

# Digital TV<sup>Europe</sup>

## Summer Survey 2021



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# INTRODUCTION

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Summer Survey 2021

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## EDITOR'S NOTE

### Taking the temperature

Welcome to Digital TV Europe's inaugural mid-year survey.

Regular readers of our publications will be familiar with our annual survey of our audience of industry insiders, carried out between December and January, where we ask our readers to share their views across a range of some of the topics where interest is at its most intense.

Because it's impossible to cover all topics in one survey, and because things over the last couple of years have changed so rapidly, this year we decided to run a mid-year survey, garnering the views of industry executives in August and September.

The findings that follow summarise the views of 200 industry executives representing multiplay operators, streaming companies, pay and free TV broadcasters, technology companies and other industry stakeholders from 35 countries. Job titles of participants included chairman and CEO, chief marketing officer, operations director, senior engineer and many more.

The range of topics covered include a broad survey of top trends in the overall landscape, and a more detailed look at the phenomenon of super-aggregation, a study of the growth in live-streaming, a look at the impact of AI and ML on the ability of service providers to keep their customers and a survey of views on the smart home -as-a-service and its place in the portfolio of service providers' offerings.

The results are presented in a new format with simplified charts, data pullouts and key takeaways, along with – for the first time – summaries of personal viewpoints of our respondents.

Stuart Thomson, Editor

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## Executive summary

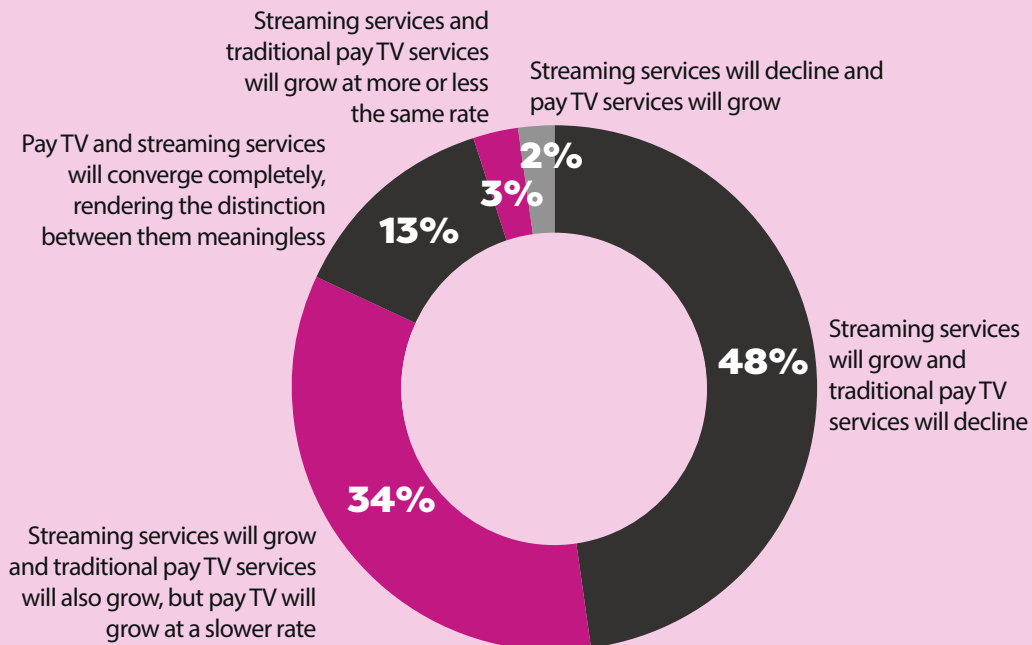
**After an extraordinary year, our mid-year survey of industry insiders shows that some trends remain constant, despite (or because of) the impact of the global pandemic, while others, such as an upsurge of interest in advertising, are more prominent. Our respondents believe that:**

- Streaming services are likely to grow, and pay TV will likely decline.
- Among major industry developments, growth in addressable advertising and big majors' investment in their own streaming services will have the biggest positive impact in the next two years.
- Ever-increasing bandwidth, assisted by improved video compression technology, will have the biggest positive impact among technology changes set to occur in the next couple of years.
- SVOD remains the business model with the best prospects for growth.
- Netflix and Disney are the companies that had the biggest impact on the video distribution business over the last year.

# THE DIGITAL TV LANDSCAPE

## How strong are the prospects for pay TV services globally in the next two years?

**KEY TAKEAWAY** Streaming services will grow and pay TV will likely decline.



**Some 48% believe that streaming will grow and pay TV will decline, a proportion that has grown since our last survey on this.**

### WHAT DOES THE DATA TELL US?

Almost all respondents to our survey believe that streaming services will continue to grow over the next two years. The only division of opinion concerns the likely trajectory of traditional pay TV.

Some 48% of respondents – the largest group by some margin – believe that streaming services will grow and traditional pay TV services will decline – a proportion that has grown since our last survey on this in 2020. A substantial minority of 34% of respondents believe that streaming services and traditional pay TV will both continue to grow.

Interestingly, the view that pay TV and streaming services will converge to render the distinction meaningless is held only by a small minority of 13% of respondents, despite highly publicised moves into IPTV by major international broadcast groups and national players. The results indicate that streaming and pay TV are seen as competitors rather than as complementary, a change in emphasis on previous survey results on this.

### PERSONAL VIEWPOINTS

There is a general consensus among survey respondents that streaming services will grow, with many believing, in the words of one, that “streaming services will grow more than pay TV” because “in streaming, you can choose what to watch”.

One respondent made the point that technological development favours streaming and gives content providers an incentive to use this as their primary distribution technology: “This has helped them to minimise costs and maximise profits – going for live-streaming helps one grow the audience faster than having to budget for traditional pay TV broadcasting [infrastructure].”

For another respondent, “access to faster broadband will encourage greater streaming uptake” but pay TV operators have an opportunity to benefit by aggregating services. “The splintering of the streaming market will allow pay TV to present itself as more of a one-stop shop; consumers will soon tire of subscribing to multiple streaming services just to watch one programme on each,” said this respondent.

Some respondents believe that pay TV still has a future. “Traditional pay TV will keep growing but at a slower rate as there is some subscription fatigue. There are ample [numbers] who still prefer traditional TV,” said one.

For many, this particularly the case in emerging markets: “There is still a huge potential for pay TV growth in emerging markets, where broadband penetration is low or slow.”



# THE DIGITAL TV LANDSCAPE

## What industry developments will have the biggest impact on the global digital TV business in the next two years?

### WHAT DOES THE DATA TELL US?

We asked survey respondents to rate the importance of six ongoing industry trends in terms of their positive impact on the industry generally: retention of rights by the majors to feed their own streaming services; investment by streamers in sports and other live programming; multi-platform advertising; the growing power of the big tech giants; government attempts to take on that growing power; and the fightback of traditional broadcasters against big tech through consolidation and investment in digital.

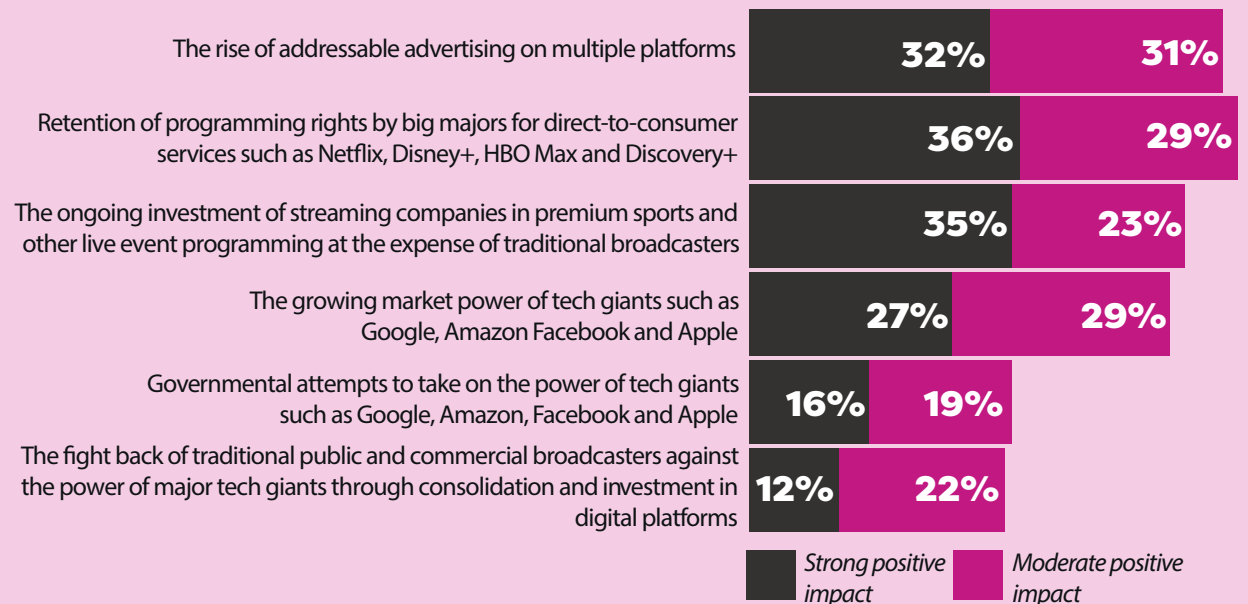
The top score in terms of impact went to the rise of addressable advertising on multiple platforms, with 32% rating this as highly positive and 31% as moderately positive. This most likely reflects a widespread view that addressable advertising can help both traditional broadcasters and streamers to monetise their content much more efficiently and to a greater extent. Relatively few respondents believed that addressable advertising would have a negative impact.

Respondents also believe that the retention of programme rights by big majors for their own streaming initiatives will have a positive impact, with 36% rating it as highly positive and 29% as moderately positive.

Interestingly the growth of big tech is seen as positive by most respondents, although there is a substantial minority that views this as negative. The growth of big tech in this sector is viewed more positively than government attempts to combat it, however, a finding that may reflect the make-up of our universe of survey respondents.

The fightback of traditional broadcasters through consolidation and investment in digital platform is rated as having little or no impact or at best a neutral impact by respondents, evidence that there is considerable scepticism about the ability of traditional media players to adjust to the emerging landscape.

**KEY TAKEAWAY** Among major industry developments, growth in addressable advertising and big majors' investment in their own streaming services will have the biggest positive impact on the digital TV landscape.



# THE DIGITAL TV LANDSCAPE

## What technology developments will have the biggest impact on the global digital TV business in the next two years?

### WHAT DOES THE DATA TELL US?

With streaming set to grow faster than other forms of video distribution, the technology developments that will have the biggest on the business relate to the availability of sufficient bandwidth to deliver these services.

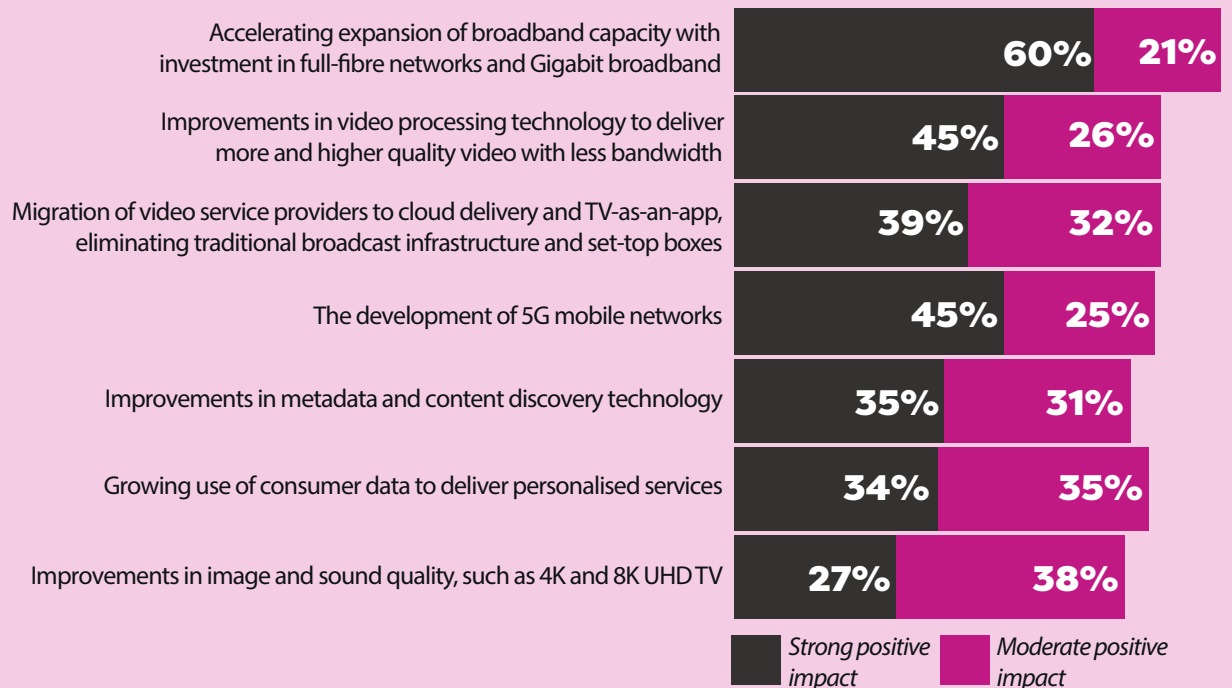
For respondents, the biggest positive impact will come from accelerating expansion of broadband capacity and investment in full fibre networks and Gigabit broadband. Fully 60% rated this as having a strong positive impact.

A companion technology development to expanding bandwidth is improvement in video compression, and this is also highly rated by survey respondents, with 45% rating it as having a strong positive impact and 26% as having a moderate positive impact. Improvements in compression boost the impact of greater bandwidth to expand the space for streaming and direct-to-consumer services still further.

Two other technology developments that respectively enable video service to scale more efficiently and extend their reach come next in the list. Migration of video services to the cloud and TV-as-an-app platforms, which give service providers much more scale and flexibility as well as reducing their costs, is seen as having a positive impact. In parallel, the development of 5G mobile networks helps service providers extend their reach, both through fixed wireless access in hard-to-reach areas and through mobile video.

Growing use of consumer data to deliver personalised services and improvements in metadata and content delivery technology are both seen as having a positive impact, as does improvements in image and sound quality such as 4K/8K UHD, but to a lesser extent.

**KEY TAKEAWAY** As the streaming universe expands, bandwidth is king, assisted by improved video compression technology.



# THE DIGITAL TV LANDSCAPE

## Which types of video service have the best growth prospects over the next two years?

### WHAT DOES THE DATA TELL US?

Mainstream SVOD services still have plenty of room to grow and prosper, according to our survey sample. Some 43% of respondents think general entertainment SVOD has 'very positive prospects' and a similar number think it has 'moderately positive prospects'.

Mainstream SVOD has considerably stronger prospects than other types of service offering, according to respondents. However, niche SVOD services and advertising-supported VOD services are also likely to prosper, in the view of our sample.

