitation of often underused assets globally.

We asked our survey sample to report their experience in this business to date, future plans, and perceptions about the key challenges and the potential of AI and machine learning to change the nature of the game.

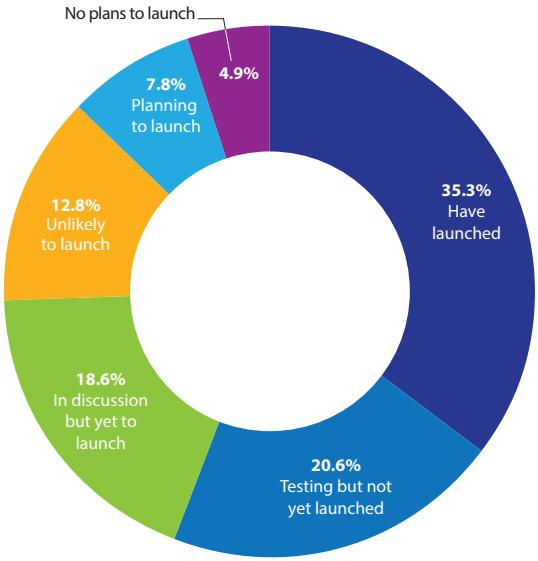
1. What's your involvement in ad-supported streaming?

There is a lot of interest in advertising-supported streaming, even among streaming players that have adopted different business models to date.

Among respondents to our survey that are already involved in ad-supported streaming or could potentially be involved at some point in the future, over a third say that they have already launched a full service, and a further 20% say they are testing a service.

Among the minority who have not yet launched or are testing anything, a clear majority are either planning to launch a service or are discussing whether or not to launch something, even though they have no definite plan.

Only a minority – under one in five for whom the question is relevant – say they are unlikely to exploit content in this way or categorically will not do so because they have a different business model.



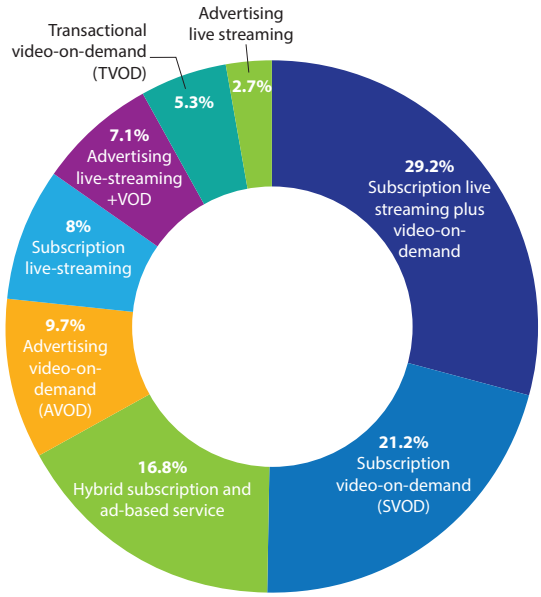
35%

of relevant respondents say they have launched ad-supported streaming services.

Key takeaway

Advertising is emerging as a key model for streaming. Whatever their current streaming experience or business model, a clear majority of respondents to our survey are either delivering an ad-supported streaming service or plan to do so.

2. What streaming business model have you adopted or plan to adopt?



A majority of respondents to our survey for whom the question is relevant have either launched or are planning to launch a subscription-based streaming offering. A smaller number – about 40% – say they have either adopted or plan to adopt an advertising-based business model of some kind.

Among those that have worked out what they want to do, a hybrid subscription and advertising model is the most popular advertising model variant, rather than a business that is based on advertising alone.

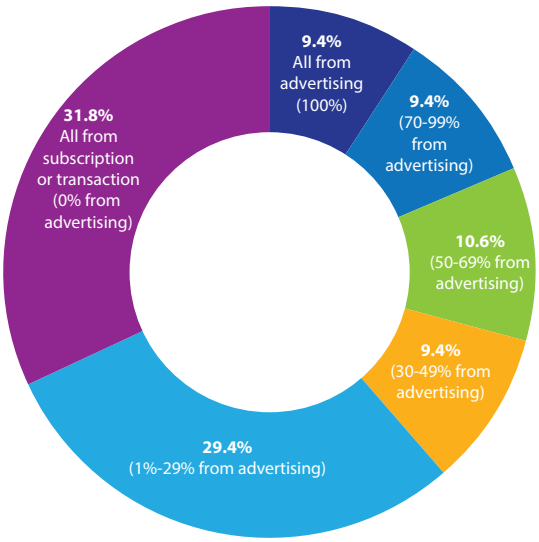
Given the dominance of SVOD as a streaming business model, it is perhaps not surprising that variations on the subscription model – whether SVOD, live streaming or live streaming plus VOD – currently enjoy greater take-up than pure advertising-based models.

Nevertheless, about one in 10 respondents have adopted or plan to adopt a pure AVOD model, with a smaller number currently attempting to build a business model based on live streaming or a combination of live streaming and video-on-demand alone.

Key takeaway

Two in five respondents to our survey have adopted or plan to adopt an advertising-based model for streaming. About half of those are adopting or plan to adopt a hybrid model combining subscription elements with advertising – all of which could be evidence for a general belief that multiple revenue streams are the best way to make streaming work.

3. How much of your streaming revenues are from advertising?



There is considerable interest in ad-supported streaming, but only a small number of players are actually making all, or the bulk, of their revenues in this way – at least for now.

Among those for whom the question is relevant – in particular those who operate streaming services – almost a third said they are currently making zero revenue from advertising, and 29% say they are making less than 30% of their streaming revenues from advertising.

At the other end of the scale, fewer than one in 10 streamers surveyed are currently making all of their revenues from advertising, and only 29% of respondents are making over half of their revenue in this way.

Key takeaway

Interest in advertising-supported streaming is strong, but relatively few among our survey sample appear to be making serious money from it yet. Only a minority of streaming respondents are making most of their revenue from advertising at this time.

32%

of relevant respondents say they currently receive all of their revenue from subscriptions or transactions and zero from advertising.

4. How valuable is targeted advertising?

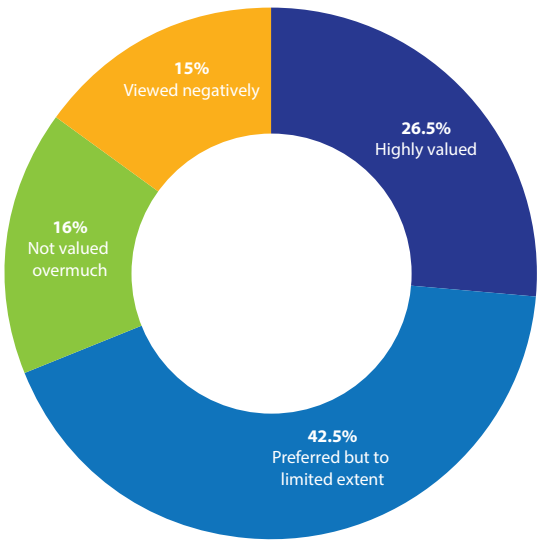
Survey respondents were asked to place a value on targeted, personalised advertising. A clear majority believe that targeting of adverts is valuable, although there are subtle differences of opinion about quite how valuable.

Some 26% of our survey sample believe that targeted ads will be highly valued by viewers because they get to see ads that are relevant to them. A somewhat higher number believe that consumers will prefer to see ads that are more relevant to them, but only to a limited extent.

Relatively few respondents believe that consumers will react negatively to targeted advertising because of the evidence it provides that their consumption patterns and lifestyles are being monitored.

69%

of our survey sample believe that consumers will either highly value or prefer ads that are more relevant to them.



Key takeaway

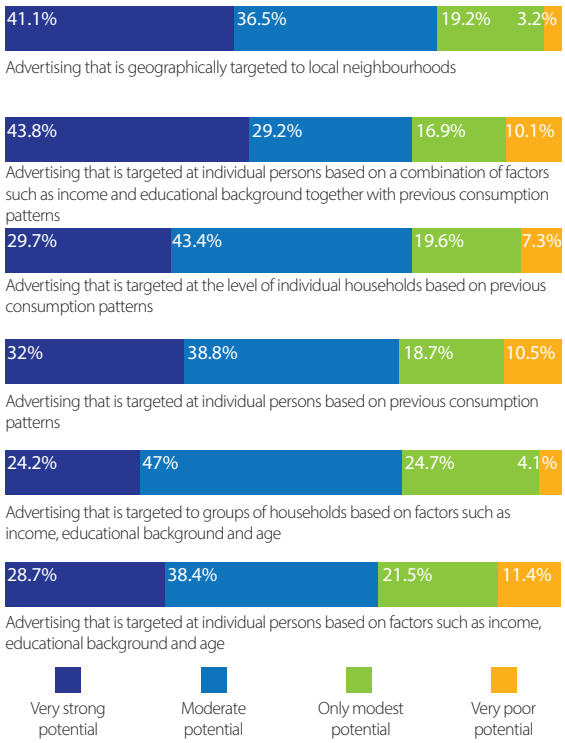
Targeted advertising will in general be viewed positively by streaming consumers because it delivers ads that are more relevant to them.

5. What kind of targeted ads will deliver strong revenue streams?

The most elementary form of group targeting – delivering ads aimed at specific geographic neighbourhoods – is best placed to deliver strong, reliable revenue streams, according to our survey respondents, presumably because it enables advertisers to tap into a new market of local advertisers that would otherwise not be captured by TV advertising.

The second most valued form of targeting is advertising that is targeted at individuals based on a combination of factors – including income and educational background, together with previous consumption patterns.

In general, advertising that is targeted based on previous consumption patterns – whether at the level of households or individuals – is slightly more highly valued than advertising that is targeted purely based on factors such as income, educational background and age.

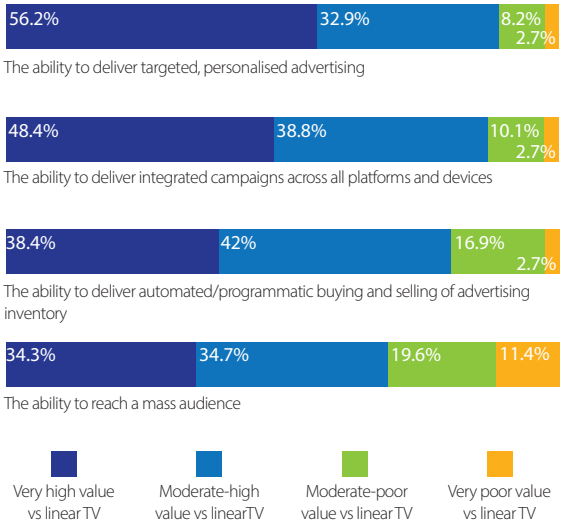


Key takeaway

Keeping it simple – with geographically targeted ads – pays off, in the view of our respondents. But in terms of more sophisticated targeting, mapping a wide range of factors relating to individuals – including both socioeconomic data and previous consumption – is better than relying on a more restricted dataset.

> Advertising targeted at geographic neighbourhoods is tihe most highly-valued form of targeting, in the view of the survey.

6. What about streaming is more valuable than linear TV to advertisers?



The key advantage that streaming services possess over linear TV is their ability to deliver targeted, personalised advertising, according to our survey respondents.

Targeting is much easier for unicast streaming services than it is for broadcasters, which would have to rely on client-side solutions to deliver a targeted ad, limiting their options. But streaming services also provide an additional advantage – their ability to deliver integrated ad campaigns across multiple devices and platforms.

This is increasingly important given the shift in viewing away from the TV screen to mobile devices – and away from communal to individual viewing experiences.

Somewhat less highly valued by our survey respondents is the ability of streaming platforms to better support automated or programmatic buying and selling of advertising inventor.

Nevertheless, a majority of respondents said the ability of streaming services to support this had either a very high value or a moderate-to-high value relative to linear programming.

The same was true of the ability of streaming platforms to reach a mass audience – often cited as a strength of linear broadcast services. While broadcast's one-to-many infrastructure is often seen as giving it a comparative advantage in this respect, streamers have the opportunity to deliver global scale.

Key takeaway

The ability to support targeted, personalised advertising is one of streaming's greatest strengths, and provides a unique differentiator versus broadcast services.

7. What are the challenges of delivering targeted, personalised streaming?

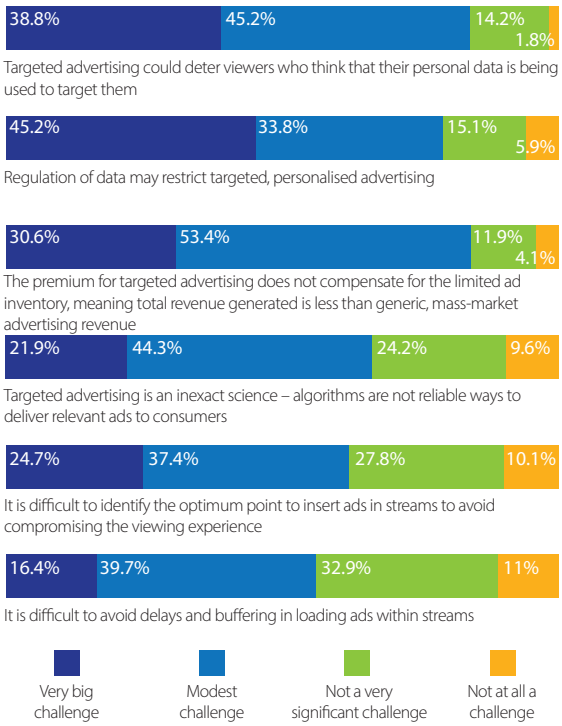
The biggest challenges in delivering a business model based on targeted, personalised streaming are about public perception, fears of data misuse and the impact of regulation, according to our survey sample.