Holding to the view that streaming services in general are on a roll, respondents also highly rate the growing phenomenon of free advertising-supported streaming TV (FAST), with 32% of respondents rating it as having 'very positive prospects' and 46% as having 'moderately positive prospects'.

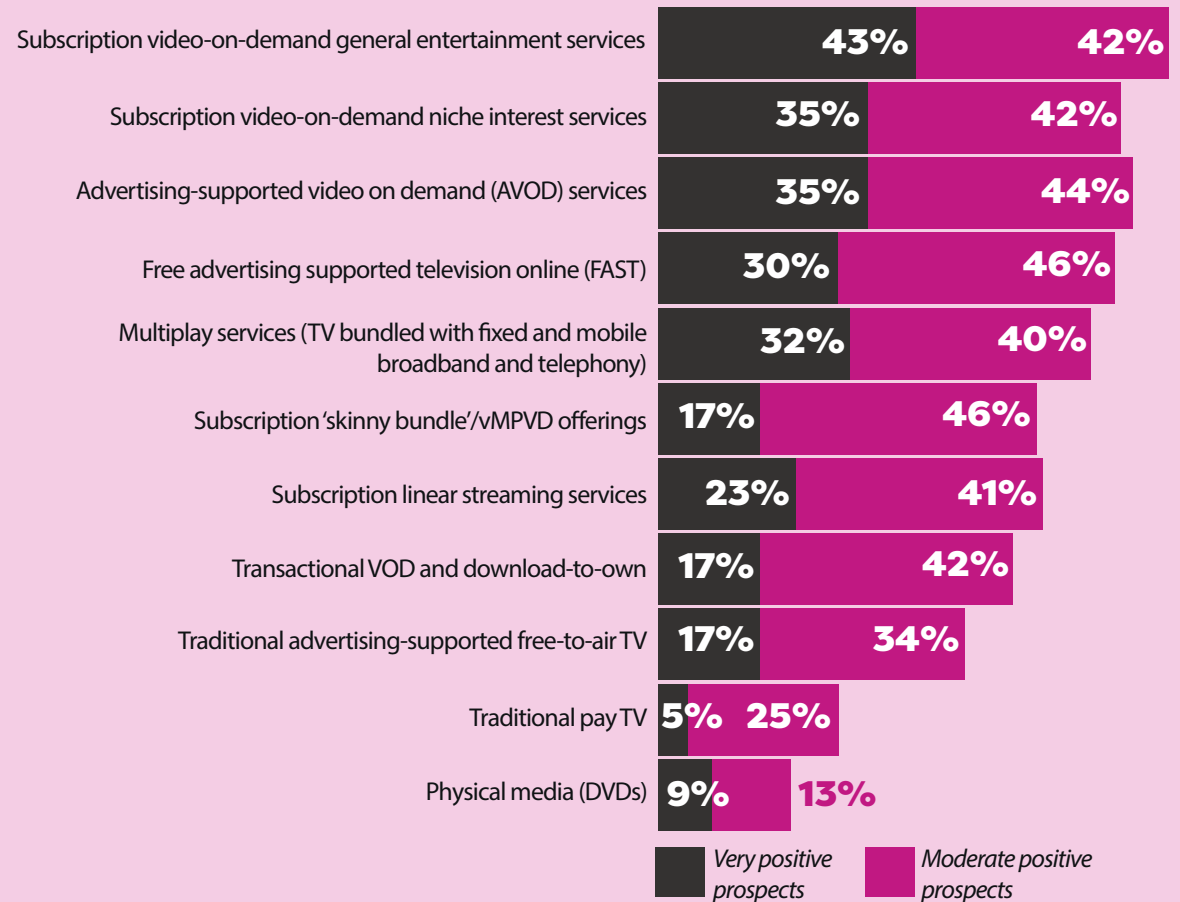
Similarly rated in terms of growth prospects, multiplay services – the now traditional bundle of video, broadband and voice by service providers – receives a vote of confidence from our respondents despite being under pressure due to cord-cutting.

Subscription linear streaming services – a somewhat niche offering as a standalone service – and subscription 'skinny bundle'/vMPVD offerings are similarly rated by respondents, with a broad view that they have moderately positive prospects.

There was somewhat greater scepticism about the prospects for transactional VOD and download-to-own services and traditional advertising-supported free-to-air TV. However, respondents were much more negative about traditional pay TV, which 46% believe has 'moderately negative prospects' and 24% believe has 'very negative prospects'. That translates into seven in 10 respondents who believe pay TV faces a grim future.

Finally, at the very bottom of the list by some margin, stands physical media such as DVDs, which fully 59% of respondents believe has 'very negative prospects'.

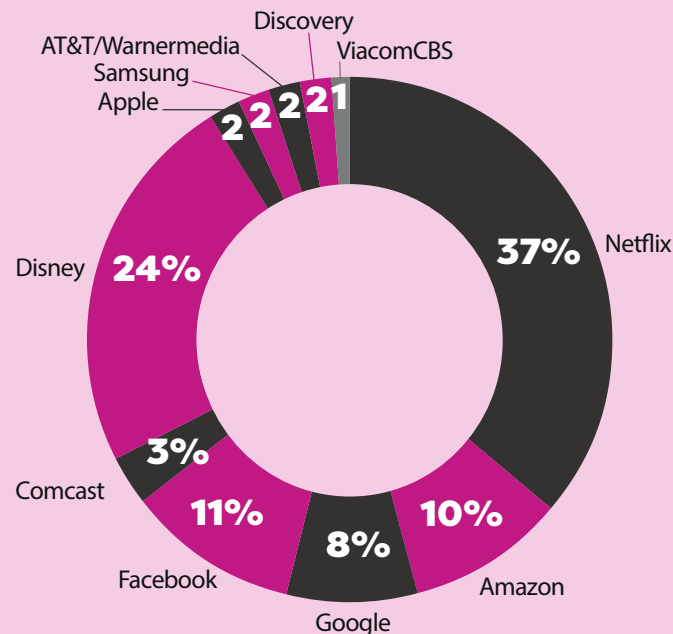
**KEY TAKEAWAY** Subscription video-on-demand remains the business model with the best prospects for growth.



# THE DIGITAL TV LANDSCAPE

## Which company do you think had the biggest impact on the digital video distribution business over the last year?

**KEY TAKEAWAY** Netflix and Disney had the biggest impact on video distribution over the last year.



**For survey respondents, Netflix remains king of the streamers, at least in terms of its impact on the business.**

### WHAT DOES THE DATA TELL US?

The streaming universe is a lot more crowded now than it was a couple of years ago. In Europe, HBO Max is the latest big media streamer to join the fray, competing for consumers' entertainment spend with the likes of Disney+, Discovery+, Paramount+ and Amazon Prime Video, not to mention local players, with others likely to enter the market. Proliferating AVOD and FAST services are meanwhile competing for viewers' time, if not their wallets.

For survey respondents, Netflix remains king of the streamers, at least in terms of its ongoing impact on the business. Netflix is still the biggest player in SVOD, the player with the biggest presence in European markets and the benchmark setter of the streaming universe. Some 37% of respondents vote it the company with the biggest impact. This is however down on the 57% recorded when we asked the same question in 2020.

Catching up in relative terms is Disney, voted as having the most impact by 24% of respondents in this survey. Disney's aggressive approach to growing the penetration of Disney+, that service's wealth of content and innovative and influential multi-brand approach to win over different audience segments has enabled it to increase its audience rapidly.

The others on this list are also runs by comparison. While Netflix and Disney between them capture the votes of six out of 10 survey respondents, the third-ranked company, Facebook, secured 11% of the vote, a notable increase on its previous share.

Facebook's count put it ahead of Amazon, with 10%, by a nose. While Amazon's ambitions as an aggregator in its own right set it apart from others in the field, most of our respondents do not believe that translates into the kind of industry impact that would enable it to rival Netflix or Disney.

Google, whose Android TV universe and position as an aggregator in its own right, via the Google Play Store, continues to have a growing impact on the pay TV world, secured 8% of the vote. Sky and NBCUniversal owner Comcast, Apple, Samsung, AT&T/WarnerMedia and Discovery – all big influential media players – did not secure a significant share of the vote.

## Executive summary

**Super-aggregation in the context of this survey means a strategy that focuses on aggregating apps in a single user experience with universal search and discovery rather than the service provider creating their own channel and content packages, as has traditionally been done by pay TV operators.**

**Survey respondents are of the view that:**

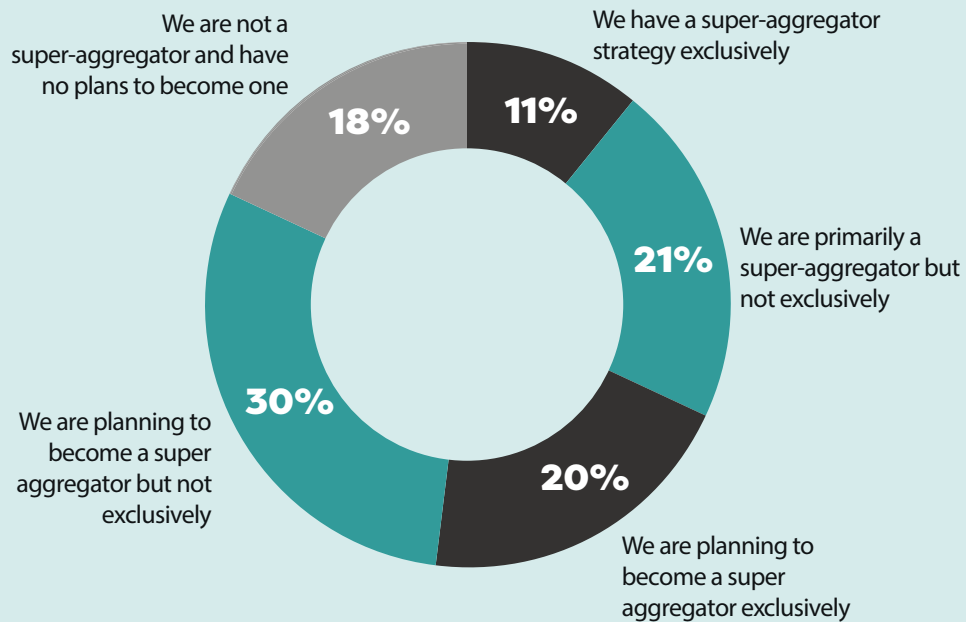
- Most service providers are already super-aggregators or plan to become super-aggregators.
- Aggregating the big-name services is key to success, but local content can help differentiate services too.
- Whether a service provider strikes individual deals or turns to another aggregator to populate its super-aggregator service may depend on the size and market conditions it faces, but individual deals are likely to be preferred where possible.
- Universal search and discovery is the key feature of a successful super-aggregator proposition.
- The most important challenge super-aggregators face is how to stand out in a crowded field.
- Revenue-share models are likely to work best both for service providers and their content provider partners.



Mirada is a leading provider of products and services to telcos, TV operators, broadcasters and video streaming services worldwide. Founded in 2000 and led by CEO José Luis Vázquez, the company prides itself on being a pioneer in the world of digital TV. Mirada's core focus is to provide operators with the ultimate viewing experience for their viewers, by offering an entire ecosystem of end-to-end products across Android TV and Linux set-top boxes, smartphones, laptops, smart TVs and connected devices, delivered with a seamless and state-of-the-art UI.

Mirada's multiscreen technology, acclaimed for satisfying even the most demanding audiences, has been deployed by some of the biggest names in the telco world, including Televisa, Telefónica, Sky, Virgin Media and the BBC. Headquartered in London, Mirada has commercial representation across Europe, Latin America and Asia and operates technology centres in the UK, Spain and Mexico.

## Has your own company adopted a 'super-aggregator' strategy?



**KEY TAKEAWAY** Most service providers are or intend to become super-aggregators, non-exclusively or exclusively.

### WHAT DOES THE DATA TELL US?

We defined a super-aggregator strategy for content as meaning a focus on aggregating apps in a single UX with universal discovery. This stands in contrast to the traditional pay TV model of licensing rights to package channels and content to market to subscribers.

Among the service providers who responded to our survey, the vast majority either already categorised themselves as super-aggregators currently or said they were planning to become super-aggregators.

Some 11% of service provider respondents said they had an exclusive super-aggregation strategy for content, while 21% said they were primarily super-aggregators but not exclusively.

Some 20% said they were planning to become super-aggregators exclusively while the biggest group – 30% – said they were planning to become super-aggregators but not exclusively.

Only a minority – 18% – of service provider respondents said they had no plans to become super-aggregators.

Looked at another way, the data shows that about a third of service providers respondents – 31% – either are or plan to become super-aggregators exclusively, while a larger group – 41% – either are or plan to become super-aggregators but will operate more traditional pay TV services alongside this.

**The vast majority of service providers surveyed are already super-aggregators or plan to become super-aggregators.**



## What is a good ‘super-aggregator strategy’ for TV operators today?

### WHAT DOES THE DATA TELL US?

The term ‘super-aggregator’ can mean a number of things to service providers. There is no one-size-fits-all model.

Service providers can open up to every video offering out there or they can curate a small selection of popular streaming apps. They can build bundles of apps with discounts for committed customers or they can simply act as a shop window for individual content providers. There are numerous variations in between each of these extremes.

Among respondents to this survey the most highly rated strategy is to build partnerships with and integrate the most popular major apps along with a selection of locally relevant content. This could, for example, mean aggregating the likes of Netflix, Amazon Prime Video and Disney+ alongside the on-demand and catch-up services of a particular country’s broadcasters.

Respondents in general believe that the major apps are key to a successful play. The second most highly rated model, some way behind the one described above, is to build partnerships with only the most popular major apps, followed by building partnerships with the most popular apps and a selection of second and third-tier services.

### PERSONAL VIEWPOINTS

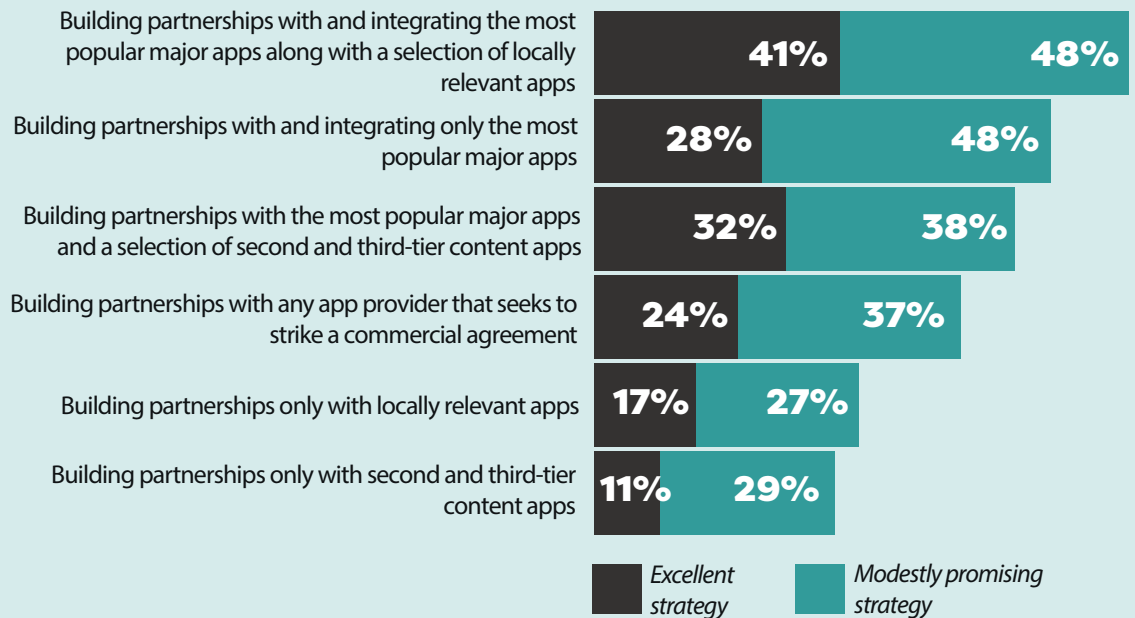
Respondents believe in the efficacy of aggregating popular apps.