Substantial numbers of respondents report that overcoming perceptions about viewers' personal data being used to target them is a big challenge. There are also fears that regulation may restrict the implementation of personalised advertising.

Another significant challenge, in the view of respondents, is the possibility that the premium that can be charged for targeted advertising will fail to compensate for the limited ad inventory on offer, with total revenue ultimately being less than that of old-style generic, mass-market advertising.

Respondents are also concerned about the inexact nature of addressable advertising and fallible nature of algorithms to deliver relevant ads to an appropriate audience, but to a lesser extent than the concerns about privacy and regulation.

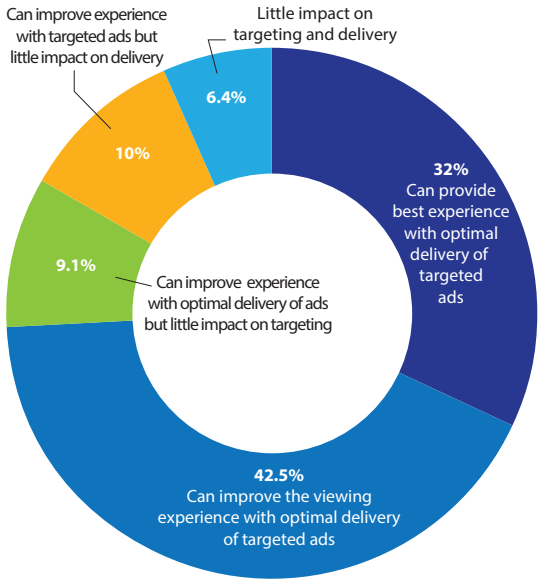
In relation to the overall user experience, respondents believe that identifying the optimum point to insert ads without compromising the viewing experience can be challenging. Buffering and delays from loading ads within streams is also a concern, but to a much lesser extent.



Key takeaway

The biggest challenges to delivering a targeted advertising model are overcoming consumer resistance and working within an evolving regulatory framework.

8. Can AI and machine learning improve the streaming advertising experience?



AI and machine learning can play an important role both in improving optimal delivery of ads and supporting targeting and personalisation, according to our survey sample.

The vast majority of respondents believe that AI and machine learning can improve the viewing experience with optimal delivery of ads – meaning optimal timing, placement and length of adverts – that are targeted and personalised, with just under a third of respondents going a step further and endorsing the view that these techniques can provide the best viewing experience available.

Only a minority of respondents believe that AI and machine learning will have a positive impact on optimal delivery of ads but not targeting and personalisation, or vice versa, and only a very small number of respondents believe that AI and machine learning will have little impact on either.

Key takeaway

AI and machine learning will have a big, positive impact both on the optimal delivery of ads – meaning timing, placement and length – and on targeting and personalisation.

94%
believe that AI can improve the streaming ad experience.

We make OTT viewing personal.

Ensure every second of your content and ads reach the right audiences. Our Smartplay 1 to 1 session management technology generates a unique manifest for every viewer that hits “play.” Smartplay features dynamic server-side ad insertion, so ads are personalized to every viewer – maximizing revenue. To get more personal with your viewers, visit **vm.mp/dtve-fr2020.**

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In summary

Our survey respondents demonstrate strong interest in ad-supported streaming, although the bulk of streaming revenues today come from subscription. There is an interest in hybrid models in particular, possibly reflecting a view that advertising revenue is additive rather than a substitute for subscription in many cases.

Respondents believe that consumers will welcome targeted, personalised advertising that delivers ads that are relevant to them – on the whole. They are, however concerned that viewers may be hostile to their viewing and lifestyle habits being monitored. The evolving regulatory landscape is also seen as a key challenge.

Respondents believe that AI and machine learning have the potential to support the optimal technical delivery of in-stream advertising – and to improve targeting and personalisation.

Sponsor's comment

Chris Drake, VP, Global Media & Entertainment, Verizon Media

Consumers are driving the media industry to evolve and innovate. One transformation we're seeing is the shift away from traditional TV (i.e., video content distributed via cable, satellite, or antenna). Today's viewers are "cutting the cord" entirely, or adding OTT services to their household's viewing choices.

When digital video began, most content was short-form and consumed primarily on laptops or mobile devices.* Due to improvements in video compression, faster data connections, and the spread of connected TV devices, the popularity of online video has exploded around the world. The proliferation of internet-enabled devices has made streaming long-form video standard viewing behavior for millions and sparked the rise of online video services. Whereas traditional television provided a single content and viewing experience to millions of users, streaming video users have come to expect personalization, the flexibility of individualised subscription and ad-supported models, and the ability to access content whenever and wherever they want. These demands have put enormous pressure on content providers and broadcasters to change the way they think about their businesses to meet these demands as well as attract and retain viewers.

One of the most exciting aspects of this shift is the opportunity to deliver ultra-personalised online video experiences. The increase in content, enriched data about that content, and video-enabled devices mean content owners need to ensure they have the technology to personalise each consumer touchpoint at scale.

Verizon Media understands the power of streaming video; that's why we architected Smartplay, our manifest technology, for every viewer that hits "play." Smartplay delivers highly personalized sessions by generating unique manifests for each viewer using infinite business rules and combinations with capabilities like Stream Routing (multi-CDN switching), content protection (encryption and DRM), as well as server-side ad insertion. Our server-side technology encodes content and ads into a unified stream, guaranteeing TV-like quality. And because ads are inserted server-side, we avoid ad blockers, so your ads reach more viewers. We've also fine-tuned our technology to eliminate latency and increase ad fill rates associated with fetching ads during breaks for millions of concurrent viewers.

*According to the IAB, short-form video is 8 minutes or less.

Thematic streaming services

Streaming services have proliferated over the last few years, but much of the attention of the industry and public has been captured by big name players launching multiple scripted entertainment-based subscription video-on-demand services.

While there has been much talk about 'service stacking' – consumers building their own 'streaming bundle' of favoured services – the make up of such self-created bundles will depend on the tastes and proclivities of individual subscribers – particularly where they sign up for access to specialist thematic services in addition to general entertainment offerings.

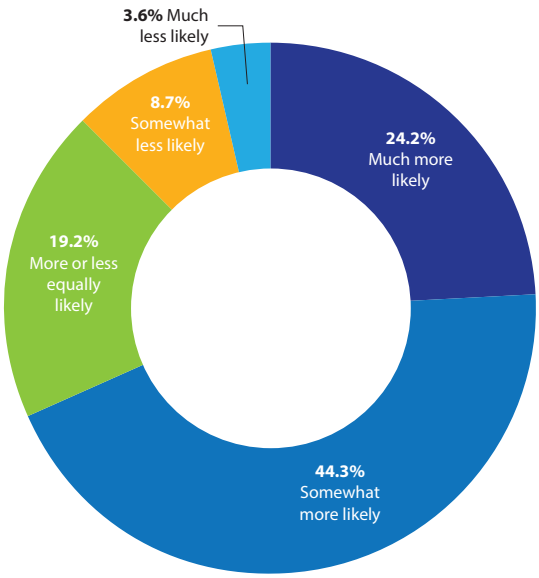
We asked our survey respondents to think about the relative appeal of specialist thematic streaming offerings and the key elements that are likely to go into making such a service a success.

MaginePro

Magine Pro build branded video streaming services that enable clients to monetize and deliver live events, linear TV and VOD content to audiences around the world. They leverage years of consumer market experience to provide their partners with trusted and proven fully managed end-to-end OTT solutions.

Magine Pro's video streaming services are cost-efficient and scalable. They provide all the tech, tools and insight you need to launch a successful video streaming service and grow it sustainably. Magine Pro works with customers across multiple sectors, such as ISPs, Sports, Content Aggregators, Film Studios and production houses, plus many more. Their customers are located in Europe, the United States as well as in emerging markets such as Asia, the Middle East, and Africa.

1. How likely are thematic streaming services to attract consumers?



We asked our survey sample how likely they believe thematic or niche streaming services are to attract consumers that already subscribe to one or two general entertainment streaming offerings than another generalist service.

Respondents believe that those who already subscribe to one or two generalist streamers such as Netflix or Amazon Prime Video are more likely to complement this with a thematic offering than with a third general entertainment service.

Some 24% of respondents believe users are much more likely to add a niche service to their existing streaming portfolio, while 44% believe they are somewhat more likely to do so.

Of the remainder, 19% believe consumers are more or less equally likely to sign up for an additional generalist service or a thematic one. Some 9% believe they are 'somewhat' less likely to take a niche service than another generalist one, while only just under 4% believe consumers are much less likely to add a thematic or niche service rather than extend the list of general entertainment streamers they take.

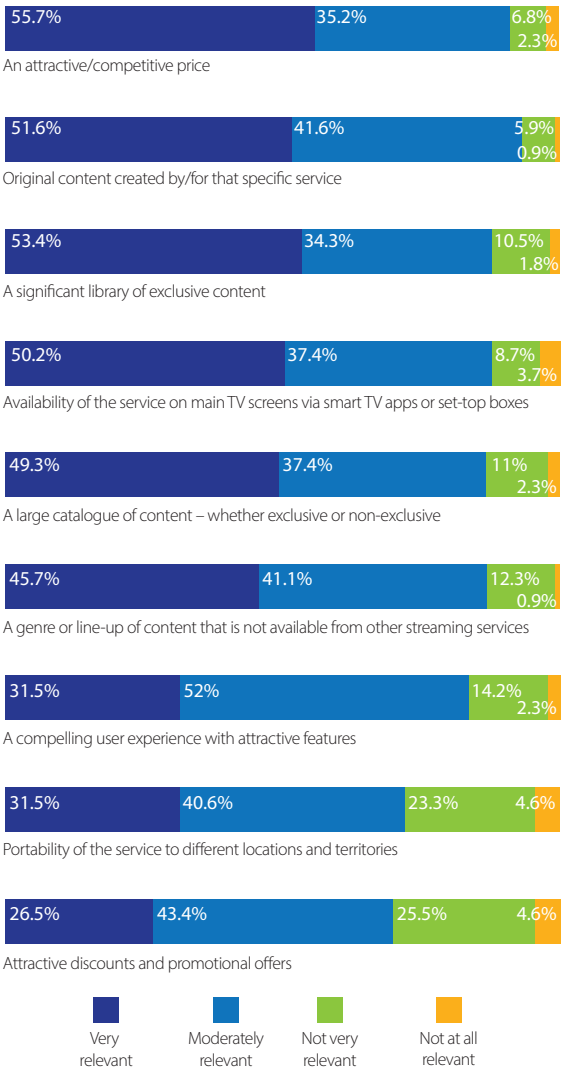
Key takeaway

In a market that seems to be increasingly saturated, there is more likely to be room for growth for thematic or niche streaming services than for general entertainment offerings.

68%

believe that existing streaming users are likely to add thematic services.

2. What leads consumers to sign up for a subscription streaming service?



What makes subscribers sign up for one streaming offering rather than another? In the view of our survey respondents, consumers can be incentivised by a number of factors, with relatively little to separate them.

The most highly rated elements from field of nine put to respondents is original content created by or for a specific service and an attractive/competitive price, closely followed by a significant library of exclusive content. Over 93% of respondents said that original content was either very relevant or moderately relevant, while over 87% felt the same about exclusive content. Some 91% believed an attractive or competitive price is either very relevant or moderately relevant, with over 55% believing it is very relevant.

If those three things form the first tier of elements that attract consumers, the second tier comprises a service that is available on the main TV screen via smart TV apps or

set-top boxes, a large library of content – whether exclusive or non-exclusive – and a line-up of content that is not available elsewhere.

Slightly further down the priority list, but still very important as incentives for subscribers, is a compelling user experience with attractive features.

Portability of the service to different locations and territories and a range of attractive discounts and promotional offers respectively are felt to be only moderately important as incentives for consumers to sign up.

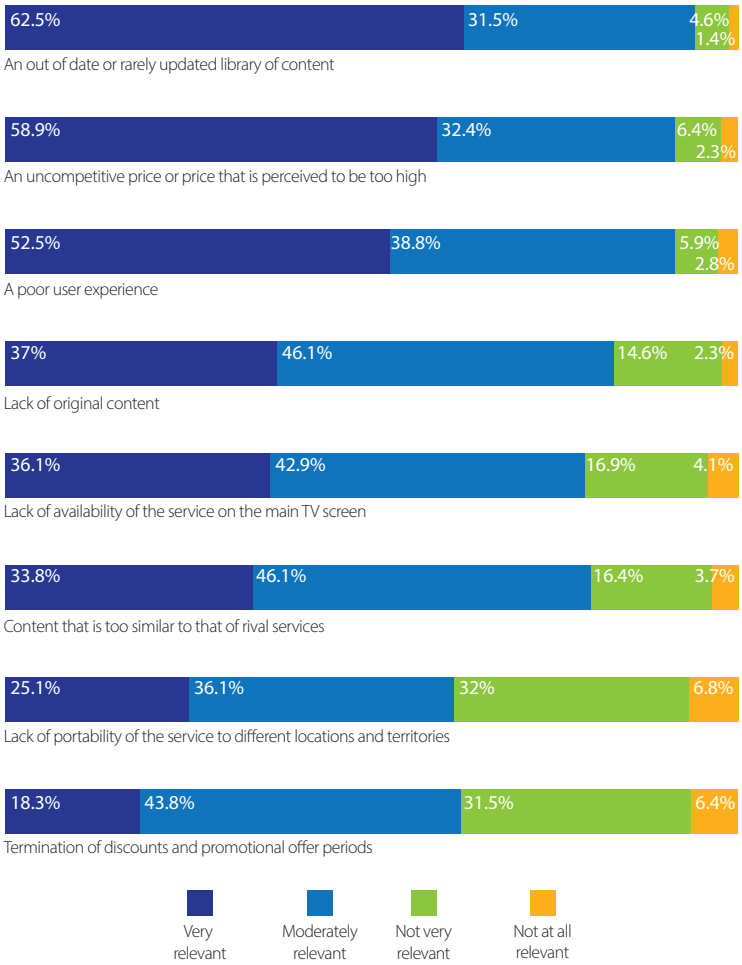
Key takeaway

A wide range of elements goes into making a streaming service attractive to consumers, but content – at an attractive price – is king.