“Best to start off with the most popular apps,” says one respondent, who adds that this will encourage users to test out the service and should foster a stable customer base. Another asserts the “need to cooperate with companies that have already gone ahead of you”, which in practice means “the big companies”.

Combining major global services with locally-relevant content is also rated highly. “You need a good mix of both the big global brands as well as local ones to meet the demands of consumers,” says one respondent.

“While major apps are definitely a requirement, there is also a need for local content,” says another, pointing to growing demand in emerging markets especially, where “local content providers and creators and multiplying”.

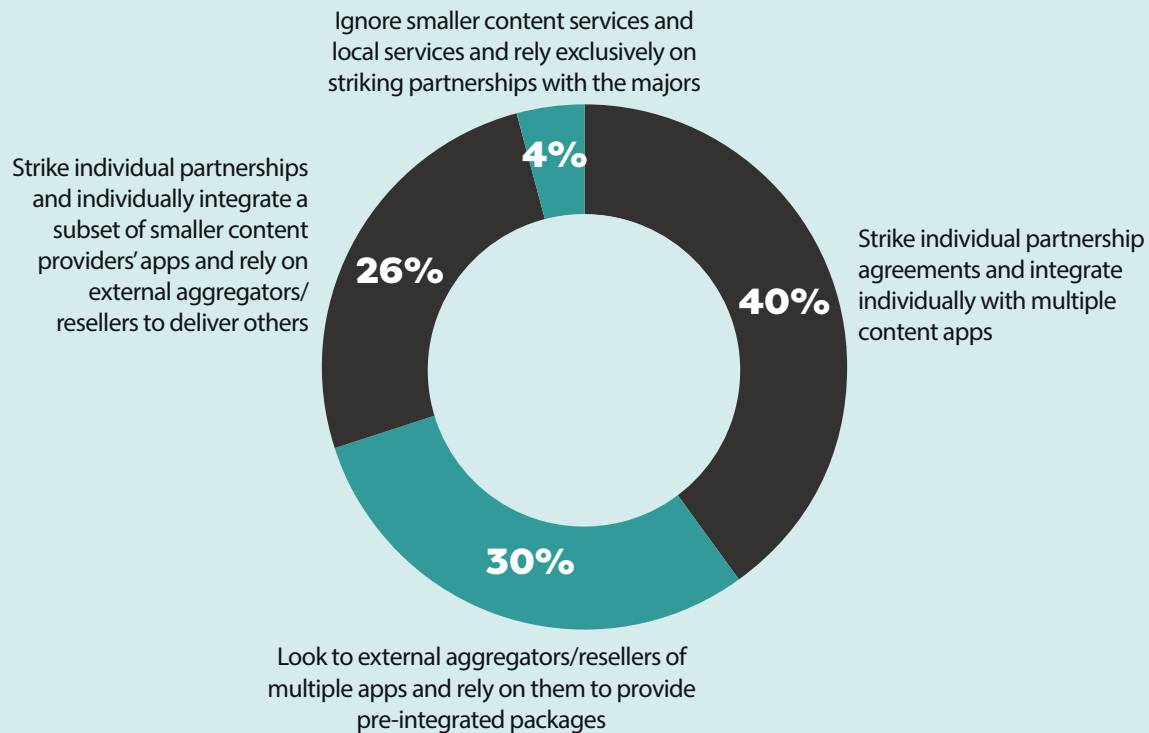
### KEY TAKEAWAY Aggregating the most popular global apps is the key ingredient of super aggregation, but local content can help as an additional differentiator.



One respondent suggests that “a hybrid model... offering local and global content would be the best option” while another endorses the view that “local content could help differentiate”.

Few respondents believe that open platforms with no curation of apps is a fruitful approach. “Simply aggregating services based on volume and not desirability leads to the problem pay TV had of offering hundreds of channels where only a few were consumed,” says one respondent.

## What is the best approach to striking agreements with smaller content providers and local services?



**KEY TAKEAWAY** Respondents are divided between those who favour individual deals with multiple content partners and those favouring agreements with resellers or a hybrid approach.

## WHAT DOES THE DATA TELL US?

If local content is important as a differentiator, or if operators believe that a broader range of services from smaller content providers is an important element of their service, is it better to strike individual deals with individual suppliers or turn to external aggregators to provide a package of different content sources?

For a large number of survey respondents – over two in five – the best approach is to strike individual partnerships with multiple content apps and integrate them individually.

Some 30% believe in relying on external aggregators or resellers and a further 26% believe in a hybrid approach – striking individual deals with a subset of content providers while relying on aggregators for others.

The sharp division between advocates of individual partnerships and those who believe in turning to external aggregators exclusively underlines the differences in opinion of how important local services and other niche content services are to super-aggregators.

## PERSONAL VIEWPOINTS

Many respondents believe that “direct relationships with partners rather than going through another aggregator is always to be preferred”.

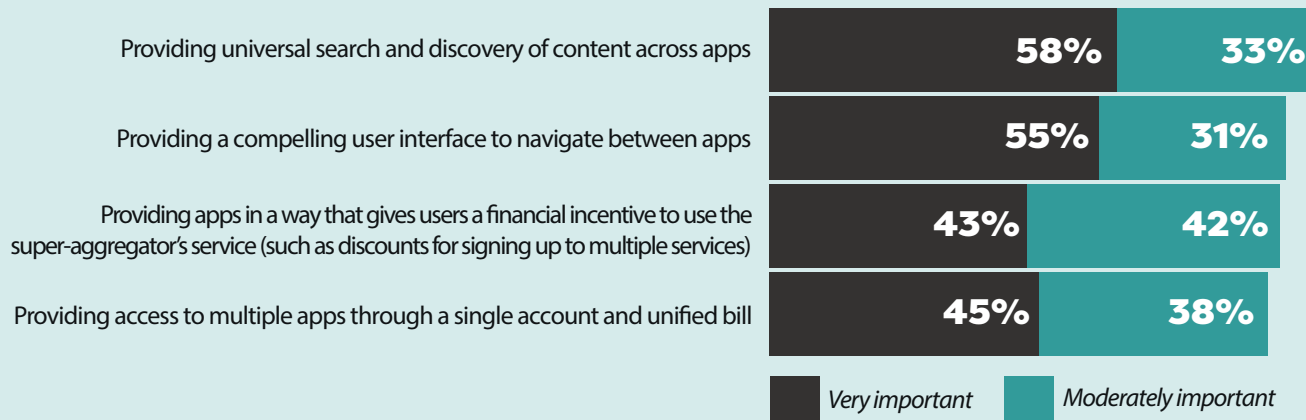
However, there are dissenting voices. “The long tail will need aggregators not just at the content distribution front end but also at the back end of content acquisition,” said one respondent.

A third viewpoint holds that the choice may depend on the size of the service provider concerned. “For Tier 2-3 operators it is easier to work with aggregators like Google or Metrological, even if those aggregators may not yet truly carry local content apps,” said one respondent. “Tier 1-2 operators generally have the staff and subscriber base to justify the pursuit and negotiation of individual agreements that may also include local services pertinent to specific markets.”

However it is done, there is a general consensus that local content is desirable both to differentiate an offering and to provide stickiness and win the loyalty of subscribers.

## How important are different elements of a super-aggregator service to service providers and their customers?

**KEY TAKEAWAY** Universal search and discovery is the most important element in building a meaningful super-aggregator proposition.



**91%**

**of respondents believe that providing universal search and discovery across multiple apps is key.**

### WHAT DOES THE DATA TELL US?

Universal search and discovery across different apps is the glue that holds the super-aggregation proposition together more than any other, in the view of respondents. An absolute majority of 58% rated this as very important while a further 33% rated it as moderately important.

The related feature of a compelling user interface to navigate between apps also scored very highly in respondents' views. Again a majority of respondents rated this as 'very important'.

The other two features considered also rated highly, if not quite so highly as universal discovery and a compelling UI.

Forty-five per cent of respondents said that providing access to multiple apps through a single account and unified bill was very important and a further 37% said it was moderately important.

Similar ratings were given to providing apps in a way that gives users a financial incentive to use the super-aggregator service such as discounts for signing up to multiple services.

The data shows above all that the super-aggregator cannot simply pull different content sources together without adding value. Consumers are capable of aggregating their own services using consumer electronics products such as smart TVs and streaming sticks – and those devices are increasingly provided by consumer electronics and tech giants that aggregate their own content. Service providers need to add value by delivering a more unified experience.

## What is the main hurdle that stands in the way of becoming a successful super-aggregator?

### WHAT DOES THE DATA TELL US?

Respondents were split here. The most important challenge, endorsed as such by 38% of respondents, was the difficulty of standing out from the crowd to differentiate a service with unique functionality, content or pricing.

This is instructive. As super-aggregation becomes the norm for progressive fixed-access network service providers, so it is likely that offerings will converge, focusing on a few key services such as Netflix and Disney+ along with local content.

For service providers that adopt Google's Android technology or the Metrological app store for RDK devices, putting enough content before subscribers is not generally a problem, but differentiating yourself from others doing the same might be.

The challenge of technically integrating multiple apps in a single compelling user experience is key for providers, rated most important by 32% of respondents.

The difficulty of striking mutually beneficial commercial partnerships with content providers is another factor that can impede would-be super aggregators – particularly smaller players – and 30% of respondents rated this as the biggest challenge.

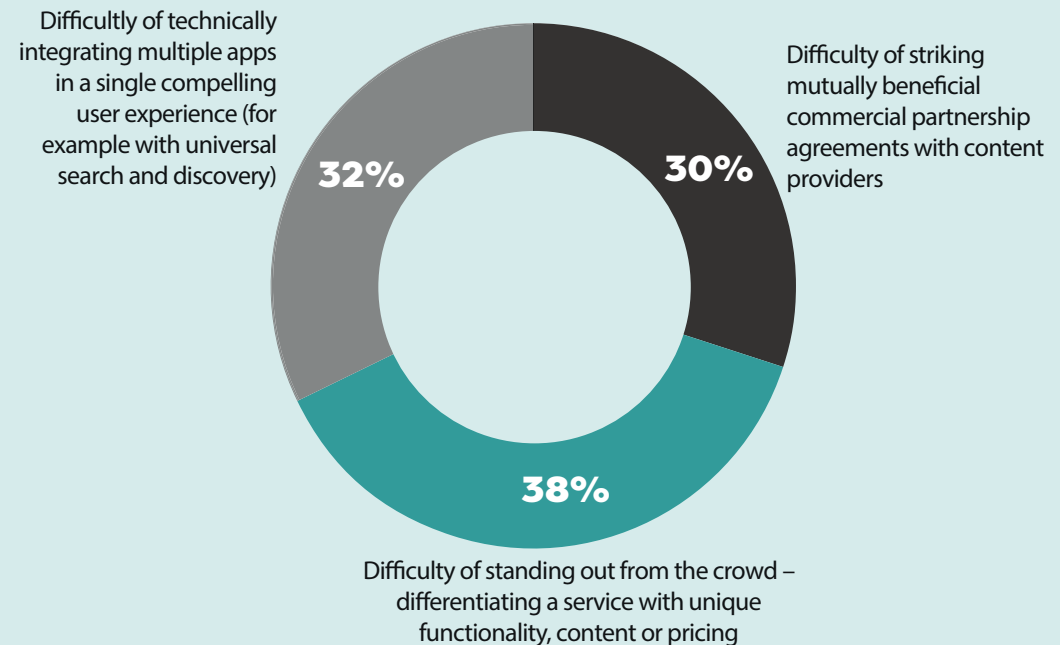
### PERSONAL VIEWPOINTS

Many respondents believe that differentiating your service in an increasingly crowded field is challenging. "Assuming 'everybody' is able to provide a super-aggregated solution the difficulty is then how to differentiate," said one.

There is less agreement about solutions. One respondent suggested that service providers may ultimately look to content to differentiate their offerings as providing a truly differentiated user experience becomes more challenging. However, another argued that it is "unlikely that exclusive content deals will prevail since it reduces the potential for distribution" for content owners. A third respondent said that "content and the UX" will both be key in the battle for differentiation.

However, delivering a compelling UX that spans different apps is itself challenging. One respondent pointed out that different providers use different metadata and each app has a different user experience. It is difficult to combine these elements in a single overarching UX.

**KEY TAKEAWAY** There are a number of challenges facing super-aggregator service providers but one of the most important is standing out in a crowded field.



**“Respondents believe that differentiating a super-aggregated service is a major challenge but there is less agreement about potential solutions.”**





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## Which type of partnership works best for service providers?

### WHAT DOES THE DATA TELL US?

We asked respondents to assess three types of partnership: a revenue-share model, which involves deeper integration of content services with the service provider's offering; a resale model where subscribers can sign up for services individually but are billed for them collectively; and an 'access-only' model, where streaming providers open up their boxes to third parties but without single billing.

In assessing which type of partnership model service providers are likely to favour, the answer from survey respondents is clear: a revenue share mode where service providers and content partners divide the spoils and co-market the content, for example with bundling and discounts, works to their best advantage.

Some 55% of respondents favour this model, over twice the number that favour the next most popular – a resale model, where customers can sign up for streaming services individually but benefit from single billing from the service provider.

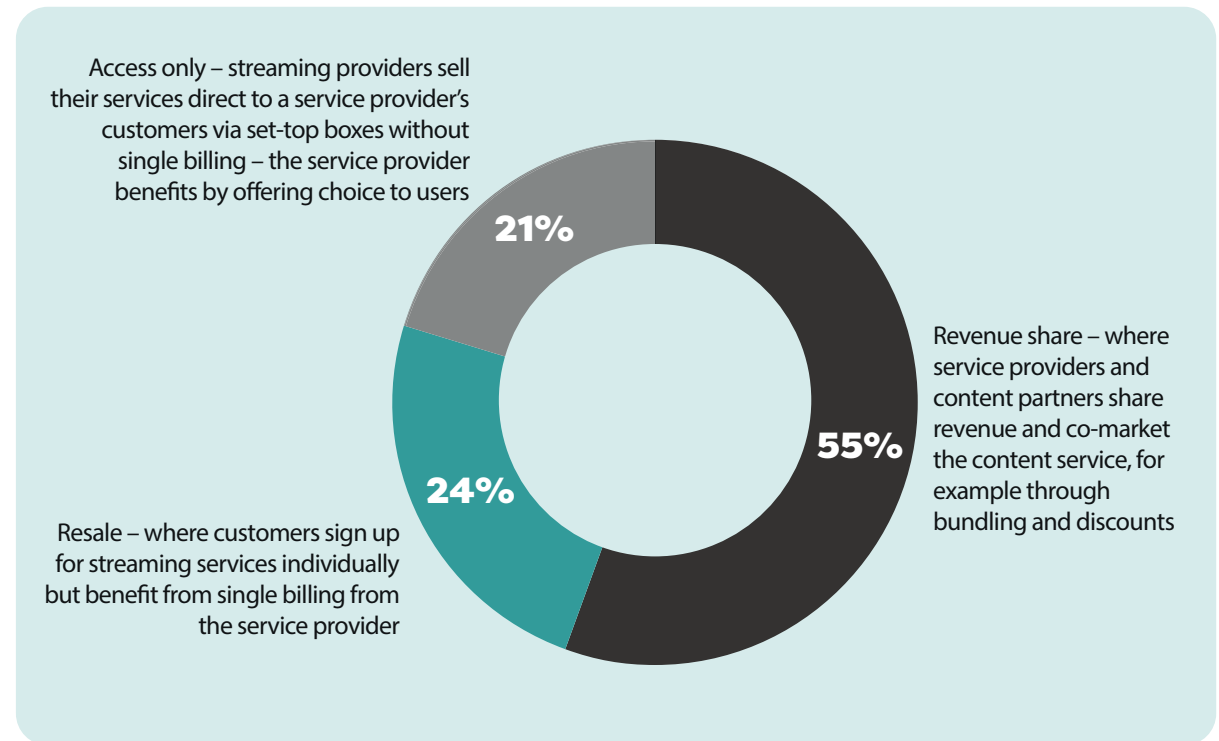
The results are unsurprising. From the perspective of the service provider, a revenue share provides a clear incentive to invest in aggregating content offerings, in consumer premises equipment and UX development. It enables them to make a measureable difference to their top and bottom line by providing third party streaming services to their base, as against the less tangible benefits of simply providing access to these services without a monetary return.

### PERSONAL VIEWPOINTS

For many, revenue-share works to the advantage of service providers.

"The revenue share model would be the best approach," said one respondent, while another was of the view that such a model would also "help smaller content providers" by allowing them access to service provider technology.

### KEY TAKEAWAY The revenue-share model works best for service providers.



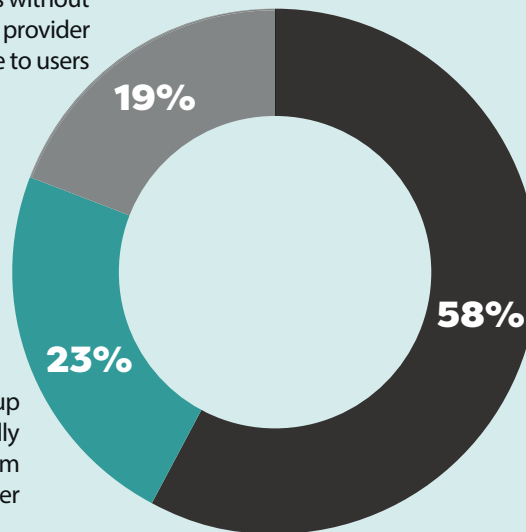
**An absolute majority of respondents believe that a revenue-share model works to the best advantage of service providers.**



## Which type of partnership model works best for content providers?

**KEY TAKEAWAY** The revenue-share model also works best for content providers.

Access only – streaming providers sell their services direct to a service provider's customers via set-top boxes without single billing – the service provider benefits by offering choice to users



Resale – where customers sign up for streaming services individually but benefit from single billing from the service provider

Revenue share – where service providers and content partners share revenue and co-market the content service, for example through bundling and discounts

**A substantial majority of respondents believe that a revenue-share model works best for content providers.**

### WHAT DOES THE DATA TELL US?

Perhaps surprisingly, respondents believe even more strongly that a revenue-share model between service providers and their content partners works to the benefit of the content partner. Some 58% say that a revenue-share model will work best for the content supplier, while 23% endorse a resale model and only 19% argue that an access-only model works best.

### PERSONAL VIEWPOINTS

One respondent felt that a revenue-share partnership “reduces the business/financial risk both for the content providers and the service providers” while another pointed out that customers prefer to deal directly with the service provider.

Deep partnerships that include sharing costs as well as revenues work for one respondent “as long as the cooperation is robust”. For another, sharing revenue will help keep costs down”.

One respondent argued that revenue share would be a “good content provider model” particularly for larger players, and contended that “content suppliers will make less from each platform but will be on many more platforms”. Revenues from ad-funded services could also profitably be shared, this respondent said.

## Executive summary

**Respondents to our survey believe live-streaming, specifically sports, has strong potential to capture and engage audiences. In particular, they are of the view that:**

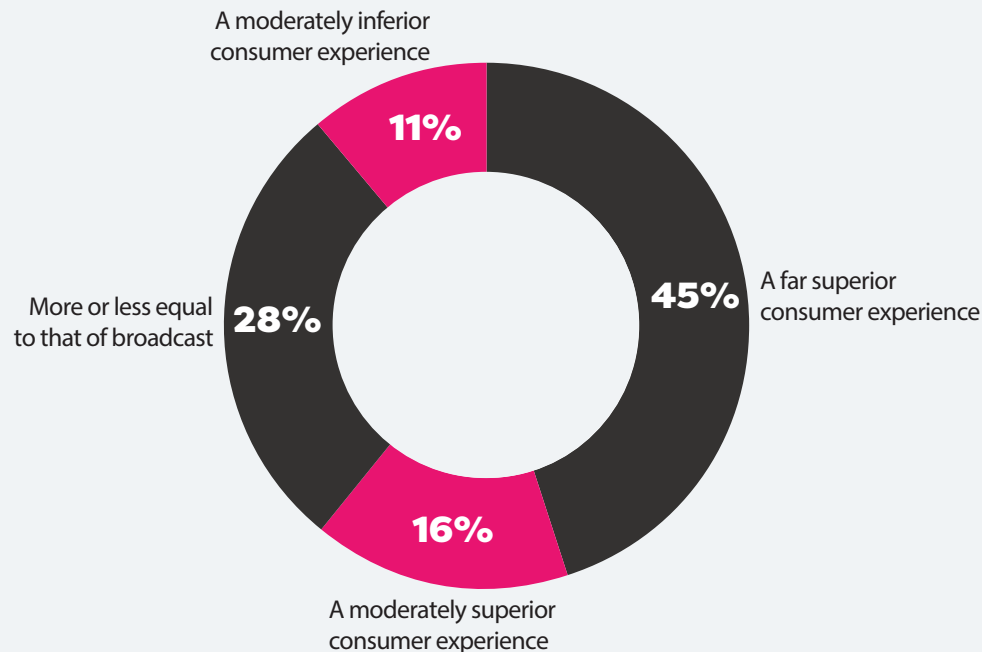
- Live streaming has the potential to deliver a superior experience to broadcast.
- Connected TVs are the most popular devices for streaming.
- Free advertising-supported and premium subscription are both routes to monetisation.
- Premium services with top-tier rights aimed at a national audience have the best prospects among sports streaming offerings.
- Enhanced viewing options such as multiple camera positions and watch parties will be key differentiators.
- Segmentation and targeting will be critical to the success of advertising-based offerings.
- Reducing latency to match the broadcast experience is the major challenge.



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## Can live-streaming deliver a consumer experience of a sports event or concert that is superior to broadcast?

**KEY TAKEAWAY** Live streaming can deliver a superior experience to broadcast, outweighing disadvantages.



### WHAT DOES THE DATA TELL US?

Some 45% of respondents believe live-streaming can deliver a vastly superior experience. Only a small minority of respondents – 11% of those who expressed a view – believe that streaming still delivers a moderately inferior experience to broadcast.

### PERSONAL VIEWPOINTS

Respondents were generally enthusiastic about the potential of live-streaming to surpass the broadcast experience, with the addition of immersive new features such as multiple camera angles, social interaction, and addressable advertising seen as key ingredients.

“I believe the experience can be even more lively and immersive,” said one respondent, citing the way that different camera angles and social elements such as live chat can enhance the streaming experience in ways that are difficult or impossible with broadcast.

Respondents also pointed out that bandwidth availability is continuously improving, enabling the streaming of 4K HDR coverage of events.

Awareness of latency as a key challenge was a strong thread in respondents’ comments, with one respondent expressing the view that while “live streaming can be convenient,” it often “still suffers from latency”.

**Three in five respondents believe that live streaming can now deliver a superior consumer experience to broadcast.**

## How frequently do you personally use different devices to view live-streamed sports and/or other live events?

**KEY TAKEAWAY** The connected TV is the most popular device for watching live-streamed content.

### WHAT DOES THE DATA TELL US?

We asked respondents to indicate how frequently they personally used certain devices in certain specified contexts to view live-streamed content.

The most popular streaming device by far was a connected TV in the home environment:

- 57% said they used this device to watch live-streamed content “very frequently”.
- 20% said they used connected TVs “quite frequently”.

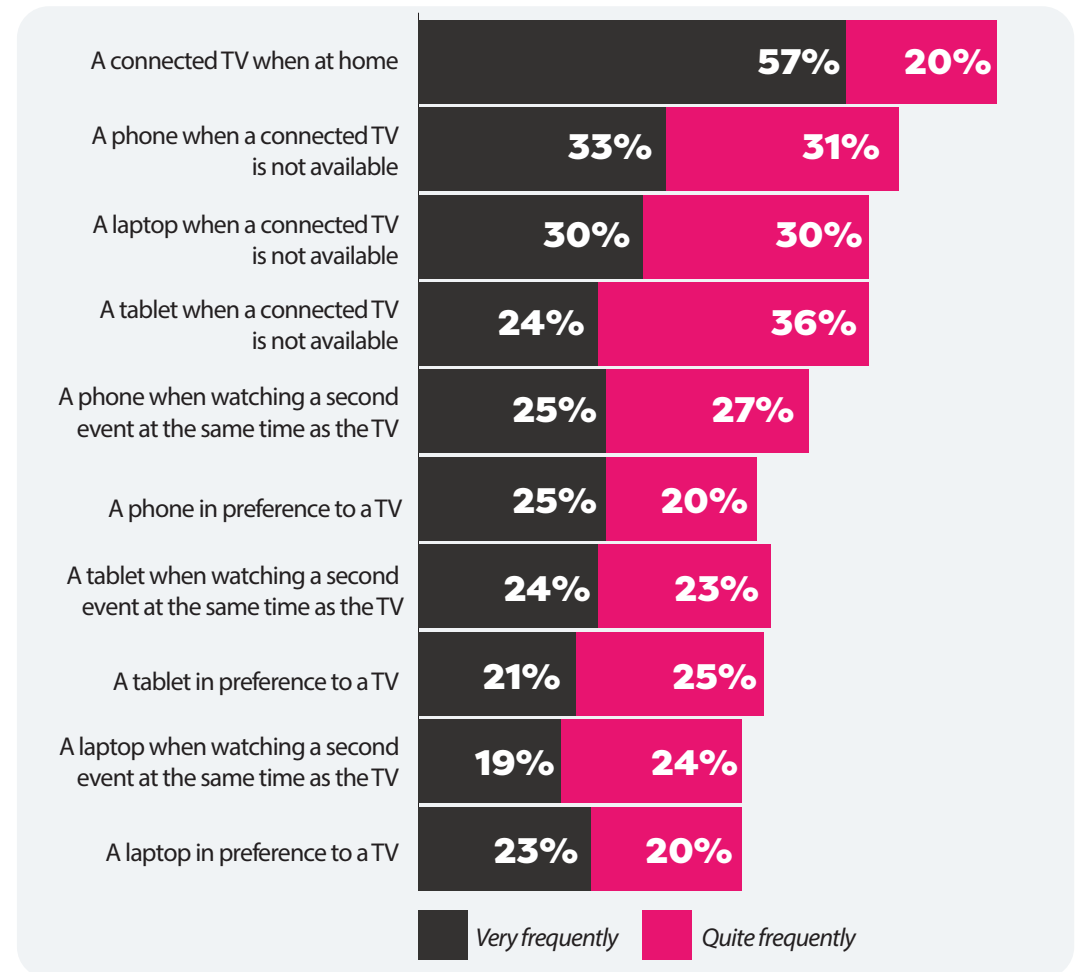
Other devices are popular only when the TV is not available.

- 64% said they favour phones “very frequently” or “quite frequently” when a TV is not available.
- 40% said the same if a TV is available.

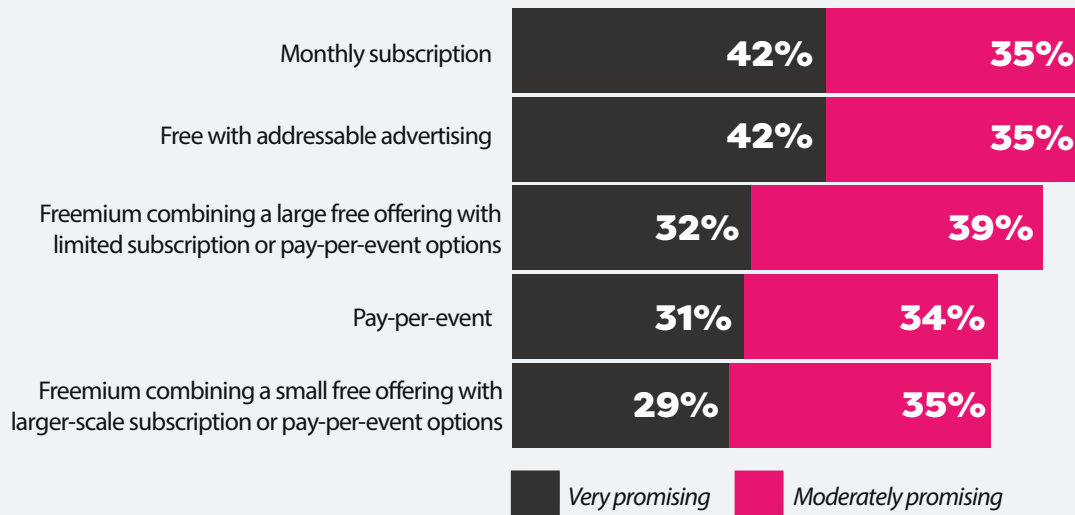
When TVs are available, using phones to watch a second event at the same time as the TV is on is popular, 52% said they did this “very frequently” or “quite frequently”.