93%

of our survey respondents believe that original content created specifically for a streaming service is relevant in incentivising consumers to sign up for that service.

3. What leads subscribers to terminate a streaming service subscription?



If content at the right price is key to attracting subscribers, it is reasonable to infer that lack of content at the wrong price will repel them.

We asked survey respondents to identify the key elements that lead streaming users to terminate their subscriptions, which produced the result that an out-of-date or rarely updated library of content is the most important element in incentivising churn, followed closely be an uncompetitive price or a price that is perceived to be too high.

Also mirroring the results of the previous question, a poor user experience came next on the list of factors that cause people to quit.

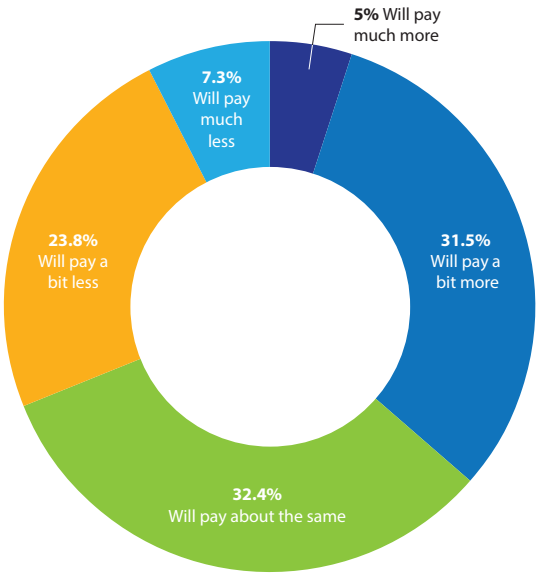
The next group of factors that lead people to cancel their subscriptions are, in order of importance: lack of original content; lack of availability of the service on the main TV screen; and content that is too similar to that of rival services.

Relatively less important factors – in the view of respondents – include lack of portability of the service to different locations and territories and the termination of discounts and promotional offer periods.

Key takeaway

When it comes to factors that cause people to cancel a service, content is once again king, with uncompetitive pricing sitting alongside it as consort.

4. What will consumers pay for a thematic/niche streaming service compared to the price of a generalist streamer?



Are thematic or niche services more or less valuable to consumers that want them than generalist services? Our survey respondents are divided on this question.

Roughly speaking, just over a third of respondents believe people will pay more, about a third believe they will pay the same and just under a third believe they will pay less.

The vast majority of respondents – 85% – form a group who see consumers paying a bit more, the same or a bit less. Only small minorities believe they will pay much more or much less.

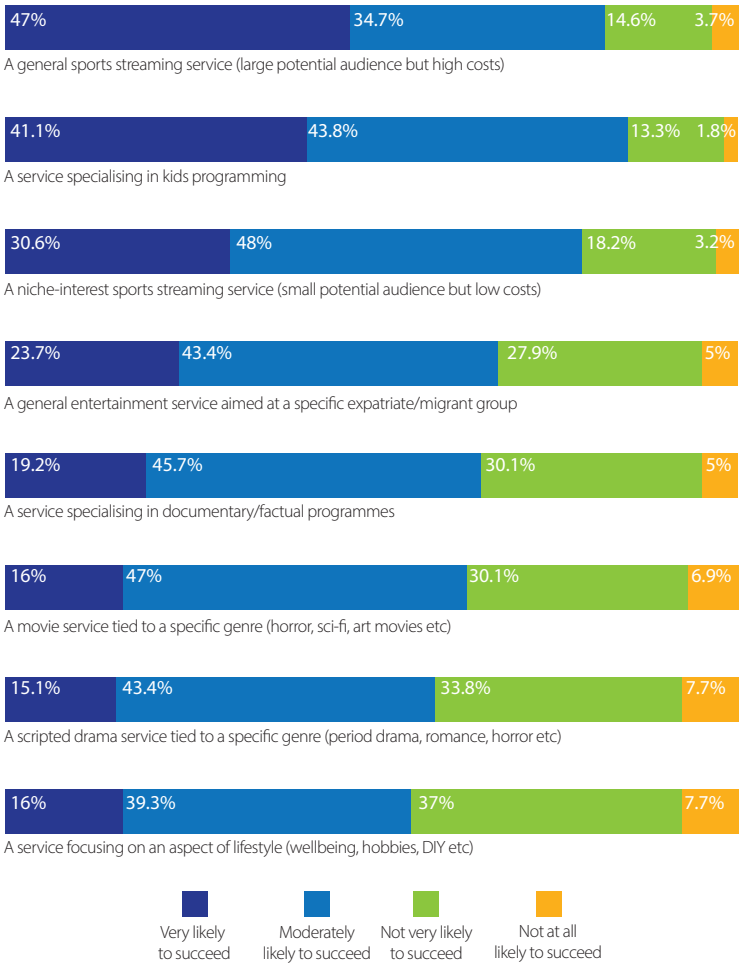
Key takeaway

There is no consensus about how much more or less consumers will pay for a thematic or niche offering compared with a generalist service. The true answer may of course depend on the specific service being discussed.

36%

believe that users will pay more for a niche streaming service than for a general entertainment service.

5. What genres or interests are best suited for new thematic streaming services?



We asked respondents to rate eight programming genres or thematic interest areas in terms of how promising they are as the basis for streaming services. A general interest sports service, potentially with high costs but a large audience, scored highest, followed by a kids content service, with a clear majority of respondents rating these genres either as very likely or moderately likely to succeed. Almost half of respondents believed general sports services are very likely to succeed, with over two in five believing the same for kids services.

The next most highly rated genre was niche interest sports, with a small potential audience, but also low costs.

The fourth most promising offering was general entertainment services aimed at a specific expatriate or migrant group, with two thirds of respondents believing that this was either very likely or moderately likely to succeed.

There was relatively little to separate the other genres considered.

Key takeaway

Sports and kids programming are the most promising genres of programming for specialist streaming services, with an honourable mention going to services aimed at specific expatriate or migrant groups

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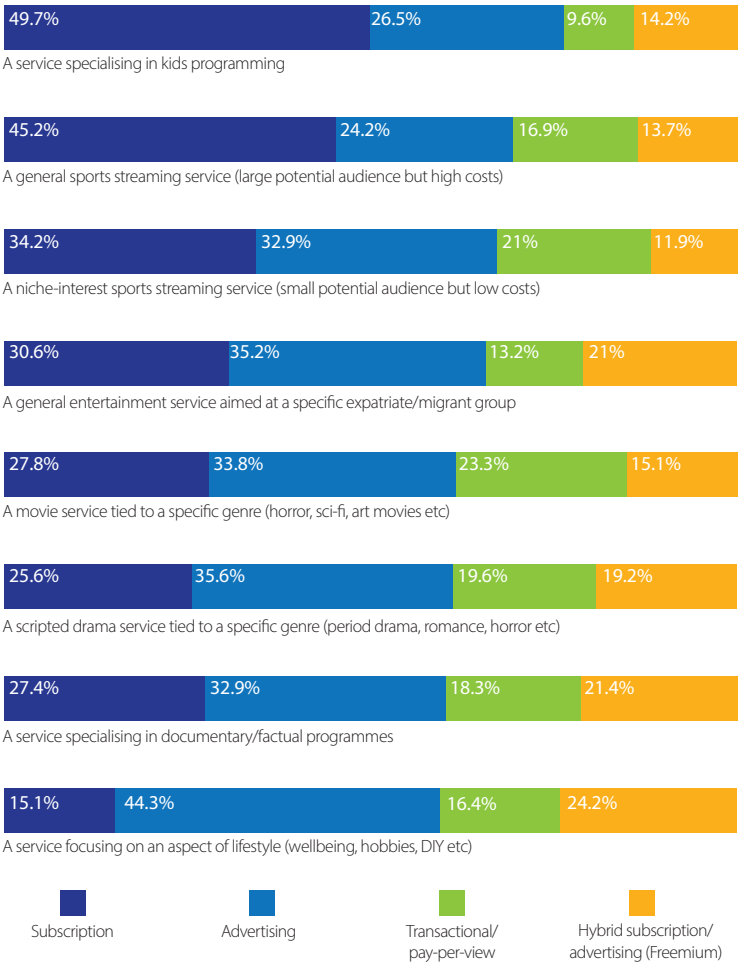
6. What is the best business model for these types of specialist streaming services?



We asked respondents to choose the business model most likely to succeed for each programming genre. Respondents linked the genres they believe to be best suited for specialist streaming services – such as sports and kids programming – to the subscription model, which is seen as the gold standard for streaming.

For niche sports and services aimed at expatriate/migrant groups, there was a more even split between subscription and advertising as the most favoured model.

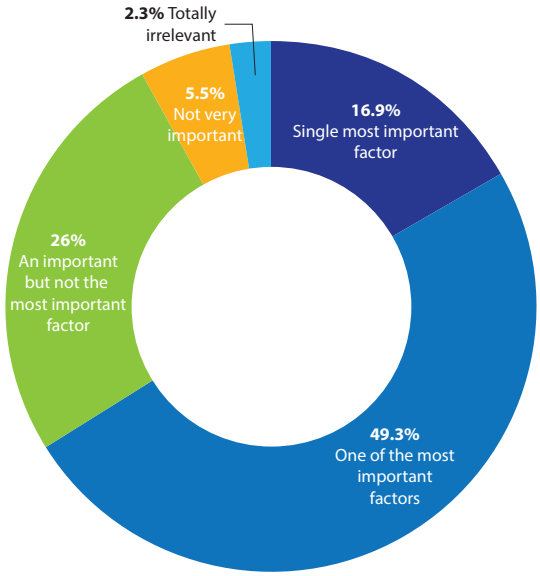
In general, advertising is seen as the best model for genres that respondents believe are less promising in terms of their appeal. In the case of lifestyle services, only 15% favoured subscription compared with 44% who favoured advertising.

In general, respondents were less favourable about transactional/PPV or hybrid/freemium models. However, there was interest from a substantial minority in the transactional model for thematic movie services and niche sports, while a number of respondents believe that a freemium model could be best suited for lifestyle services, documentary/factual services and services aimed at expatriate/migrant groups.

Key takeaway

Subscription is seen as the gold standard business model for thematic streaming services and the one best suited for highly valued genres, while advertising is favoured for those genres that are likely to be of more marginal interest.

7. How important is original content to the success or failure of thematic streaming services?



Original content is a very important element in the mix that goes into making a successful thematic streaming service, in the view of our survey respondents.

Two thirds of respondents believe that original content is either the single most important factor or one of the most important factors that determine the success or failure of specialist interest streaming services, with 17% believing it is the single most important factor.

A further 26% of respondents believe that original content is an important factor, but not the most important. Only a small minority take the view that it is not a particularly important factor, with a smaller group yet – 3% – taking the view that original content is irrelevant to the success or failure of services.

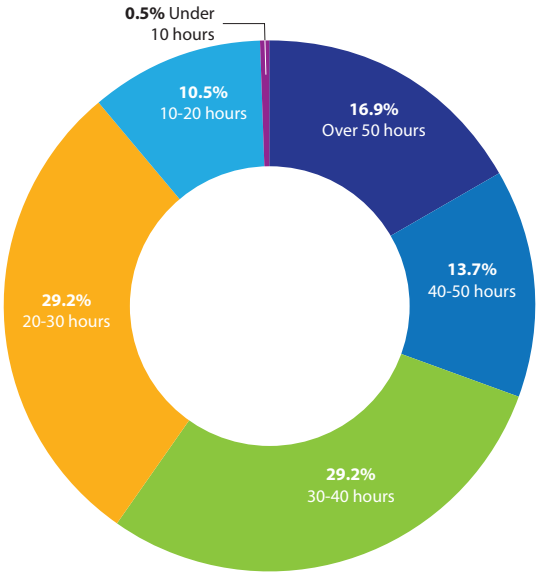
Key takeaway

The presence of original content in the programming mix is one of the most important elements that determine the success or failure of thematic streaming services.

66%

believe original content is one of the most important elements in determining if a streaming service will succeed

8. How many hours of new content do thematic streaming services need to add each month?



Content may be crucial to the success or failure of thematic streaming services, but how much content is enough, and how often do streamers need to refresh their line-up?

We asked respondents to give a view on how many hours of content specialist streaming services need to add or refresh each month to retain subscribers in sufficient numbers to safeguard their commercial viability.

There is no clear consensus about this. The majority of respondents went for the middle ground, with three in five believing that streaming services need to add between 20-40 hours a month. There is an even split between the lower and higher ends of this range, with 29% of respondents of the view that 20-30 hours is sufficient and the same proportion believing that streamers need 30-40 hours.