**used a connected TV in the home frequently to watch live-streamed content.**



## Which forms of monetisation do you consider to be the most promising for a service that exclusively or primarily provides live-streamed sports or other events?



**KEY TAKEAWAY** Advertising-supported, freemium and even pay-per-event may be preferable to sports fans with specific interests. However subscription still has its strengths in terms of its ability to deliver a return.

### WHAT DOES THE DATA TELL US?

We asked survey respondents to rate several monetisation models such as subscription, advertising-supported, pay-per-event and freemium (mixed) in terms of how promising they are to deliver a return.

Respondents were evenly split between those favouring monthly subscriptions and those favouring a free model with addressable advertising as the best routes to monetisation.

Pay-per-event was one of the least favoured of the models considered but only in relative terms – 65% still viewed this as either “very promising” or “moderately promising”.

Overall, the results showed that advertising-supported models are popular with our executive-level audience, with some subscription fatigue settling in.

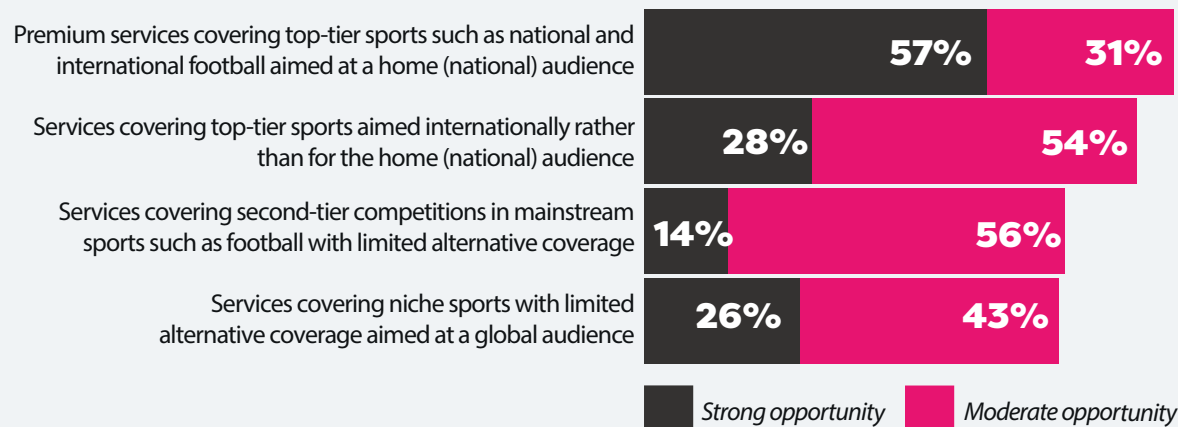
### PERSONAL VIEWPOINTS

Respondents’ views on this topic show a certain amount of scepticism about the continued growth of the subscription model for live-streaming. Respondents pointed out that fans typically have strong preferences for particular sports and may not wish to pay an ongoing subscription to a service that covers multiple sports.

One respondent argued that “you may not wish to be locked into a subscription if you are only interested in one or two major leagues”. One-third of the respondents said that users may prefer pay-per-event to view content on a streaming service that they don’t currently subscribe to.

## Where do you see the greatest opportunities for live-streaming in sports?

**KEY TAKEAWAY** When it comes to making a return, premium services with top-tier sports aimed at a national audience hold the greatest promise.



**88%** of respondents believe that premium services with top-tier sports have very promising or moderately promising prospects of delivering a return.

### WHAT DOES THE DATA TELL US?

Most respondents believe that premium services targeting a national audience covering top-tier events such as national and international football hold the greatest promise. An absolute majority of respondents believe that such services provide a “strong opportunity” for rightsholders to make a return.

Services offering top-tier competitions beyond their domestic market – for example, those aimed at expatriate audiences – are also seen as holding promise, as were the streaming services covering niche sports, albeit to a slightly lesser extent.



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## What is the most compelling differentiator from broadcast for live-streaming services?

### WHAT DOES THE DATA TELL US?

There are three main ways that streaming services can stand out from traditional broadcast TV:

1. By extending coverage – providing more feeds from more matches.
2. By delivering enhanced viewing options such as multiple camera positions to choose from.
3. By delivering personalisation in the form of individual content recommendations and personalised advertising.

Among survey respondents, enhanced viewing options – is far and away the most compelling differentiator of the three. Fully half of respondents chose enhanced viewing options – which can also encompass functions such as overlays of useful statistics and other information – as the most compelling way to differentiate from broadcast.

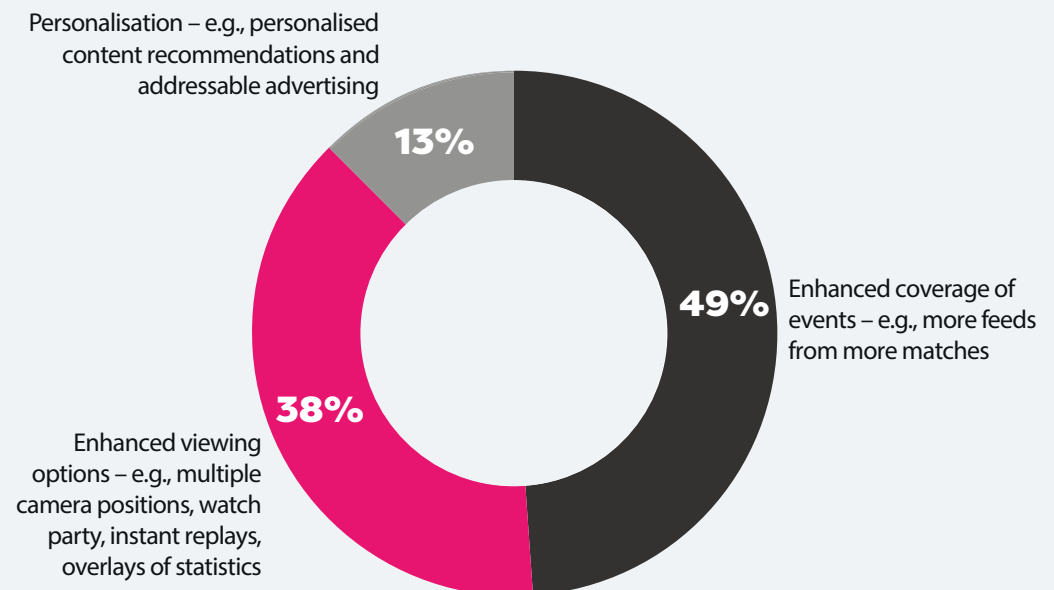
### PERSONAL VIEWPOINTS

Respondents believe that the kind of enhanced coverage of sports that streaming can bring is compelling. Giving users the ability to “feel as if they are in the stadium or the venue” is seen as having a strong appeal for consumers.

Enabling the fans “to get closer to the action they love” and to discover the thoughts and emotions of the players is possible with streaming, while “multiple camera positions will enhance the customer experience”. Some respondents believe that “more matches being covered” means viewers “can see [their] favourite team play even if it hasn’t been selected to show on the main TV channels”.

Personalisation is less favoured, while another opined that “viewers will never view addressable advertising as a differentiator”.

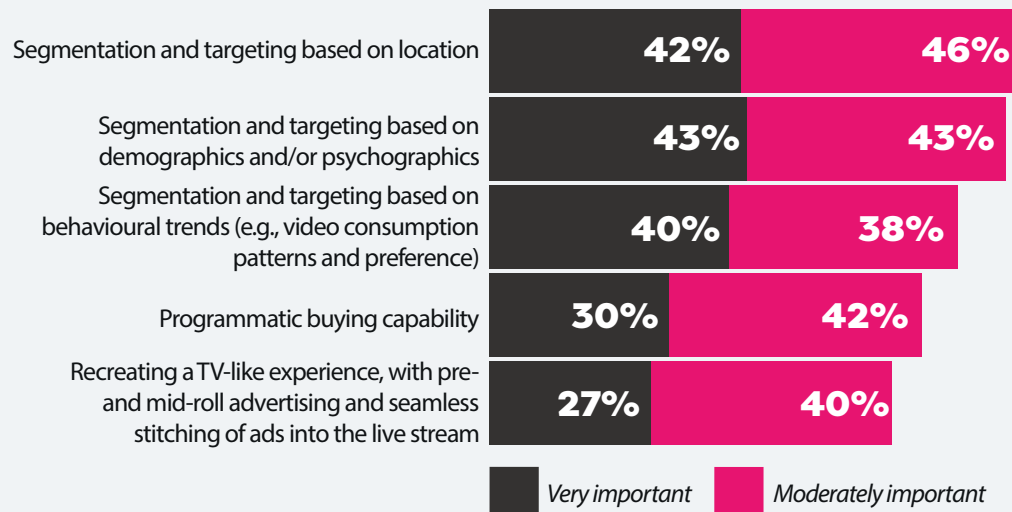
**KEY TAKEAWAY** Enhanced viewing options such as multiple camera positions, instant replay and watch parties are the most compelling way to differentiate streaming from broadcast.



**Nearly half of respondents chose enhanced viewing options as the most compelling.**

## What elements of an advertising proposition are important as part of a live-streaming model?

**KEY TAKEAWAY** Segmentation and targeting are key elements of a live-streaming advertising proposition.



**88%**

**of respondents believe that segmentation and targeting based on location is very or moderately important.**

### WHAT DOES THE DATA TELL US?

While personalisation, including addressable advertising is not seen as a meaningful differentiator from the perspective of consumers – respondents' belief that an ad-funded model makes sense suggests that advertising will remain important for service providers.

For respondents, the most important elements are segmentation and targeting – first based on demographics and psychographics; second, on location; and third, on behavioural trends such as video consumption patterns and preferences.

The order of importance placed on these targeting criteria indicates the importance of broad demographic and geolocation categories over hyper-personalisation based on personal consumption to some extent. Targeting, such as programmatic buying capability, is also considered to be a higher priority than other elements of advanced advertising.

## What are the challenges in the way of building a successful live-streaming business?

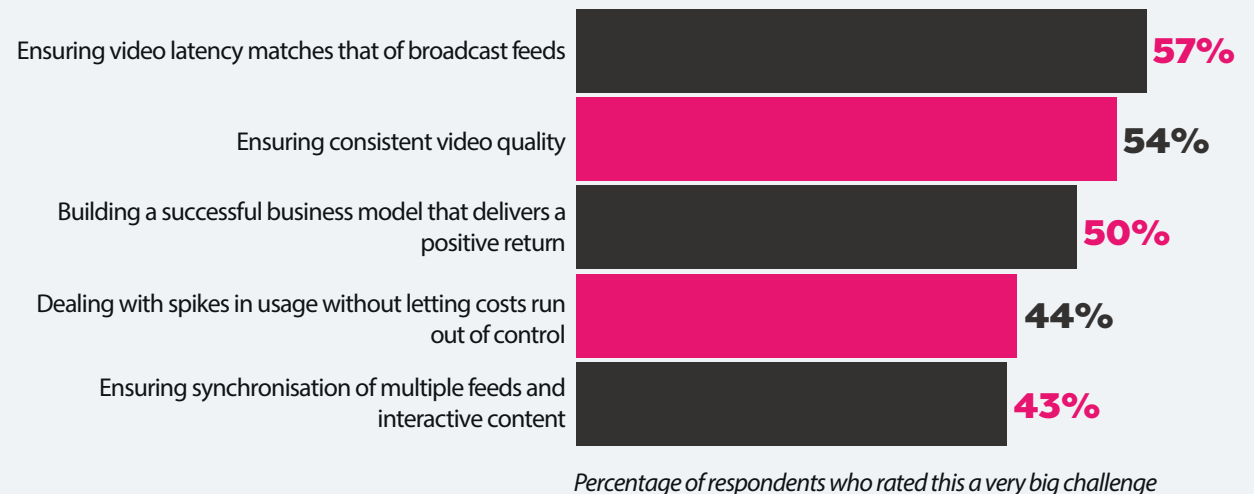
### WHAT DOES THE DATA TELL US?

As was suggested earlier, the biggest challenge for live-streaming, in the view of survey respondents, is to ensure video latency matches that of broadcast. The danger of hearing your neighbours cheer a goal just before it is scored on the screen you are watching is a familiar issue in discussions of live-streaming.

The related challenge of ensuring consistent video quality comes next in the order of priorities set by our respondents, with an obvious requirement that ultra-low-latency of the stream does not come at the expense of video quality. Again, for sports streaming, consistent video quality is of the essence in ensuring that consumers remain engaged with the service.

Respondents also believe that building a successful business model that delivers a positive return poses a significant challenge to live-streaming service providers.

### KEY TAKEAWAY Ensuring latency of streaming services matches that of broadcast is the key challenge.



**57%**

of respondents believe that matching video latency to that of broadcast is a very big challenge.

## Executive summary

**The application of Artificial intelligence and Machine Learning technology by service providers to improve service quality, customer engagement and ultimately customer retention is still at an early stage. However, our survey respondents believe that:**

- AI and ML will have a transformative impact on the quality and reliability of streaming services.
- The most useful applications of AI and ML by media companies and service providers is to improve video delivery through video and network analytics.
- Personalised content recommendations and personalised flexible packages will be key to retaining customers.
- Lack of skills within organisations is the single biggest hurdle facing those seeking to apply AI.
- The best uses of AI are recommendations based on data and creating alerts identifying anomalies.
- Most enterprises in this sector want to use AI to retain customers and just under half currently claim to do so.
- In addition to helping retain customers, AI has the potential to deliver higher ARPU.



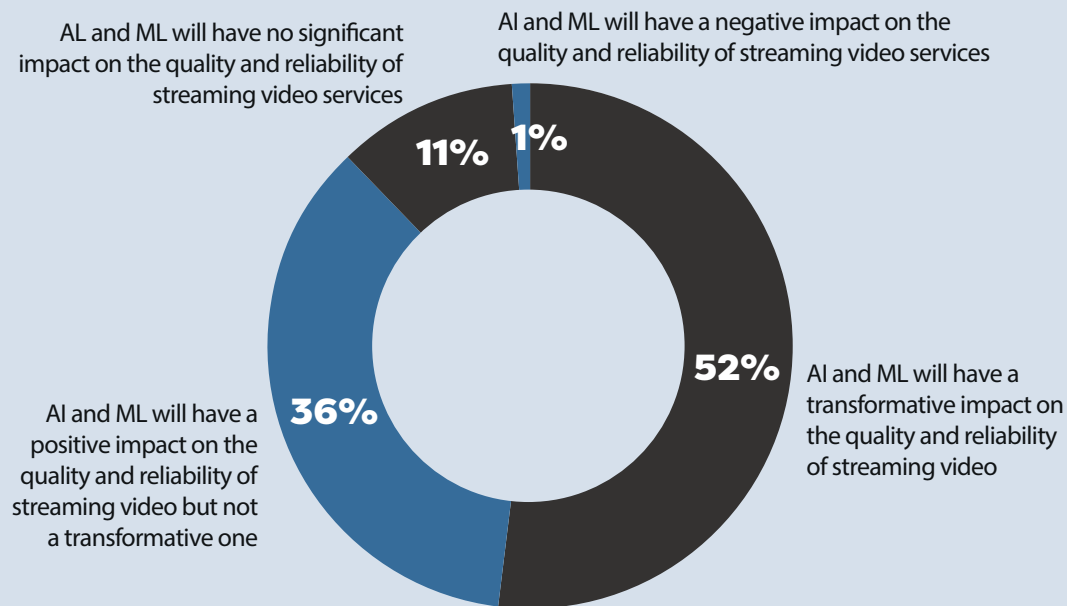
NPAW is the leading video intelligence company helping online streaming services grow. A global leader in its space, NPAW has over a decade of experience developing groundbreaking and scalable analytics solutions to optimize full service performance and user engagement to build media experiences that maximize revenue. Its suite of integrated analytics provides advanced, correlated visibility of platform performance, audience behavior and navigation, advertising and content efficiency in real-time to support data-driven decisions. NPAW serves more than 150 video-based

services and processes over 100 billion plays per year worldwide. Established in 2008 by co-founders of video streaming service Rakuten TV, NPAW has offices in Barcelona and New York with teams throughout the world. For more information, visit [www.npaw.com](http://www.npaw.com).



## How useful do you believe artificial intelligence and machine learning are in helping deliver streaming video services with high quality and reliability?

**KEY TAKEAWAY** AI and ML will have a transformative impact on the quality and reliability of streaming services.



**52%** believe that AI and ML will have a transformative impact on streaming video

### WHAT DOES THE DATA TELL US?

There is not much room for doubt. Over half of respondents to our survey believe that AI and machine learning will have a transformative impact on the quality and reliability of streaming video, with a further 36% endorsing the view that it will have a positive impact but not a transformative one.

Only 11% of respondents believe that AI and ML will have no significant impact, with a small set of outliers taking the view that it will have a negative impact.

### PERSONAL VIEWPOINTS

Respondents believe that AI and ML technology will positively impact the delivery of streaming video in several ways.

One respondent pointed to the prospects for “on the fly adaptive video streams” that “correct deficiencies as they occur”. Another said that AI and ML were “definitely the only way to enhance Quality of Service” and offer “a true personalised experience to differentiate [an offering] from the crowd”.

A third respondent says that the use of AI and ML to improve quality is “inevitable” as “analysing streaming video usage and providing solutions for each individual user is beyond the capacity of humans”. AI and ML, by contrast, “can deliver better Quality of Service by letting humans focus on other creative tasks”.

Adding to the tools the operator has at its disposal to retain customers is a key element in this.

One respondent took the view that these technologies could help with “personalisation and discovery and [would be] key to extending viewing time and stickiness” of services.

Another said that such technologies would be “the key resource in the direct-to-consumer business” and asserted that “the more the app understands the customer the higher the percentage of customers will be retained”.

## How useful will AI be in improving specific elements of delivering streaming video services?

### WHAT DOES THE DATA TELL US?

Drilling down into how AI and ML could help transform video delivery, respondents were asked to rate its usefulness across six elements of video delivery.

Respondents believe that AI and ML will be useful across all six elements. The highest score, however, went to a technical rather than behavioural function: ensuring that video is delivered consistently and at a high quality through applying AI to network and video analytics. Fifty-four per cent of respondents believed they would be very useful for this while a further 36% believed they would be moderately useful.

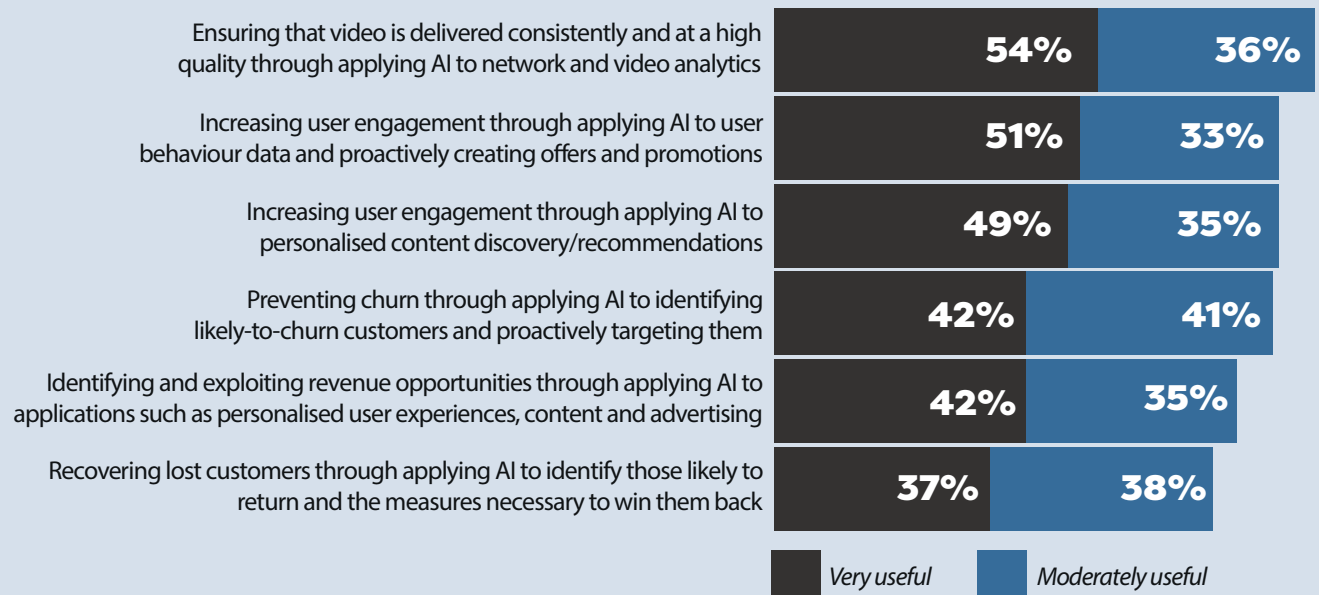
Closely following in second place is using AI and ML to increase user engagement through applying AI to user behavioural data and by proactively creating offers and promotions that will help retain customers, again with over half believing it would be very useful for this.

The third highest score went to increasing user engagement through applying AI to personalised content selections and recommendation, followed by preventing churn through applying AI to underlying likely-to-churn customers and proactively targeting them.

Towards the bottom of the table, but still seen as very useful by 42%, was identifying and exploiting revenue opportunities through applying AI to applications such as personalised user experiences, content and advertising.

The lowest score, relatively, went to using AI to identifying like-to-return customer who had previously churned and deciding what measures might be necessary to win them back.

### KEY TAKEAWAY AI and ML is most useful in ensuring that video is delivered consistently at high quality through applying these technologies to network and video analytics.

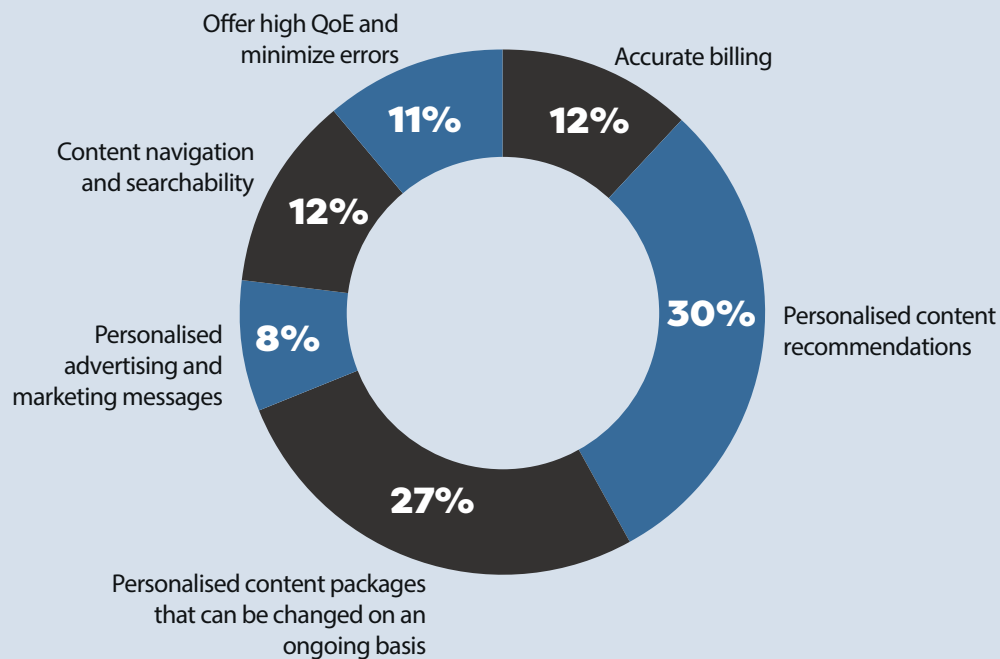


**Respondents believe in the potential of AI and ML both to ensure high-quality video delivery and to increase user engagement by shaping personalised offers.**



## Which elements are most important in keeping customers engaged with a service?

### KEY TAKEAWAY Personalisation is king.



30%

**of respondents believe that personalised content recommendations is the single most important way to keep customers engaged.**

### WHAT DOES THE DATA TELL US?

The responses to the survey highlight two elements of a service proposition that really keep customers engaged, in the view of our participants.

The first is personalised content recommendation. Recommendation of content that viewers want to watch or have some interest in amid the ever-growing slew of available content that can be accessed is very important in keeping customers interested and willing to stay and pay.

The second, closely following the first, is personalised content packages that can be changed on an ongoing basis. The ability of consumers to pay only for a package of services that they actually want to consume, and to have this adapt to their changing circumstances and needs, is a hugely attractive proposition, in the view of survey respondents.

Other elements – accurate billing, content navigation and searchability, high Quality of Experience and minimising of errors – are similarly rated. Trailing at the rear is personalised advertising and marketing – perhaps an indicator that this is more valued as a monetisation tool by service providers than as a way to keep customers engaged.

### PERSONAL VIEWPOINTS

Personalisation – both of content recommendations and of packages – is highly valued by our respondents.

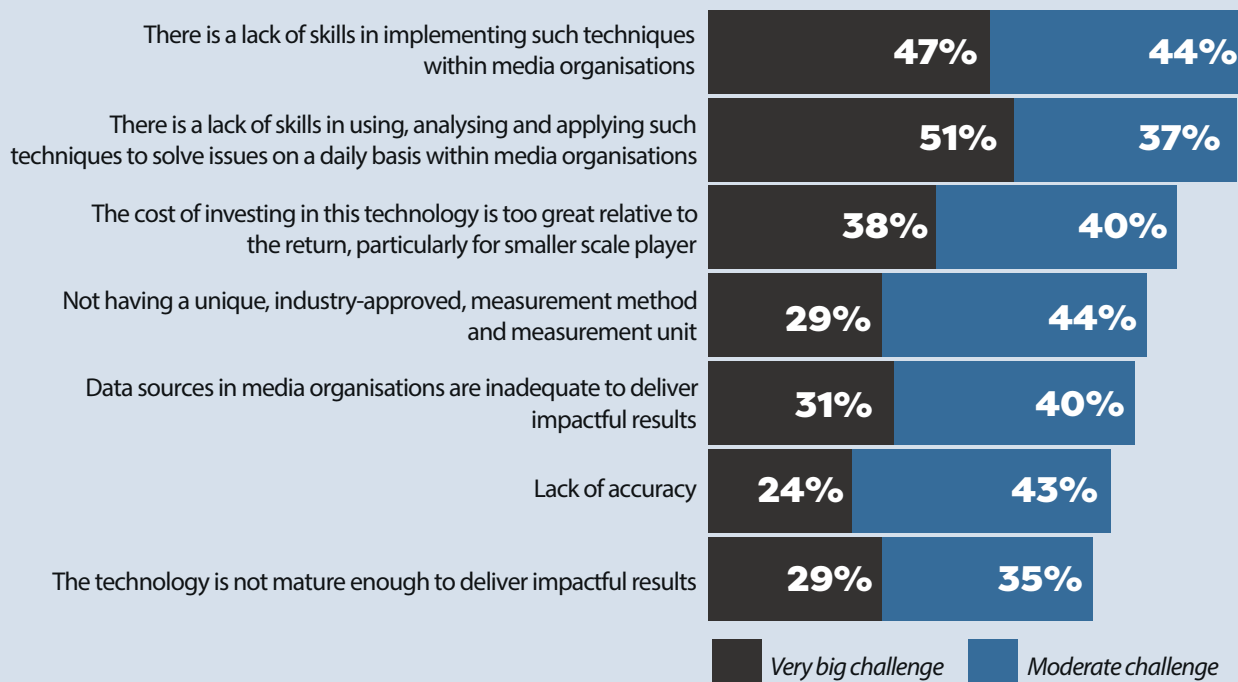
“Accurate personalised content is key to differentiate from the competition, keep the end-user interested in the service, reduce churn and increase ARPU,” says one respondent. Another takes the view that service providers need to emulate the accuracy of Netflix in making content recommendations.

The sheer volume of content available on service platforms means that some assistance in sifting through what is available is essential, in the view of respondents. “There is so much content choice that users will need help signposting relevant content for them,” says one respondent.

The ability to change packages in line with circumstances and tastes is also highly valued.

“Content packages should be selected by customers,” says one, while another is of the view that “the customer should be able to search and find what is of interest to him”.

## What are the challenges to using data and advanced technologies such as AI to retain customers?



**KEY TAKEAWAY** Lack of relevant skills within media organisations is the biggest perceived hurdle to using AI and data analysis to retain customers.

### WHAT DOES THE DATA TELL US?

Among the challenges identified by respondents to using data and AI techniques as retention tools, the biggest is lack of skills, both in implementing these techniques within media organisations and in using, analysing and applying these techniques to solve issues on a daily basis.

Lack of skills across media organisations is the most important hurdle to overcome, in the view of respondents. The other challenges we raised are considered to be much less important relative to this stumbling block. However it should be noted that lack of skills is a challenge that can, in large part, be addressed by seeking expert partners, including technology vendors with the required skillset and expertise.

The next most significant challenge, in the view of respondents, is cost relative to return. Anxiety around cost may reflect difficulties in calculating the return on investment. This can again be addressed through choosing appropriate technology partners who can use the experience of previous implementations to be in a better position to make the calculation on behalf of their client.

There is also some concern among respondents that data sources with media organisations are inadequate to deliver impactful results, which also plays into doubts about whether to take the plunge. As with the concerns listed above, expert technology partners would also be in a good position to assess the quality of data that exists and point to potential remedies.

The other challenges considered – lack of an industry approved measurement method or currency and lack of accuracy of such techniques – are also significant in the view of respondents, but much less so than the perceived problem of inadequate skillsets.

# Video analytics to understand and optimize the viewer experience

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## How would you like AI to support you in analysing data?