Others believe that streaming service providers need more or less than this. Some 31% believe streamers need more, with 17% opting for more than 50 hours. A smaller group of respondents believe that thematic streamers need less, with 10% of the view that they need 10-20 hours and fewer than 0.5% believing that they need fewer than 10 hours.

Key takeaway

There is no clear consensus about the number of hours of fresh content that thematic streamers should add each month to retain consumers' loyalty, but most respondents believe that between 20-40 hours seems about right.

60% believe services need 30 hours or more of fresh content a month

In summary

There is plenty of room for growth for thematic or niche streaming services to complement the popularity of general entertainment SVOD offerings, in the view of survey respondents. While the generalist streaming market may be becoming saturated with the launch of multiple high-profile offerings, our survey sample believe there is an appetite for more targeted offerings that is still to be sated.

The right content mix at the right price will be the key to the success or failure of thematic services, in the view of respondents. Original content is an essential part of the mix to attract and retain customers, and service providers need to incorporate a reasonable refresh rate in their content plans in order to continue to appeal to viewers.

Sports and kids content is seen as offering the most fertile ground for the launch of thematic services, but there is also interest in services targeted at expatriate or minority groups.

Respondents believe in the subscription model and believe that streaming services built around valued content will do better charging for a monthly subscription, while advertising may work better for content that has a narrower appeal.

Sponsor comment

Matthew Wilkinson, CEO, Magine Pro

When asking the industry about success factors for thematic OTT services, it's clear that content and pricing are in focus. The fact that many respondents believe subscribers are more likely to terminate a subscription if the content is out of date or rarely updated is telling. Despite some market saturation, results show there's still room for emerging OTT services that cater to specialised global or local audiences.

OTT has now become a mature distribution form, where technical flaws are mentioned less as impacting user experience. Flawless streaming is now a basic requirement. The consumer perception of quality for a streaming service is largely dependent on the originality or exclusivity of content that is available.

For the operator, it's also about decreasing CAPEX, optimising return of investment, easy integration and the interrogation of analytics to develop a service further.

Magine Pro has experience running global OTT services since 2011. We understand the importance of meeting commercial priorities regarding content, price, and service economics that this survey indicates as important. Our full end-to-end OTT solutions are proven and flexible and meet the demands of a mature streaming market.

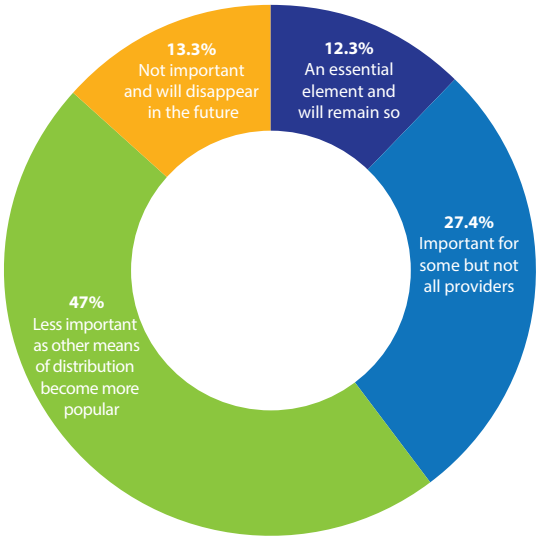
TV operating systems & operator CPE strategy

The shift in viewing habits towards streaming services and towards consumption on multiple devices has left the traditional pay TV set-top box looking distinctly old-fashioned as a TV delivery technology. This – along with the fact that it represents the biggest single investment requirement for service providers – has led to predictions that it will disappear.

This view is shared by many of our survey respondents. Clearly, the shift to on-demand, app-based and multiscreen viewing means that the service provider's business – and the role the set-top plays in it – is undergoing massive change, leading operators to explore a range of different ways to deliver video.

However, the set-top also serves as a highly visible entertainment gateway in pay TV subscribers' homes, and the availability of technologies such as Android TV that fit in nicely with the evolving business models of operators, mean that the set-top box may still have some life left in it.

1. How important is the set-top box to the future of video service providers?



The demise of the set-top box has long been predicted, and it is no real surprise that the views of our survey respondents reflect this to an extent. A majority of respondents believe that the set-top will either decline in importance for all operators or that it will disappear entirely.

Some 47% of respondents believe the traditional set-top box will decline for all operators as other means of distribution such as smart TV apps, viewing on mobile devices and the proliferation of streaming devices eat away at the rationale for supplying these devices. A further 13% believe the set-top is no longer an important element in video service providers' offerings and will disappear entirely in the future.

Despite this pessimism about the future of the set-top, a substantial minority of respondents take a contrary view, with two in five believing that the box does have a future. Some 27% believe that it will remain an important part of some – but not all – video service providers' offerings, and 12% believe it is an essential element of service providers' offerings and will remain so in the future.

13%
believe that set-tops are destined to disappear entirely.

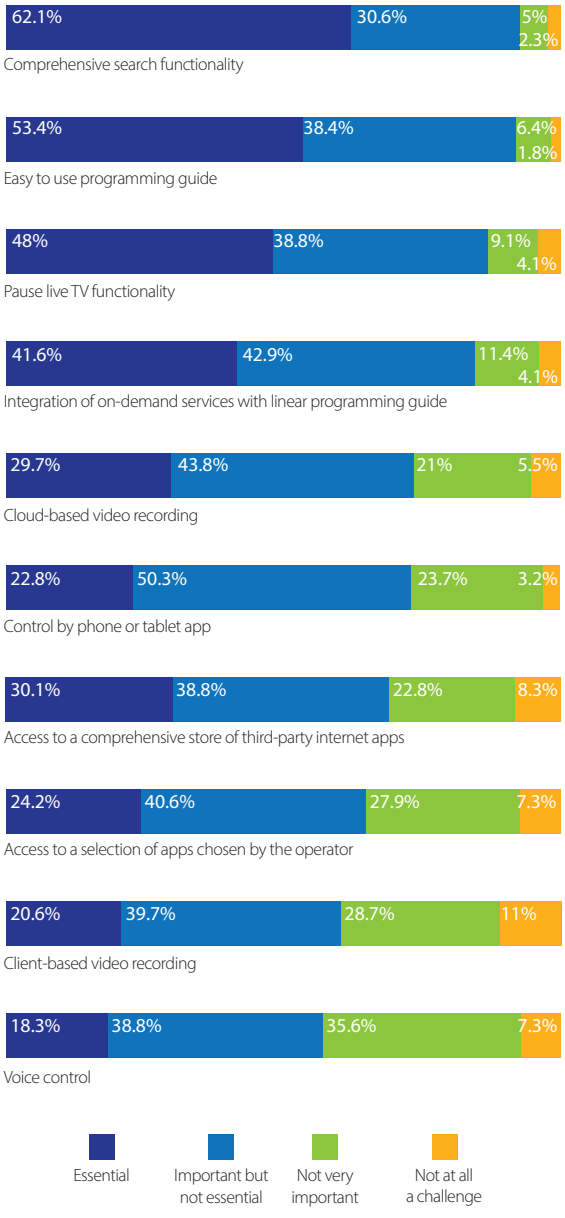
Key takeaway

A majority of respondents believe the traditional set-top box will decline in importance at the very least, as other means of viewing video grow in importance.

2. What is important for a competitive video service?

The set-top and its rivals are designed to perform functions that users value, some but not all of which can now be implemented in the cloud rather than in hardware. We asked survey respondents to rate 10 key functions or applications for their perceived importance as part of a TV service provider proposition.

According to our survey sample, the most important of the 10 features or functions considered is comprehensive search functionality. Over three in five respondents believe this is very important and a further three in 10 believe it is moderately important.



Search takes precedence even above an easy-to-use programming guide, which is the number two feature in terms of importance. Over half believe a programming guide is very important, with two in five believing it is moderately important. The order of priorities may reflect perceptions that viewing is shifting away from linear channels – which need a programming guide – to non-linear on-demand consumption – which requires search functionality.

The other features rated are, in order of precedence of their rating by our respondents: pause live TV functionality; integration of on-demand services with the linear programming guide; cloud-based video recording; control by phone or tablet app; access to a comprehensive store of third-party internet apps; access to a selection of apps chosen by the operator; client-based video recording and voice control.

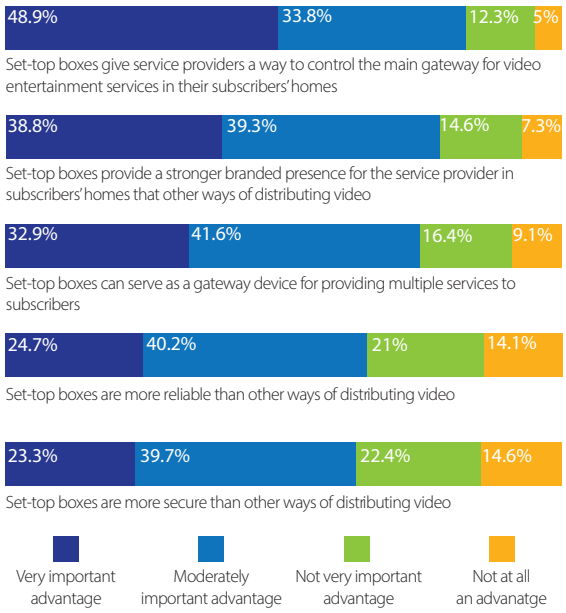
While all these features are seen as important to varying degrees by a majority of survey respondents, a substantial minority believe that client-based video recording and voice control are either not very or not at all important.

Key takeaway

Search functionality is the most highly rated technical feature of video service providers' offerings in the view of survey respondents, followed by an easy-to-use programming guide.

According to our survey respondents, the main advantages of deploying set-top boxes are that they allow service providers to control the main gateway for video entertainment to the home and they provide a stronger brand presence than any other video delivery mechanism.

3. What are the main advantages of deploying set-top boxes?



We asked survey respondents to rate the advantages of offering set-top boxes for service providers themselves.

Two advantages stand out. The first is that deploying set-top boxes gives service providers a way to control the main gateway for video entertainment services in subscribers' homes. The second is that set-top boxes provide a stronger branded presence for the service providers than any other way of getting video into subscribers' homes.

Another key advantage of deploying set-top boxes, though not quite as highly rated as the first two, is that they can serve as a gateway device for providing multiple services to subscribers.

Respondents are, relatively speaking, more lukewarm about two other possible advantages, rating them as only of moderate importance. First, set-top boxes are more reliable than other ways of distributing video. Second, they are more secure than other ways of distributing video. This may indicate that doubts about the reliability and security of OTT delivery are dissipating over time.

Key takeaway

Set-tops still provide advantages for service providers by giving them control of the entertainment gateway to the home – the device that is plugged into HDMI1 – and by providing them with a strong brand presence.

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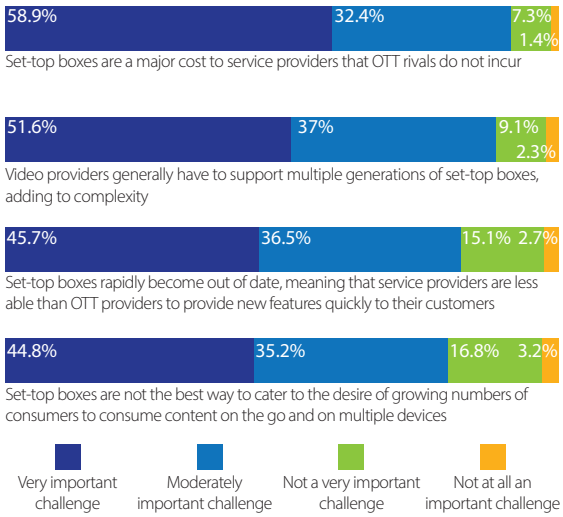
4. What are the disadvantages of set-top boxes compared with OTT TV delivery?

The biggest disadvantage that set-top boxes pose for service providers compared with relying on OTT delivery is that they are a major cost that the OTT TV provider does not have to incur. That at least is the view of our survey respondents, nine out of 10 of whom see this as very or moderately important – with three in five viewing it as very important.

The second biggest disadvantage for service providers is that investing in boxes usually means they have to support multiple generations of devices, adding to complexity – and potentially limiting their ability to deploy new features and functionality universally.

A related disadvantage, also rated as of high-to-moderate importance by respondents, is that set-tops rapidly become out-of-date, meaning once again that service providers are less able than OTT rivals to launch new features quickly.

Finally, rated lower than the others as a disadvantage but still seen as of high-to-moderate importance, is that set-tops may not be the best way to enable subscribers to view content on the go on multiple devices – something that users increasingly want to do.

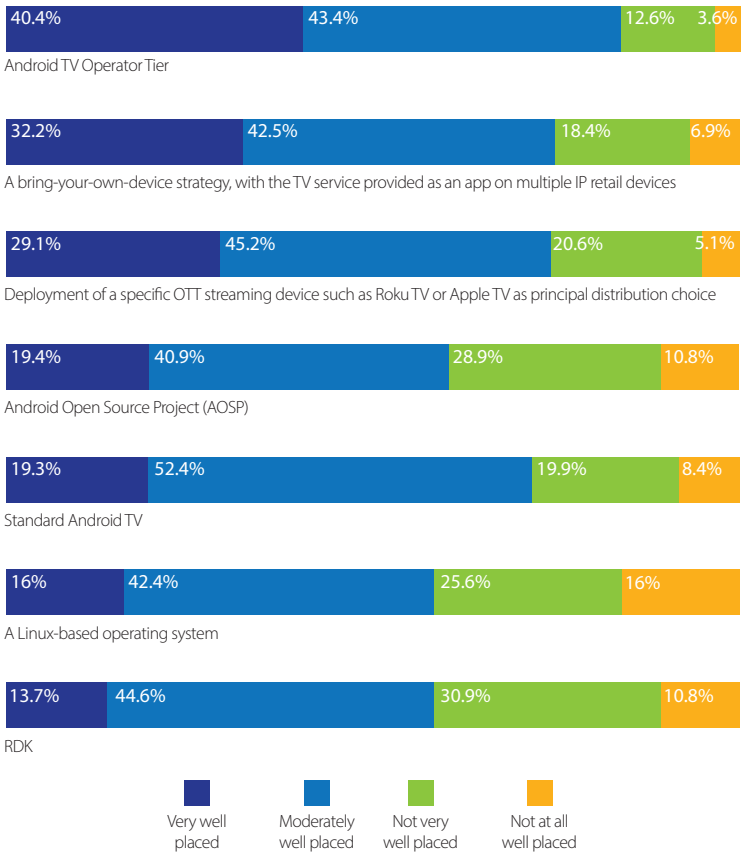


Key takeaway

There are multiple disadvantages to set-top boxes for service providers, but the most important are the cost and the need to support multiple generations of devices.

84%
think Android TV Operator Tier meets service providers' needs

5. What set-top box operating systems or technology choices best meet service providers' needs?



Many of the disadvantages of the set-top box compared to OTT TV delivery are related to cost and complexity. The technology choices service providers make will have a significant impact on this.

We asked respondents to rate a number of set-top operating systems, alongside other potential technology choices they might make to deliver services to the home.

Android TV Operator Tier is a platform that has grown in popularity and which combines access to the Google Play store with the ability of service providers to customise the look and feel of the service. It emerges as the top choice, edging two OTT TV options – deployment of an OTT streaming stick such as Roku TV or Apple TV, and a TV-as-an-app bring-your-own-device strategy – into joint third place.

It is a mark of Google's success in marketing itself as a partner for service providers that two other Android TV options take fourth and fifth place in the list. These are the Android TV retail offering and the Android Open Source Project.

Next in the list of preferred options are proprietary Linux-based operating systems.

RDK – the Comcast-driven initiative to develop a standard set-top platform primarily for the cable industry – comes last. The low ranking of RDK may reflect its perceived cable-centricity. This was also the technology that had the poorest recognition or level of knowledge among our survey respondents.

Key takeaway

Android TV Operator Tier is the top choice of set-top solution for service providers. Respondents believe the Android TV set-top is superior to OTT alternatives, despite scepticism expressed elsewhere about the long-term viability of the set-top box.

6. What are the main advantages of Android TV Operator Tier for service providers?

What makes Android TV Operator Tier such a popular choice for service providers at a time when deploying a TV service without any kind of set-top is increasingly viable?

For survey respondents, Android TV Operator Tier has many advantages. The most highly rated are the ability to quickly integrate popular third-party apps and the ability to get services up and running quickly. Other highly rated advantages include the ability of service providers to give prominence to their own content and services, and the ability to create a user experience that is unique to them.

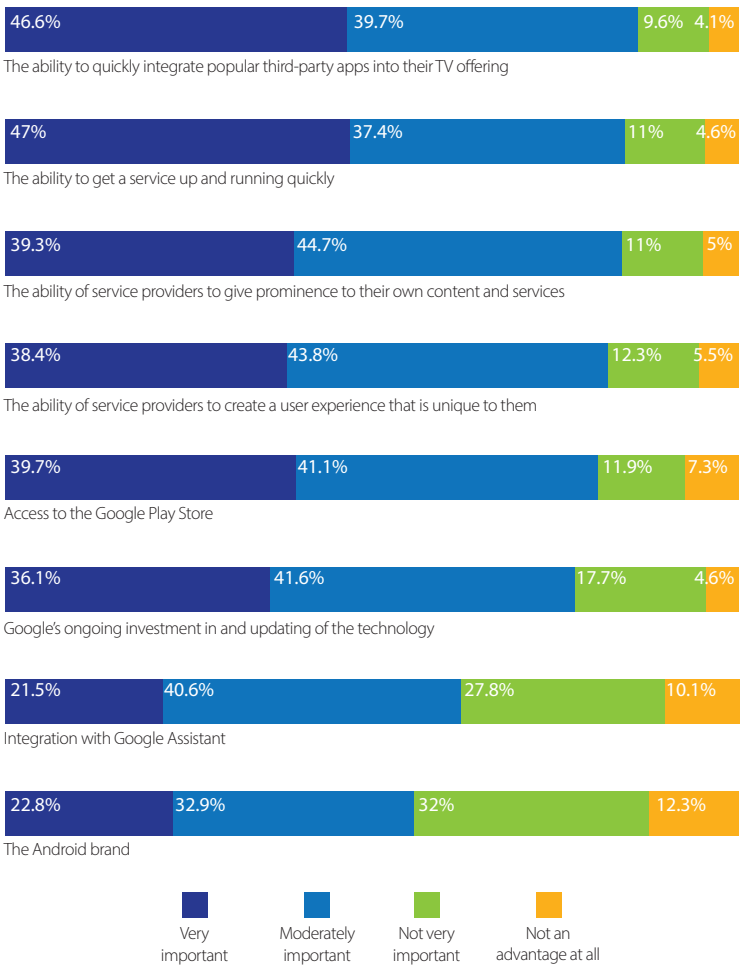
Access to the Google Play store – something that is unique to Android TV that sets it apart from rival technologies – is also highly rated. At a time when service providers are leaning towards an aggregator model for their TV offerings, the ability to integrate apps – and the range of choice that the Google Play Store brings – are seen as key.

Google's ongoing investment in and updating of the technology is also seen as an advantage – a sign that concerns about support for operators are being laid to rest.

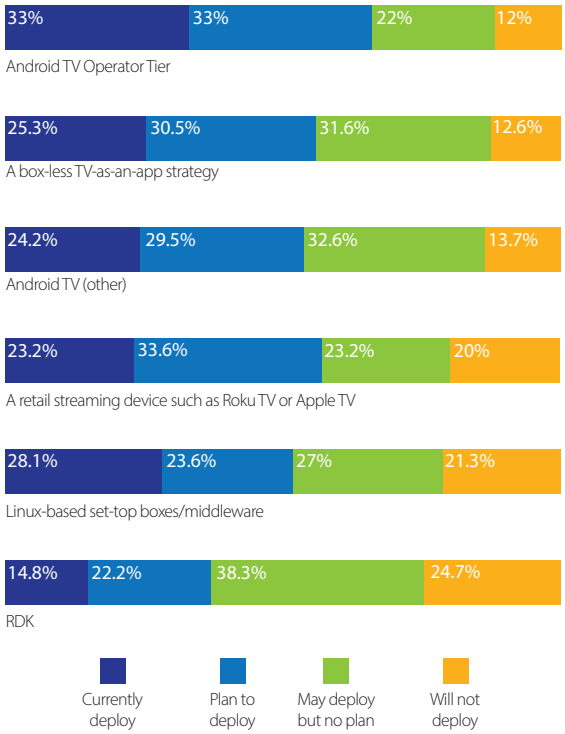
Less important to respondents is the Android brand, where opinion is more divided as to whether this is an advantage or a disadvantage to service providers – although a narrow majority lean towards seeing it as an advantage.

Key takeaway

Android TV Operator Tier has many advantages for service providers, but the biggest are access to third-party apps and speed to market.



7. What set-top technologies do you as a service provider currently deploy?



Service providers among our survey respondents had deployed a number of set-top and OTT delivery solutions: Android TV Operator Tier; Android TV (other); Linux-based set-tops and middleware; RDK; box-less TV-as-an-app; and retail streaming devices such as Roku TV or Apple TV.

Android TV Operator Tier is the most widely deployed solution, and also the solution most likely to be planned for future deployment among those listed.

Linux boxes and middleware came second in terms of deployments, but a significant number of respondents also said they had no plans to consider this option in the future.

The other two most popular options in terms of deployment or plans to deploy were a box-less TV-as-an-app strategy and Android TV (other). A number of respondents had deployed or planned to deploy streaming devices, but some also said they would not consider this.

RDK was the least popular solution both in terms of actual deployments and scored highest in terms of the number of respondents who said they would not deploy this solution.

Key takeaway

Android TV Operator Tier is the most popular TV delivery solution among respondents to our survey.

In summary

Respondents to our survey are, on the whole, downbeat about the future of the set-top box as a delivery vehicle for TV services. The box is seen as expensive – it is the biggest capex item for pay TV providers – and inflexible, with operators often saddled with multiple generations of devices that complicate launches of new features and functionality.

For TV providers, the most important of these features and functions are, in the view of survey respondents, a comprehensive search function and an easy-to-use programming guide. Access to third-party apps – whether selected by the service provider or via an open app store – is also seen as important.

While many features can be delivered via the cloud, set-top boxes provide a reliable way of delivering advanced functions. For service providers, they also offer control of the home's entertainment gateway and implant the brand in consumers' minds.

Despite scepticism about whether the set-top has a long-term future, respondents rated Android TV Operator Tier not only as the best set-top box operating system but as a superior way of delivering TV than relying on an OTT streaming stick or adopting a bring-your-own-device strategy. The popularity of Android TV reflects a shift in service provider strategies towards an aggregation model, bringing in multiple apps of popular services that viewers want to access alongside traditional TV channels. It also reflects a desire on the part of service providers to operate with maximum flexibility and speed in an increasingly competitive market.

Sponsor comment

Hans-Jürgen Desor, CEO, iWedia

iWedia's vision is to be, jointly with our customers, successful in the digital transformation era.

The enjoyment and satisfaction of end users play a key role here, and we are proud to be working with Google, operators and other ecosystem partners to make it happen.

Despite the ubiquity of content and users' mobility, the living room is still the place where the user experience and quality are the number one criteria. The set-top box – powered by iWedia software – is still best-placed to achieve this goal.

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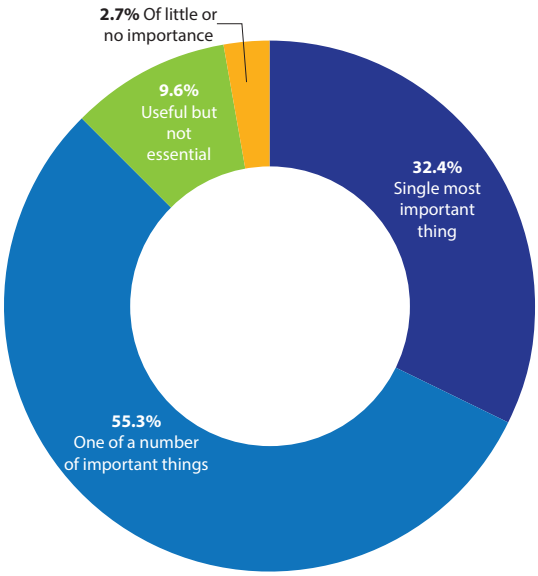
WiFi – the next frontier

The in-home network could be a potential barrier to the adoption of advanced services and service providers have an incentive to optimise this to reduce churn and enable take-up of added value offerings.

We asked our survey respondents about their expectations related to how important WiFi is as part of a competitive service offering, and how service providers can enhance in-home WiFi and use it as the foundation to deliver on the promise of next-generation smart home services.

1. How important is it for service providers to deliver a superior WiFi experience



Delivering a superior WiFi experience is one of the most important things that broadband service providers must do, according to the vast majority of our survey respondents.

A third of respondents believe that a superior WiFi experience is the single most important thing that service providers must do, while 88% believe that it is either the most important or – at the very least – one of a number of service provider priorities.

Only a very small minority of respondents think that a superior WiFi experience is not essential for service providers, and fewer than 3% of respondents think that it is of little or no importance.

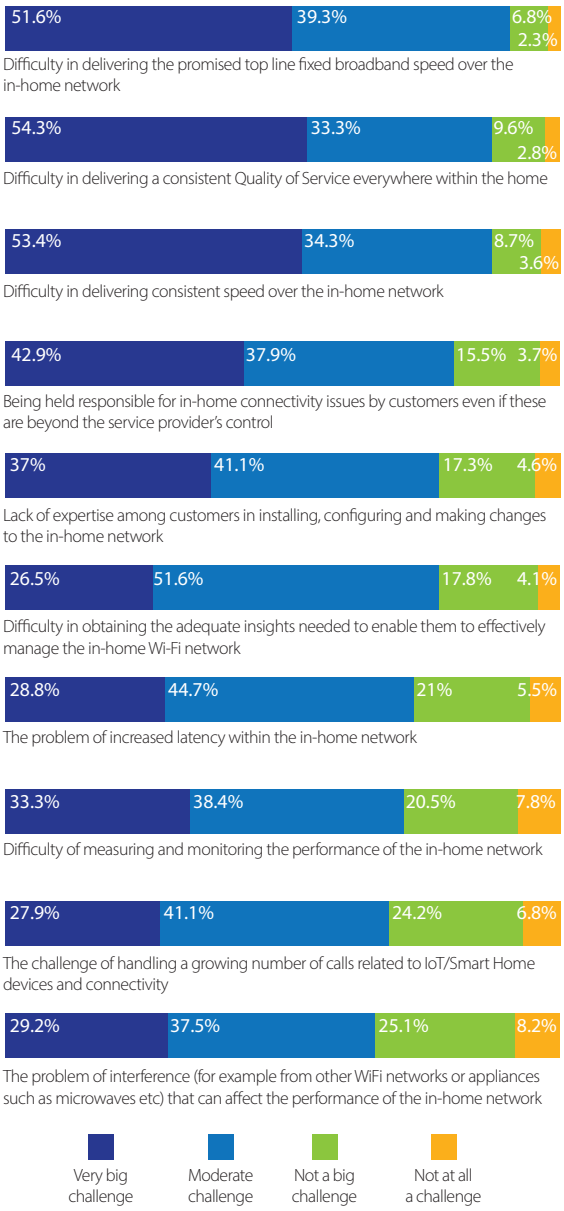
32%

of survey respondents believe that delivering a superior WiFi experience is the single most important thing broadband service providers can do.