### WHAT DOES THE DATA TELL US?

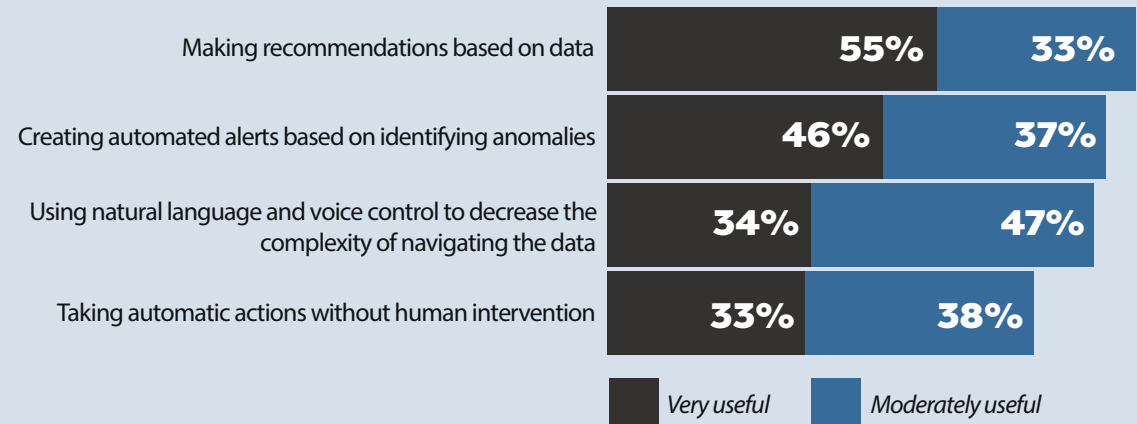
Respondents believe that AI should deliver recommendations to human staff within organisations to be useful. Over half of respondents – 55% of the total – believe that making recommendations based on data is very useful, with a further 33% believing it to be moderately useful.

There is also considerable enthusiasm for using AI techniques to facilitate the work of quality assurance and monitoring, with 46% of respondents grading it as very useful to apply AI to creating automated alerts based on identifying anomalies. A further 37% believe this to be moderately useful.

Addressing the skills gap within organisations is also a useful function of AI in the view of respondents. Some 34% believe that using natural language and voice control to decrease the complexity of navigating data is very useful while a further 47% believe this to be moderately useful.

Finally, a majority also believe that automation of decision making – the ability to take actions without human intervention is either very useful or moderately useful, although in this case 29% are less convinced and think this is either not very useful or not useful at all.

**KEY TAKEAWAY** Making recommendations based on data and creating alerts identifying anomalies are the best uses of AI for respondents.



# 88%

of respondents believe that using AI to make recommendations to human staff based on data is useful.

## Does your organisation use AI to prevent customers from leaving the service?

### WHAT DOES THE DATA TELL US?

Just under half of respondents for whom the question is relevant say they currently use AI to retain customers. Some 14% claim to make full use of AI technology for this purpose, while 33% say they use some AI technology but it is not yet central to their approach to customer retention.

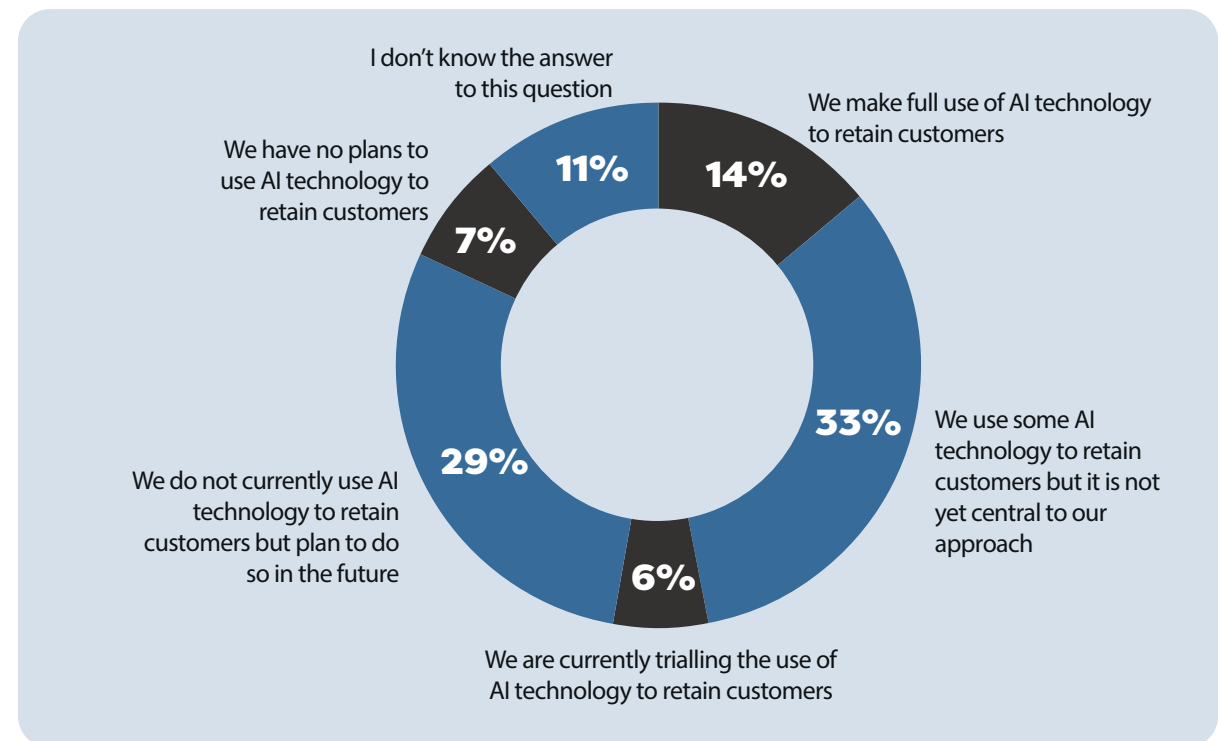
A small group of around 6% say they are trialling the use of AI to retain customers.

Some 29% of respondents do not currently use AI to retain customers but plan to do so in the future, while 7% say they have no plans to do so. A further 11% say they do not know if their organisation uses AI for this purpose or not.

The responses show that a significant majority of enterprises in this sector already claim to be using AI or are planning to do so in the future to retain customers. However, there is still a way to go before the technology is being used to its full potential.

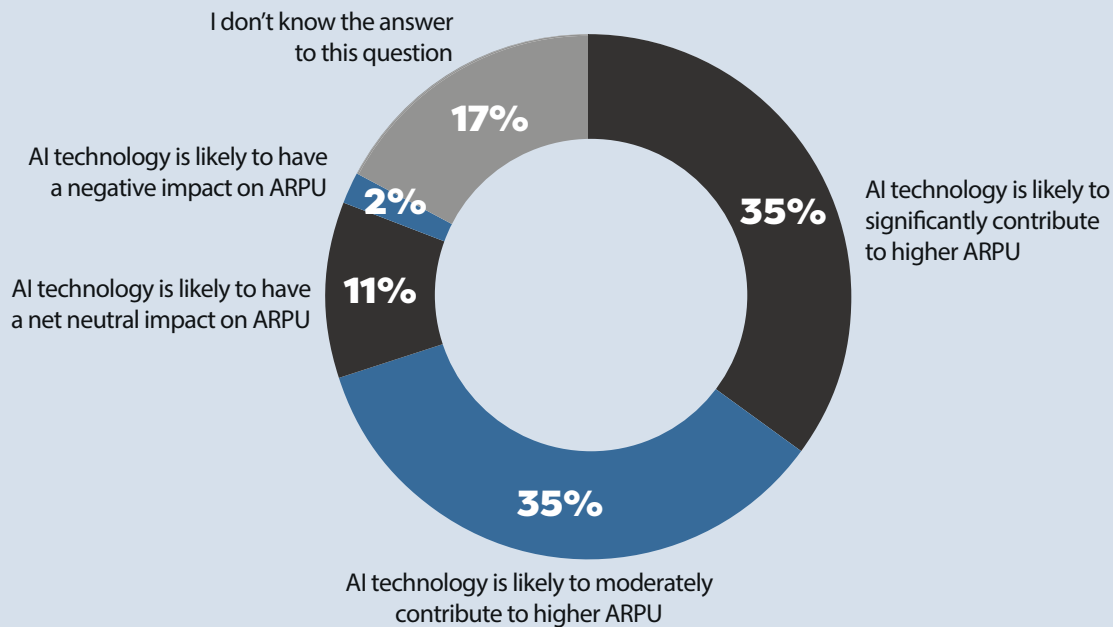
**Only 14% of respondents believe they currently make full use of AI technology to retain customers.**

**KEY TAKEAWAY** Many service providers are using AI to some extent to retain customers but the technology is still far from reaching its full potential.



## Can AI technology enable TV operators to increase revenue per subscriber?

**KEY TAKEAWAY** AI technology is likely to contribute to higher ARPU.



**70%** of respondents believe that AI is likely to contribute to higher ARPU.

### WHAT DOES THE DATA TELL US?

In addition to improving customer retention through identifying the tastes and preferences of individual customers and improving their engagement with a service, can AI help service providers increase the average revenue per customer?

Seven respondents in 10 believe that AI technology will contribute to higher ARPU. This group is evenly split between those who think it will contribute 'significantly' and those who believe it will make a 'moderate' contribution. A further 11% believe AI will have a neutral impact on ARPU. Few respondents believe it will have a negative impact but a significant group of 17% say they don't know the answer to this question.

The responses in general show there is still some uncertainty about the level of the impact of AI on enterprises' top line, which can feed into uncertainty about whether to invest in it. While a majority are positive about the likelihood of AI contributing to ARPU, a large group within this are cautious about how much of an impact it might actually make.

### PERSONAL VIEWPOINTS

Respondents are generally positive about the impact of AI, with one respondent opining that "high-quality technology holds a promise for every subscriber". Another was of the view that "AI helps in analysing and better understanding subscriber behaviour".

Drilling down further, one respondent said that "AI has the ability to increase ARPU through targeted ads and personalised content" but cautioned that "more work is required to reassure users about the technology and explain the benefits".

A second opined that "AI technology can help in multiple ways, increasing watch time, engagement, conversion, acquisition and retention" and concluded that "all combined together, this is likely to significantly contribute to higher ARPU".



## Executive summary

**The smart home-as-a-service is growing in importance as an element within service providers' overall proposition, particularly as the traditional bundle faces long-term decline. However, challenges remain. Our survey found that:**

- Smart home services will be an important part of service providers' offerings in the future, but opinions differ as to how important.
- Service providers essentially still compete on broadband speed, but support for in-home WiFi is emerging as a key differentiator.
- In-home connectivity is becoming much more important for service providers than in the past.
- In-home network security and building a cloud service platform to manage in-home connectivity are key priorities for service providers.
- There is still industry concern about whether the potential revenues from offering smart home services can justify the investment.
- Home security is perceived to be the most compelling smart home application for consumers.

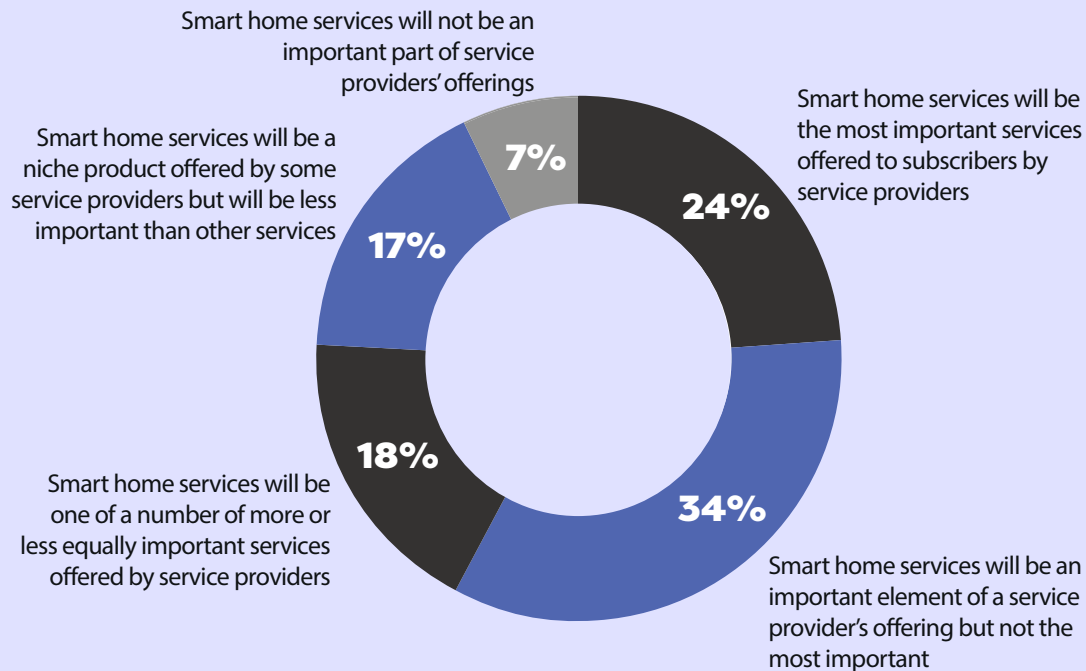


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## How important will the smart home-as-a-service be as part of a fixed-line service provider's offering in the future?

**KEY TAKEAWAY** Smart home services will be an important part of service providers' offerings, but opinions differ as to how important.



**24%** believe that smart home services will be the most important element of a service provider's offering to subscribers.

### WHAT DOES THE DATA TELL US?

As service providers' traditional bundle of video, broadband and voice services comes under increasing pressure from OTT competitors, service providers are being pushed to identify new ways to add value and avoid the fate of being reduced to a commoditised 'dumb pipe' over which others offer high-value services.

There is a general consensus among survey respondents that the smart-home-as-a-service will be an important element of service providers' offering in the future, but there is less consensus as to how big a part of that offering the smart home will be.

Some 24% of respondents believe smart home services will be the most important thing that service providers offer to their customers. However a larger group of 34% believe that smart home services will be one important element, but not the most important.

A more sceptical group representing 18% of the sample believe that smart home services will be one of a number of more or less equally important elements of the service provider's offering, while a similarly-sized group believe such services will only ever be a niche product. A small group of respondents believe that smart home services will not be a significant part of service providers' offerings at all.

### PERSONAL VIEWPOINTS

Many respondents believe that service providers are in a good position to bundle smart home services with connectivity. "The customer would prefer to have a bundled solution with adequate reliability and quality," said one. While "not the most important yet" due to the conservatism of users, the smart home would "eventually be the most important provided".

Others were more sceptical. One respondent said that smart home services would be "a niche product" that would only appeal to customers willing to pay a premium.

Another was of the view that in what was "still a DIY market", service providers would "spend lots trying to 'own' the market, only to be sidelined by other players – possibly Google or Amazon but maybe someone totally new".

## What elements of a broadband package are most important as a differentiator for service providers?

### WHAT DOES THE DATA TELL US?

The division of opinion about how well-placed service providers are to offer this type of differentiated product offering is reflected in answers to this question.