Key takeaway

Delivering a superior WiFi experience is one of the most important priorities for service providers in the view of our survey sample – something that should be no surprise given growth in the number of internet-connected devices and the growing importance of multiscreen consumption of high-bandwidth content.

2. What are the main challenges in the way of delivering WiFi connectivity in the home?



We asked survey respondents to rate a number of challenges in the way of delivering a superior WiFi experience in terms of their importance.

The challenges we identified can be grouped in three broad categories in light of the results – urgent, very important and moderately important. Among the urgent challenges are difficulty in delivering the promised top-line fixed broadband speed over the in-home network, difficulty in delivering consistent speed in the home, and difficulty in delivering consistent Quality of Service everywhere in the home.

In the 'very important' category, challenges include the not-unrelated issues of being held responsible for in-home connectivity issues by customers even when these are beyond the service provider's control, and lack of expertise among customers in installing, configuring and making changes to the in-home network.

Finally, in the category of challenges that can be described as 'moderately important', are the problems of increased latency within the home network, difficulty in obtaining adequate insights needed to effectively manage the in-home network and the (related) difficulty of measuring and monitoring the performance of the in-home network.

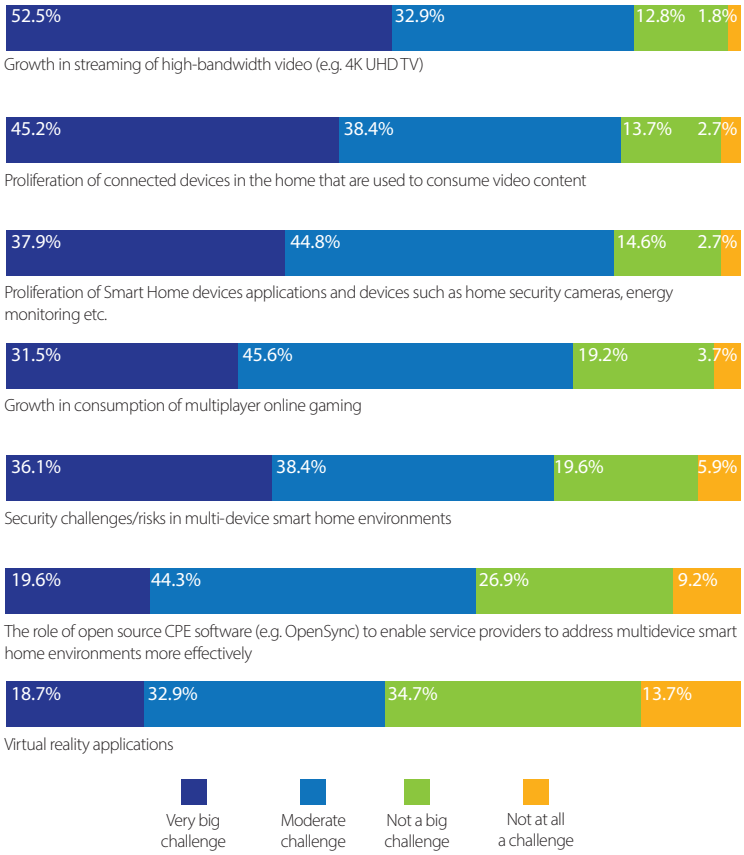
Slightly further down the list of priorities, but still in the moderately important category, are the challenge of handling a growing number of customer calls related to IoT/smart home devices and connectivity and the problem of interference from other networks or home appliances that can affect the performance of the in-home network.

Key takeaway

There are many challenges in the way of delivering high-quality connectivity within the home, but the most important are related to consistency – delivering the promised top-line speed and delivering consistent performance within the home.

> Delivering the promised broadband top-line speed and delivering consistent performance within the home are the most important challenges service providers face, in the view of our survey respondents.

3. How challenging or important to service providers are new applications and consumer habits?



Survey respondents were asked to rate a number of applications and consumer trends for their impact on in-home connectivity and the challenges they pose.

Growth in streaming of high-bandwidth video stands somewhat apart from the other applications and trends in terms of its impact, with over half of respondents identifying this as a very important challenge for service providers.

Video also figures in the second most-important challenge – the proliferation of connected devices in the home that are used to consume video content.

Other important challenges include the proliferation of smart home devices and applications such as home security and energy monitoring, growth in multiplayer online gaming and the security risks posed by smart home environments.

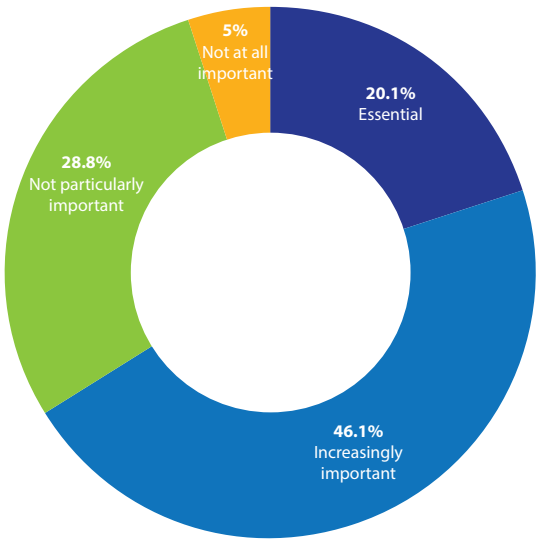
Survey respondents also identify the role of open source CPE software such as OpenSync to enable service providers to address multi-device smart home environments more effectively as important, even if this falls under the category of opportunities for operators rather than challenges.

Of much less importance, in the view of survey respondents, is virtual reality applications, perhaps reflecting a perception that VR has been overhyped as a key consumer trend.

Key takeaway

Video is the most challenging application facing service providers in terms of in-home connectivity. The challenge is driven both by growing consumption of high-bandwidth video such as UHD TV and by the growing number of devices over which video can be consumed.

4. How important is it for service providers to support the Smart Home?



As IoT devices achieve critical mass and big tech companies look to capture the market and 'own the home' we asked our survey respondents how important they believe it is for service providers to support smart home technology as a differentiator.

Some 46% of respondents acknowledged that the smart home is increasingly important, but do not yet believe that it is an essential part of service providers' offerings.

About a third of the sample are more sceptical: 29% believe that a smart home offering is not yet particularly important as a differentiator for broadband service providers, while 5% believe that a smart home offering is not at all important.

Nevertheless, a smaller group – about 21% of respondents – believe that a smart home offering is indeed now essential as a differentiator for broadband service providers – a significant segment given that this market is still in its infancy.

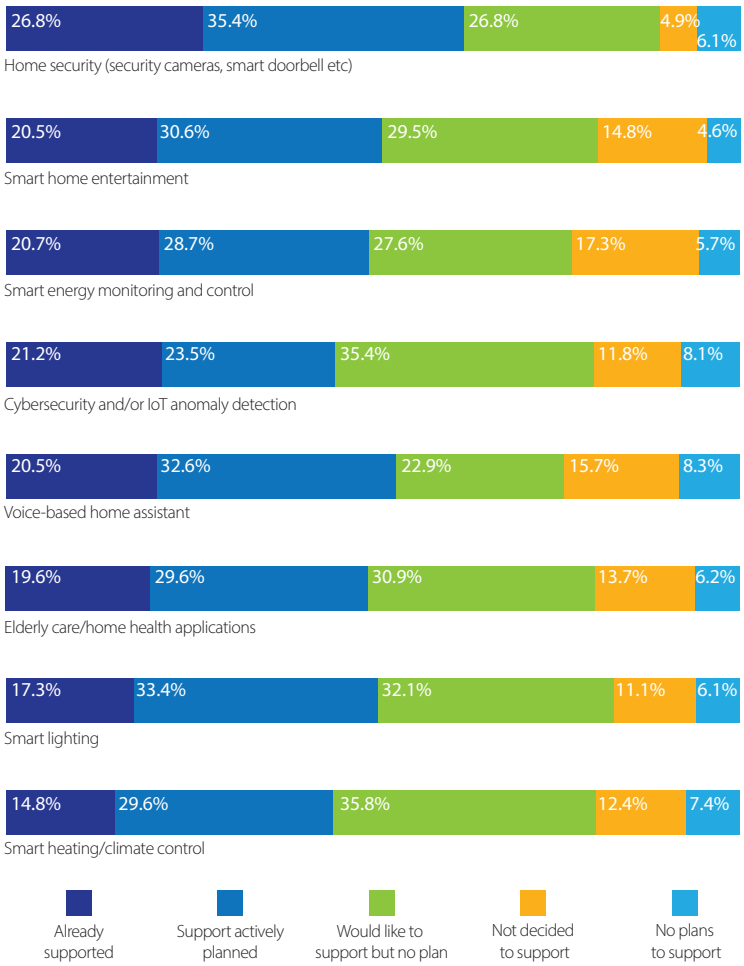
Key takeaway

It is too early to see the smart home as an essential element in service providers' portfolio in the view of the majority of our sample. However, a significant minority believe otherwise, acknowledging that if service providers don't enter this market, the gap will be left for others to fill.

66%

believe it is either essential or increasingly important for service providers to support the Smart Home.

5. Which smart home applications do service providers currently support?



Digging deeper, we asked service provider respondents to identify which smart home applications they currently support, which they intend to support and which they do not aim to support at all.

Among respondents for whom the question is relevant, the most commonly supported application is home security, offered by 27% of respondents, while the least likely to be supported is smart heating/climate control and smart lighting.

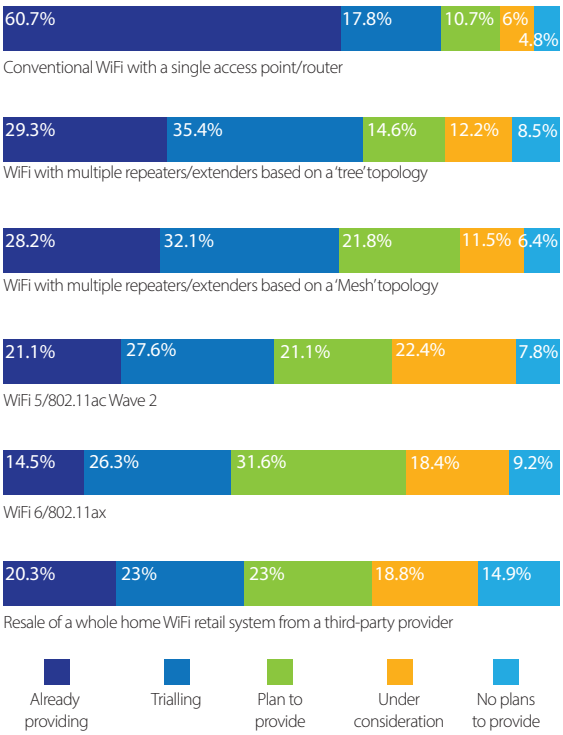
There is relatively little to separate the other applications in terms of levels of actual or potential support by service providers. In most cases, the most common responses of service providers in our survey sample were either that they actively plan to support the application or they would like to support it but do not currently have a plan in place.

In short, service providers have a high level of interest – and in some cases are actively planning – to support a broad range of smart home applications, but only a minority have actually deployed services so far.

Key takeaway

There is a high level of interest among service providers in supporting a wide range of smart home applications, with home security leading the way, but the majority are still at the planning or pre-planning stage.

6. What technologies are you using to support residential WiFi networks?



We asked service provider respondents which technologies they have deployed to support residential WiFi, which they intend to deploy and which they have no plans to deploy.

The most common deployment by far was conventional WiFi with a single access point and router, which has been deployed by over 60% of respondents. Some 29% have deployed WiFi with multiple repeaters/extenders based on a classic 'tree' topology, while 28% have deployed the same based on a 'mesh' topology. Some 35% said they were trialling or testing multiple repeaters/extenders based on a tree topology, and 32% said the same for a mesh topology.

Adoption of advanced WiFi technologies such as WiFi 5 (802.11ac Wave 2) and WiFi 6 (802.11ax) was more limited. Some 21% said they had deployed WiFi 5, with a further 28% saying they are trialling it, while 14% said they had deployed WiFi 6, with 26% saying they are trialling it.

A significant minority say they have resold a whole-home WiFi retail system from a third-party provider. Some 20% have adopted this solution to the challenge of delivering a superior WiFi experience, while 23% say they are trialling it and the same number are planning to adopt this solution in the future.

Key takeaway

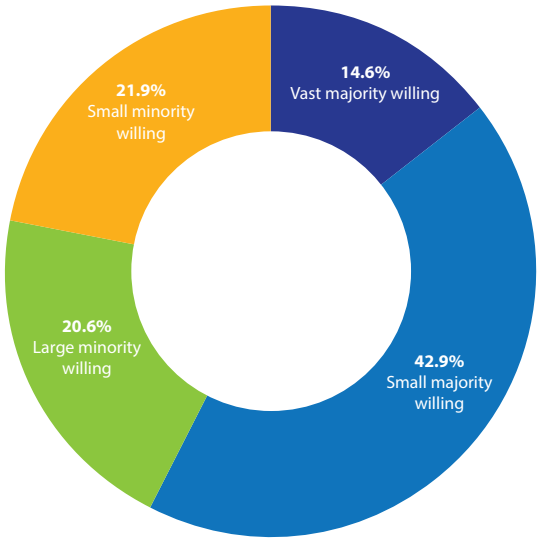
Most service providers are still offering a basic single point-of-access WiFi solution to their consumers and only a minority have deployed more advanced technologies, while a number have outsourced the challenge of delivering advanced WiFi by reselling a third-party solution.

7. Will consumers be willing to pay for a 'premium' WiFi offering?

We asked survey respondents to express a view on whether 'premium' WiFi – high-quality in-home connectivity, offering consistent high-speed and guaranteed service throughout the home – would be something that consumers will pay for.

Three out of five respondents believe that the majority of consumers will pay their service provider for high-quality premium WiFi. Some 15% believe that the 'vast majority' will pay for such a service, while a larger number of respondents – 43% – take the view that a 'small majority' will pay for premium WiFi.

A further 21% of respondents believe that a 'large minority' of consumers will pay for such a service. Only 22% take the more sceptical view that a very small minority of consumers will be willing to pay for such a service.



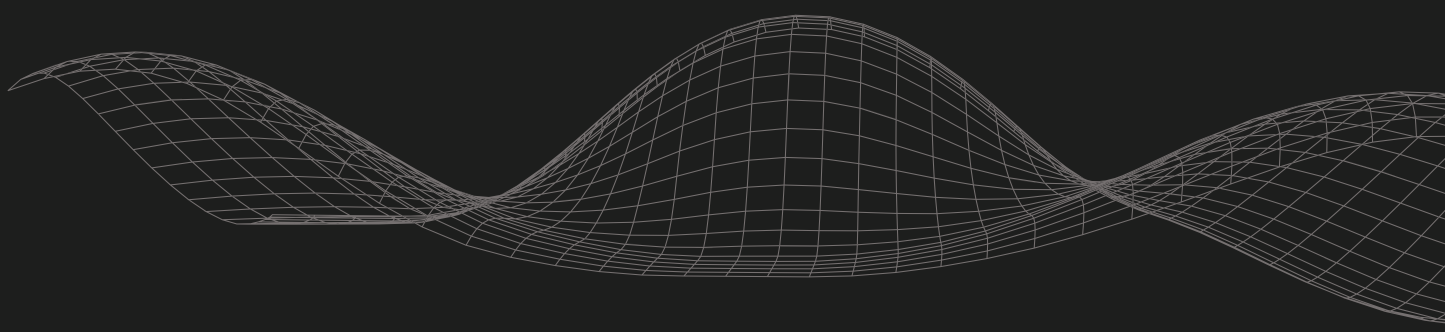
Key takeaway

In the view of respondents, a majority of consumers will be willing to pay extra for a premium WiFi experience.

58%

of respondents believe that a majority of consumers will pay more for a premium WiFi offering.

The smart home is evolving, so should you



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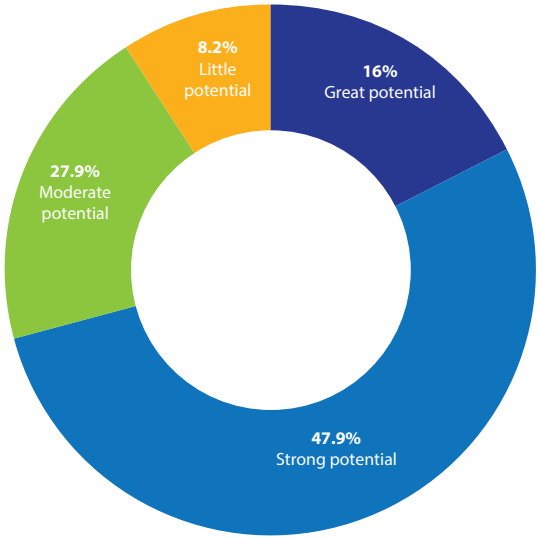
8. Can high-quality WiFi serve as a differentiator for service providers?



Finally, we asked survey respondents to qualify how significant high-quality WiFi can be as a differentiator for broadband service providers.

Three in five respondents believe that high-quality WiFi either has greater potential as a differentiator than any other element of a broadband service, or has very strong potential as a differentiator. Some 16% of respondents believe it has the greatest potential of all elements of a service provider's offering, while a larger number – 48% – believe it has very strong potential alongside other elements of the service.

A further 28% take the view that high-quality WiFi has moderate potential as a differentiator but is less important than other elements of the service.

65%

of our survey sample believe that high-quality WiFI has either the greatest potential or strong potential as a differentiator for broadband service providers.

Key takeaway

High-quality WiFi is a very important differentiator for broadband service providers in an increasingly competitive landscape characterised by commoditisation of broadband access.

In summary

Delivering a superior WiFi experience is now one of the most important elements of service providers' offerings in the view of survey respondents, reflecting the growing importance of whole-home connectivity to consumers.

Service providers are aware that the in-home network can either enhance or damage perceptions about their broadband proposition, irrespective of the strength of their access network and the bandwidth delivered to the home. Delivering consistent in-home connectivity is a key challenge.

Video – particularly the video playback experience on multiple devices – plays a key role in shaping consumer perceptions and delivering high-quality video to multiple devices over the in-home network is a key challenge for service providers.

While only a minority of respondents to this survey believe that a smart home offering is currently an essential element in service providers' offerings, the majority are aware that the smart home is – at the very least – becoming more important, and there is a high level of interest among service providers in supporting quite a wide range of smart home applications, even if large-scale deployments have yet to happen.

Most service providers surveyed still offer only basic WiFi connectivity, although there is interest in using more advanced tools and techniques, driven by growing consumer expectations. Furthermore, a majority of respondents believe that consumers will be willing to pay extra for a 'premium' WiFi offering that delivers superior in-home connectivity.

A majority of respondents believe that high-quality broadband will be a very important differentiator for broadband service providers – something that is particularly salient in a world where price competition and commoditisation of broadband access is intensifying.

Sponsor comment

Fahri Diner, Co-founder & CEO, Plume

Today's service providers see customers using a growing number of connected devices and consuming ever more services from over-the-top technology providers, and they expect their Wi-Fi to meet the demands of these experiences. Those expectations present both a challenge and an opportunity for service providers who often own the obligation of performance but reap none of the benefits of a deepened relationship with their customers.

This survey finds that most providers are still delivering basic Wi-Fi services with a single point of access, rather than more advanced technologies that can deliver improved connectivity on top of an array of services that grow to support Smart Home 2.0. And while a majority believe customers are willing to pay extra for a premium Wi-Fi experience, they also see growing interest in support for smart home technologies, especially home security.

All of this points to a key opportunity: a way to differentiate themselves in an increasingly competitive and commoditised market by offering high-quality Smart Home Services, underpinned by unprecedented Wi-Fi connectivity that's fit for this new era. By making such a platform available now, they will be in a better position to add even more services–entertainment, energy monitoring and control, cybersecurity, voice assistants, and so on–in the future, strengthening their appeal in the face of 21st-century consumer expectations.

Video Quality of experience

Video Quality of Experience (VQE) is a key determinant of how consumers build perceptions about a video service. Streaming service users now expect the same or better quality from their services as has been available via broadcast TV.

We asked survey respondents to express how important they believe VQE to be for service providers, and to identify some of the key factors that determine how good or bad it will be, along with identifying potential solutions.

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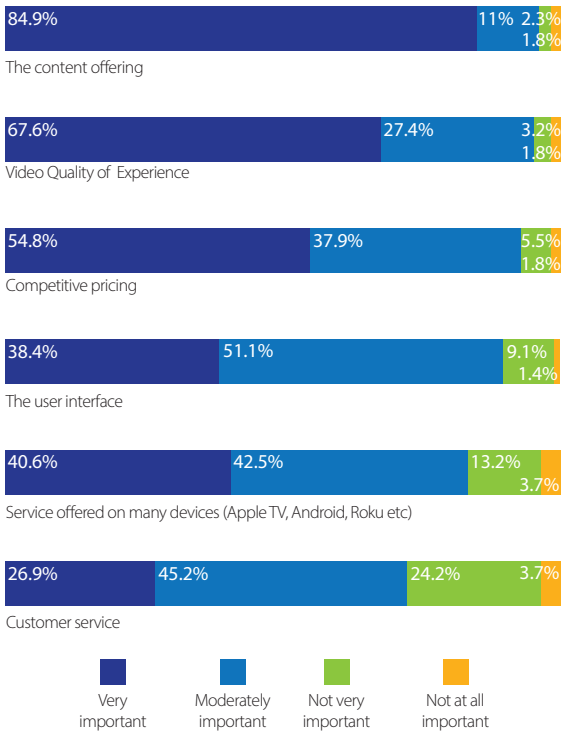
Broadpeak designs and manufactures video delivery components for Content Providers and Network Service Providers deploying IPTV, Cable, OTT and Mobile services. Its portfolio of solutions and technologies powers the delivery of movies, television programming and other video content over managed networks and the internet for viewing on any type of device. The company's systems and services help operators increase market share and improve subscriber loyalty with superior quality of experience.

Broadpeak supports all of its customers worldwide, from simple installations to large delivery systems reaching capacities of several million of simultaneous streams.

Broadpeak is headquartered in Cesson-Sevigne, France.

Learn more at https://broadpeak.tv

1. How important is Video Quality of Experience to the attractiveness of a service?



Video Quality of Experience (VQE) is one of the most important things that determine the attractiveness of a service to subscribers. That at least is the view of our survey sample, which ranks VQE second only to the content offering among the various elements that go into making a service offering appeal to consumers.

Asked to rate the importance of six key elements of a service – VQE, the content offering, pricing, the user interface, customer service and availability of multiple screens – our respondents rated the content offering as the most important, followed closely by VQE, which was rated very important by over two thirds of respondents.

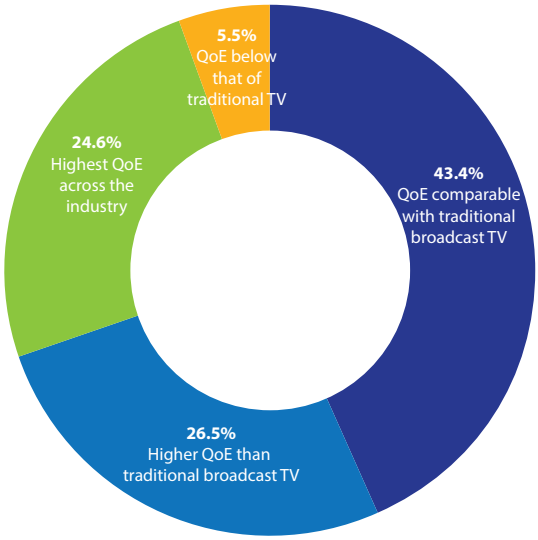
Competitive pricing came third in order of importance in determining whether a service would be attractive to subscribers. Other elements that were highly rated, in order of importance, were the user interface and the availability of the service on multiple devices.

Less important in relative terms was customer service, which was rated as being of moderate importance only in determining the appeal of a service

Key takeaway

VQE is a very important element in determining the attractiveness of a video service to users – ranked second only to the content line-up in the view of our survey respondents

2. What Quality of Experience do viewers expect from a streaming service?



Consumers now expect streaming video services to provide a high level of VQE, according to our survey respondents.

Over half of our survey sample believe that users now expect a higher VQE from streaming services than from broadcast TV, with one in four expecting streaming offerings to provide the highest VQE across the industry.

Of the remainder, over two in five respondents to the survey believe that consumers expect a VQE from their streaming services that is at the equal of the broadcast experience. Only a tiny minority – about 5% of the total – believe that consumers expect a VQE that is slightly below that of traditional broadcast TV.

Key takeaway

Consumers now expect streaming video services to provide a VQE that is as good or better than broadcast TV.

51%

of our survey sample believe consumers expect streaming services to provide a higher Quality of Experience than broadcast video.

3. What impact does VQE have on service providers' revenues?

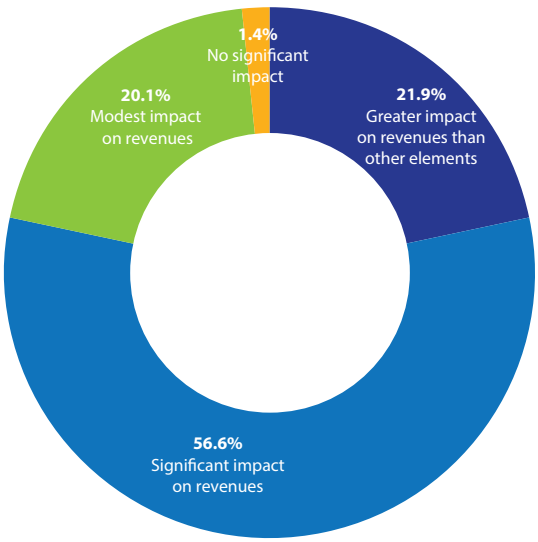
Our survey sample believe that VQE has a massive impact on service providers' revenues, with over three quarters of those surveyed taking the view that it is one of the most important elements in terms of its impact.

22%

of survey respondents believe that Video Quality of Experience has more impact on revenues than any other element of a video service.

One in five respondents believe that VQE has a greater impact on revenues than any other element of a video service, while almost three in five believe it has a significant impact on revenues alongside other elements of a video service.

Only a minority believe that VQE has a modest impact on revenues compared with other elements of a video service. One in five respondents take this view, while only 1% of respondents take the view that VQE does not have a significant impact on video service providers' revenues.



Key takeaway

VQE is one of the key elements of a video service – and possibly the most important of all – that have an impact on service providers' revenues.

4. How do service providers measure Video Quality of Experience?

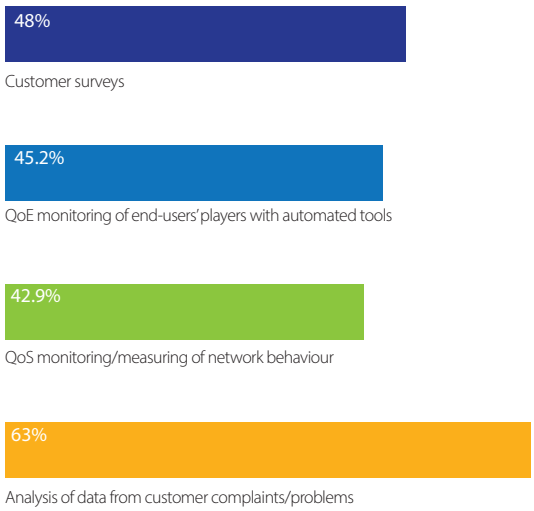
We asked survey respondents to identify the ways in which they currently measure VQE on their own video services.

The results show that a reactive approach is still widespread among service providers and that the use of VQE technology still has some way to go before its adoption is universal.

The most popular method of measuring VQE remains analysis of customer complaints and problems, cited by 63% of respondents, followed by customers surveys, cited by 48%.

Only a minority of service providers appear to employ a more proactive technology-based approach. Some 45% of those surveyed said they used Quality of Experience monitoring of end users' players with automated tools, while 43% said they had implemented Quality of Service monitoring/measuring of network behaviour.

Service providers used – on average – two methodologies each to measure VQE, indicating that a significant number may rely on a combination of reacting to customer complaints married to the use of customer surveys, rather than deploy technology solutions.



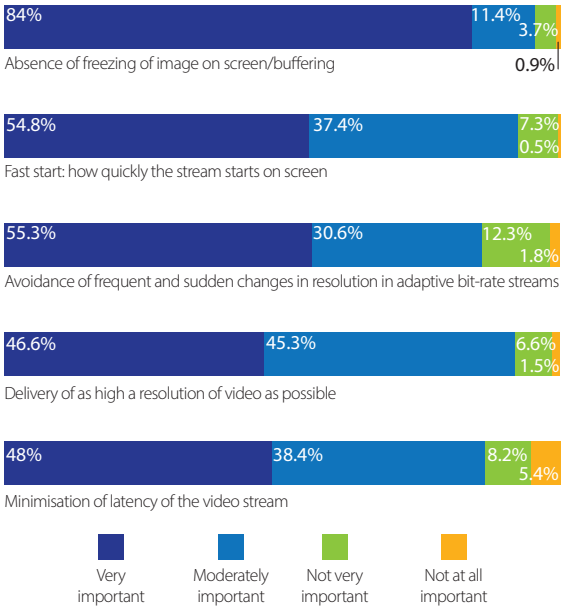
Key takeaway

Many service providers still rely on responding to customer complaints, as well as surveying their customers, to measure VQE, despite the availability of technology to enable them to measure video and network performance.

63%

of respondents look to customer complaints as a way to monitor Quality of Experience.

5. What is important for VQE in video streaming?



Respondents were asked to rate a range of elements – fast start time, absence of freezing or buffering, delivery of high-resolution video, avoidance of frequent and sudden changes in resolution and minimisation of latency – that go towards building Video Quality of Experience for their relative importance.

In view of heightened expectations about what a streaming service should provide, the absence of freezing or buffering of the image is seen as the most important element in VQE.

Second overall is the need for fast start times – how quickly the stream starts on screen. Consumers also have diminished tolerance for slow start times – meaning that service providers have to perform the difficult balancing act of avoiding freezing while reducing delays in the video starting to play.

Avoidance of frequent and sudden changes in resolution in adaptive bit-rate streams – a hazard in particular for live event streaming – comes next, closely followed by the need to deliver as high a resolution as possible. The implication is that service providers must perform another difficult balancing act – delivering consistency in resolution at the same time as providing the best possible resolution.

Minimising latency – currently a major preoccupation amid the proliferation of live-streaming sports services – completes the list. The vast majority of service providers also rate this as either very important or moderately important.

Key takeaway

Eliminating freezing and buffering is a *sine qua non*, but many inter-related elements are important for VQE and service providers must perform a balancing act to deliver a service at optimal quality.

6. Where are problems relating to VQE most likely to come from?

Problems with VQE can originate at many points in the delivery chain. The most likely source, however, according to our survey respondents, is the CDN, with over half of respondents believing this is a very significant source of problems.

Inadequate operator network capacity is also seen by survey respondents as a likely source of problems.

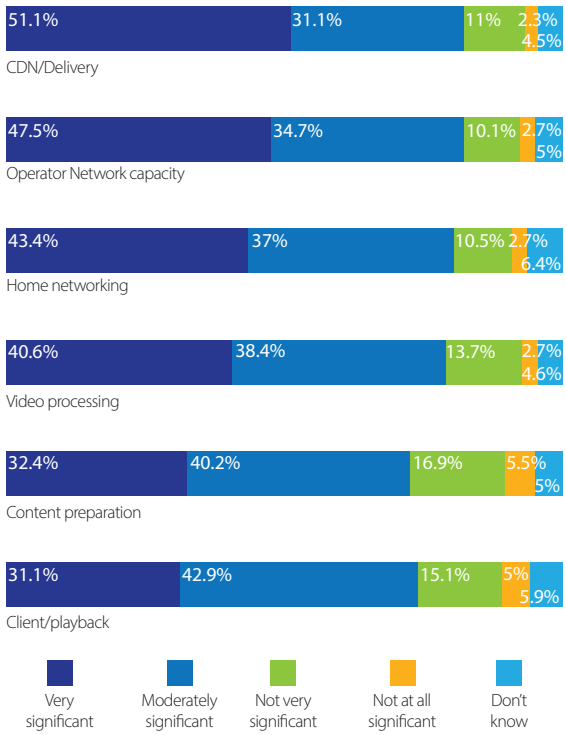
The in-home network comes next in the list, alongside the video processing part of the delivery workflow.

The start and end of the delivery chain are less likely as the source of problems – at least in relative terms. Nevertheless, our survey sample believe that issues can arise with content preparation and with client playback – with over seven in 10 respondents seeing these as either very significant or moderately significant sources of problems.

Awareness of the likely sources of problems was relatively high among our survey sample , with only around 5% admitting to not being knowledgeable enough to express an opinion in relation to each of these elements, a figure that rose slightly in the case of the in-home network and client playback.

Key takeaway

Problems with a negative impact on VQE can arise anywhere in the video delivery chain, but the CDN and the service provider network are seen as the most likely sources of failure.



We know you're struggling to generate more revenue in a highly competitive market. We also know you need to support more content for more users on an increasing number of devices. Do you think the solution entails a substantial infrastructure investment? We believe the answer is no. And we want to show you why.

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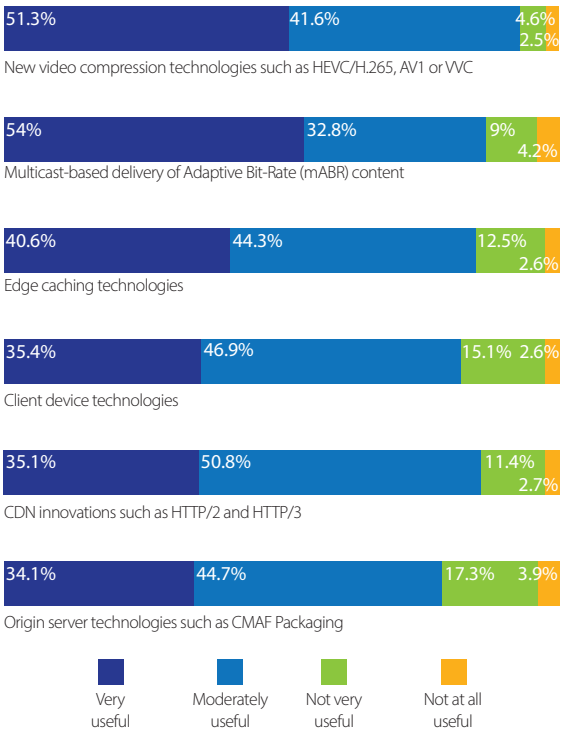
7. What tools are useful to delivering high VQE?



Respondents were asked to rate a range of technologies and tools that could potentially be used to mitigate VQE problems.

The most useful innovation to help mitigate or solve VQE issues, in the view of respondents, comes in the form of new video compression technologies such as HEVC/H.265, AV1 or VVC. Such technologies can help tackle the problem of constrained bandwidth by reducing the amount of bandwidth required to deliver video streams efficiently.

Video compression techniques were closely followed, in terms of their perceived usefulness, by multicast-based delivery of adaptive bit-rate content and edge caching technologies. Client device technologies came next in the line-up, followed by CDN performance-enhancing innovations such as HTTP/2 and HTTP/3, which deliver improved data streaming.

Trailing some way behind, though still perceived as useful, was origin server technologies such as CMAF (Common Media Application Format) packaging – the use of a common media format for streaming media to reduce cost, complexity and latency. The (comparative) lack of enthusiasm for CMAF may be linked to the fact that a larger proportion of respondents are also lacking in awareness of this technology than is the case for other tools and techniques in the list.

Key takeaway

Multiple tools and technologies exist to smooth the path of delivering video to the home and providing VQE. There is however more interest in technologies that can immediately deliver bandwidth savings such as new compression technologies.

In summary

VQE is one of the most important – possibly the most important – elements that determine how attractive a service is to subscribers, according to our survey respondents, and consumers now expect VQE of streaming video services to be as good or better than traditional broadcast video.

VQE also has a direct impact on service providers' top line, with three quarters of survey respondents believing it has a greater impact than any other element of a video service. Freezing and buffering of the stream is believed to be the most important element within VQE that can have a negative effect on viewer perceptions and subscription decisions.

Despite this, many service providers have not invested in VQE technology and rely on consumers complaining to highlight issues. There is a lingering uncertainty about the main causes of VQE issues, but CDN and access network performance is believed to be key by survey respondents.

A majority of respondents are generally aware of tools that can be used to combat VQE problems.

Sponsor's comment

Xavier Leclercq, VP, business development, Broadpeak

What I find striking is how quickly expectations are evolving: the survey confirms that Streaming (ABR) is not a challenger anymore. The industry now expects a streaming experience superior to broadcast.

In the context of consumers being sensitive to any disruption inherent to ABR delivery [freezing, buffering, video resolution (including changes), and latency] - we understand why the Video Quality of Experience (VQE) is a crucial aspect of video offerings, and why most respondents link it directly to revenues.

Broadpeak believes that through innovation, the status quo can be challenged, the consumer experience can be improved and the industry pushed forward.

One example is the nanoCDN™ solution for multicast delivery of ABR content; originally engineered for scalability, most customers today deploy the technology to improve quality, reduce latency, start-up times, and rebuffering. Leveraging the company's experience, DVB is currently standardizing the technology.

Broadpeak is now celebrating its 10-year anniversary in a position of leader when it comes to video experience: a broad range of video services rely today on Broadpeak technologies - including Tier-1 telcos, large MSOs, satellite carriers and global content providers.

Going forward the company will continue to put quality at the heart of its strategy, with further innovations such as Dynamic Edge Caching and S4Streaming. Stay tuned!

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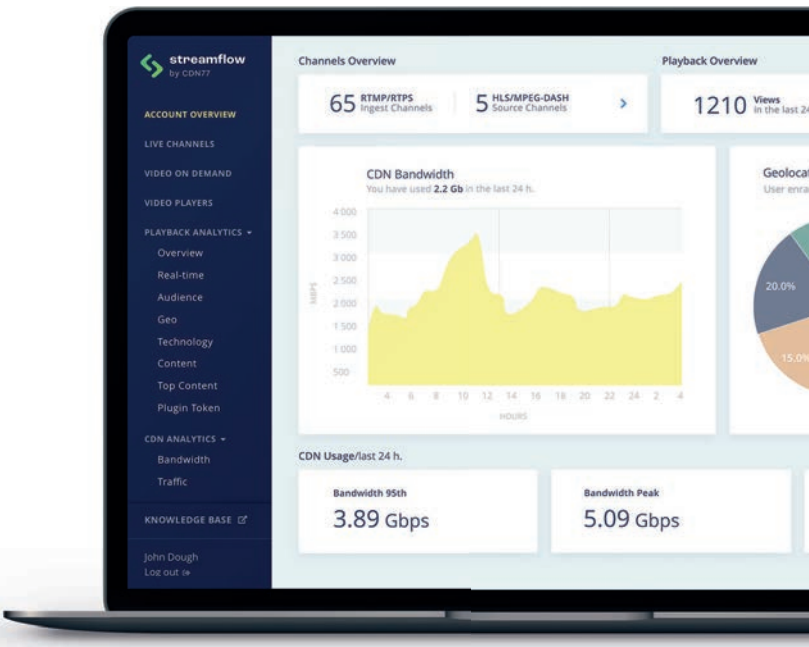

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