The most significant differentiator for many respondents – 41% in this survey – remains broadband speed quite simply. Speed is of course the primary focus of fixed-line service providers engaged in a day-to-day battle for subscribers, with the ability to offer headline grabbing top-tier speeds of 1Gbps-plus seen as a key marketing tool.

Some 29% of respondents chose whole-home consistent WiFi as the key differentiator however – a differentiator that nicely underlines their ability to offer meaningful smart home services. Offering ubiquitous in-home connectivity could provide a way for service providers to move away from pure commoditised bandwidth.

Fewer respondents currently see security and ‘added value applications’ as key differentiators, indicating that there is still some scepticism about the ability of service providers to compete in services as opposed to offering connectivity.

### PERSONAL VIEWPOINTS

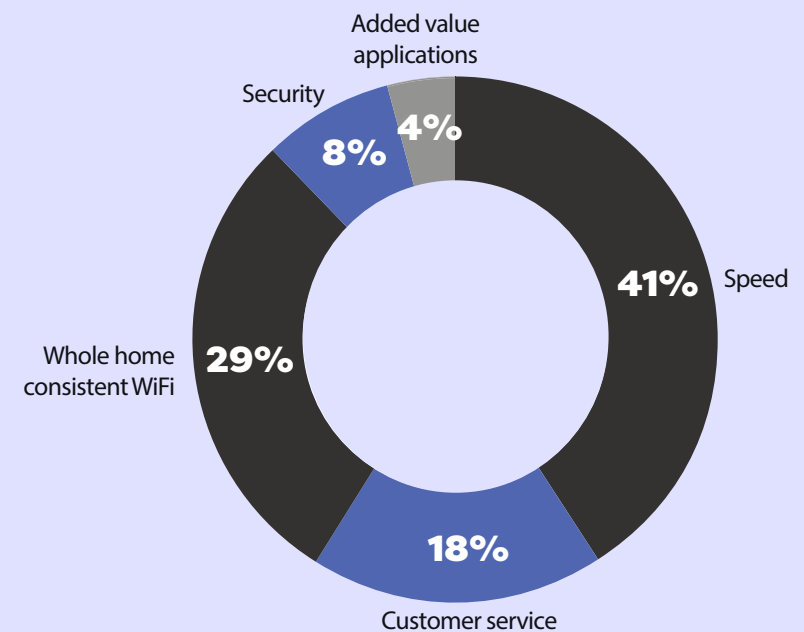
For many respondents, speed is king. “I think speed edges it,” said one respondent who was of the view that “most will compete on speed and price” while acknowledging that “customer service is also important”.

“You can have great customer service and other added value services, but if you don’t have the speed to support the multiple streaming uses in a home, you won’t sell,” said another respondent.

Others emphasised the importance of in-home connectivity with the view that “the WiFi dropping if the user moves from room to room” would negatively affect the consumer experience. For one respondent, “poor WiFi is a major irritant” that “erodes accumulated brand value” for the service provider.

Among advocates of added value offerings, one respondent said that “security is still the one element that is difficult to control/maintain across the whole household and through all connected devices”, while another was of the view that security was second to speed in order of importance

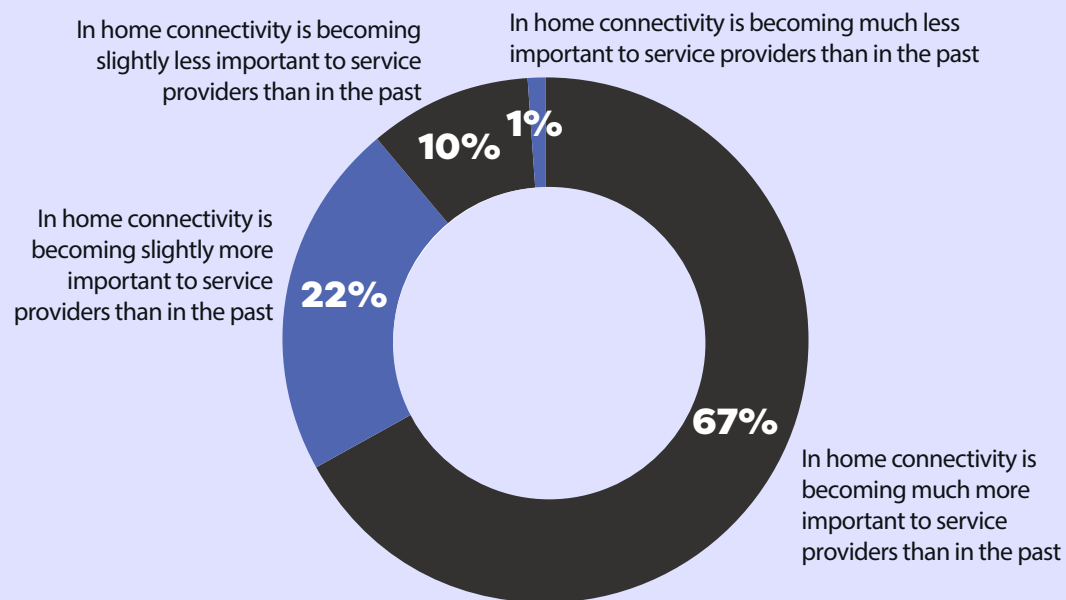
**KEY TAKEAWAY** Speed is king, but in-home WiFi is emerging as a key differentiator.



**Offering ubiquitous in-home connectivity could be a way for service providers to move beyond offering pure commoditised bandwidth.**

## Do you think that in-home connectivity via WiFi is becoming more or less important as part of a service provider's overall proposition for consumers?

**KEY TAKEAWAY** In-home connectivity is becoming much more important for service providers than in the past.



### WHAT DOES THE DATA TELL US?

While speed remains the key differentiator for service providers for many respondents to our survey, the vast majority also agree that in-home connectivity is becoming much more important than it has in the past. Some 67% of respondents endorsed the view that in home connectivity is becoming 'much more important' to service providers than in the past, and a further 22% said it was becoming 'slightly' more important. Only a very small minority therefore are of the view that the in-home piece of the connectivity puzzle is becoming less important for service providers as time goes by. If raw speed still edges it as king, getting content seamlessly around the home is the crown prince.

### PERSONAL VIEWPOINTS

"With the pandemic, it has become significantly important to ensure you are well-connected at home," said one respondent. Another made the point that "most devices are now connected through WiFi" and observed that there is now a consumer perception that WiFi speeds should match wired connections.

Failure to meet those expectations can be costly to service providers' reputations. "Poor WiFi is a major irritant and that eroded accumulated brand value," even if DIY solutions are available, said one. "All connectivity within a home is a reflection of the service," said another. "Usage is ubiquitous in the home and the service needs to match," said a third.

While a few respondents were sceptical that service providers would own the in-home space, with one opining that it was "very doubtful that telecom operators will lead this game", others were more positive, with one asserting that "operators who can validate WiFi performance provide more value to customers than those who don't".





# Build a better smart home strategy

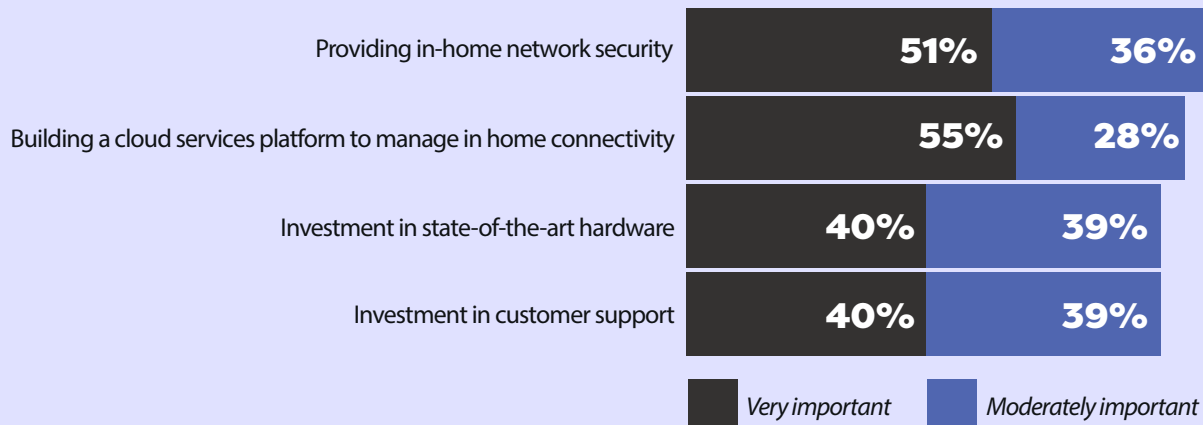
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## What should service providers focus on in supporting the smart home?

**KEY TAKEAWAY** Providing in-home network security and building a cloud service platform to manage in-home connectivity should be the top priorities for service providers.



**Survey responses show that security is a key concern and an area where service providers have an important role to play.**

### WHAT DOES THE DATA TELL US?

We asked respondents to rate four elements in supporting the smart home in terms of their importance.

The leading element was providing in-home security, rated as very important by 51% and moderately important by 36% of our survey sample. This was followed closely by building a cloud services platform to manage in-home connectivity, rated as very important by 55% and moderately important by 28%.

The responses show that security is a key concern and an area where service providers have an important role to play.

This comes despite the scepticism expressed in responses to an earlier question about what works as a differentiator, where security solutions for the home network ranked somewhat low in the list of potential elements that could help service providers stand out from their competitors.

For the majority, competing on speed remains the key battleground between market players. However, security was mentioned a significant number of times in qualitative responses to that question, showing that it is in fact an important part of the service provider proposition for many of our respondents.

For respondents, other elements of the smart home proposition such as investment in state-of-the-art hardware and customer support also have a role to play, with large majorities rating them as very important or moderately important. However, security and building that cloud services platform to manage it all – and deliver scale – are at the top of the list.



## What are the main challenges for service providers offering the smart home-as-a-service to their customers?

### WHAT DOES THE DATA TELL US?

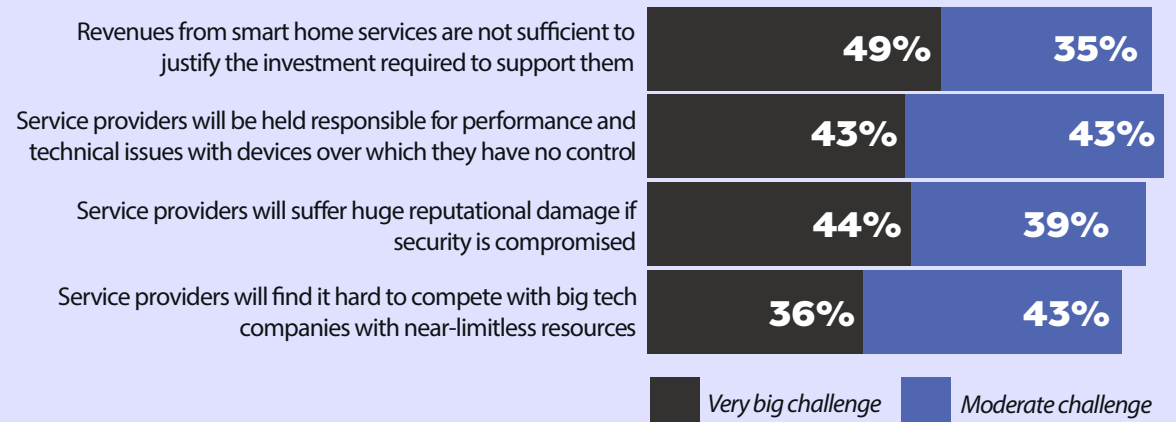
Respondents considered four challenges that service providers may be expected to face in the smart home business. The most important, in their view, was that revenues from smart home services may not be sufficient to justify the investment required to support them. Almost half of respondents rated this as a very big challenge, with a further 35% rating it as a moderately important challenge.

The other potential challenges were all considered to be important too. There was concern that service providers will be held responsible for performance and technical issues with devices over which they have no direct control, and a significant amount of concern about the potential for reputational damage if home network security is compromised.

Respondents were less concerned – at least in relative terms – that service providers will find it hard to compete with big tech companies in this arena, possibly because a significant number of respondents believe that operators of networks are in fact well-placed to play a role in providing smart home services.

The concern that revenues may fall short of what is required to ensure a positive RoI shows that the smart-home-as-a-service market is still something of an unknown quantity. There is still residual scepticism that consumers may not be willing to pay a premium for such services, or that service providers will be able to justify the investment as a way to retain customers. There is clearly work to be done to convince some of the business case – and in particular the long-term payoff from increasing customer satisfaction.

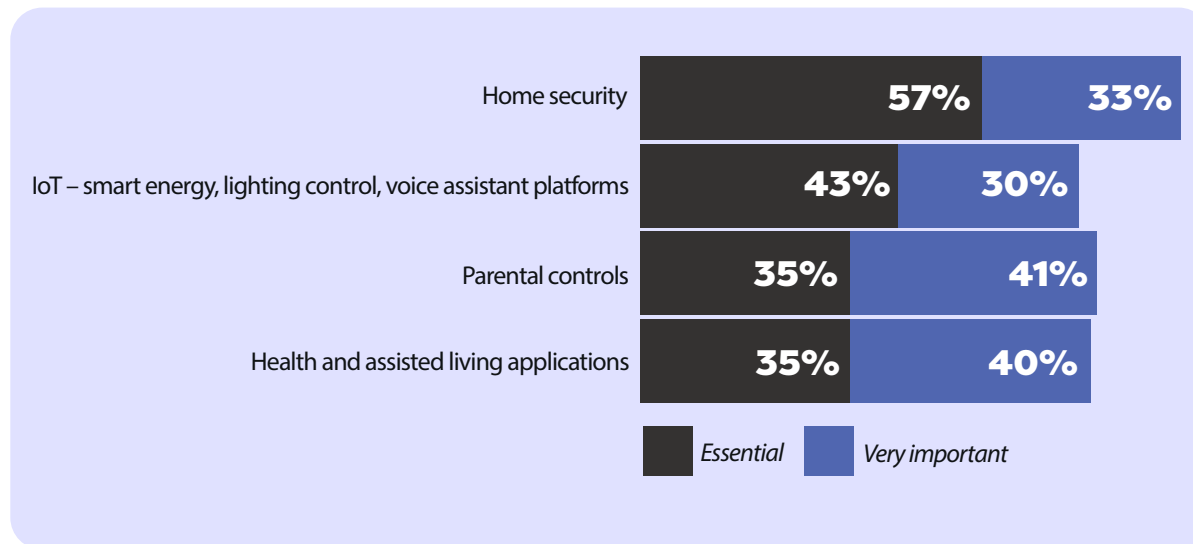
### KEY TAKEAWAY Survey respondents still have concerns about whether potential revenues from smart home services can justify the investment.



**49%** believe revenues from smart home services not being sufficient to justify the investment is a very big challenge for service providers

## What applications are most compelling as part of a smart home proposition?

**KEY TAKEAWAY** In the field of consumer-facing smart home applications, home security is king.



**For respondents, home security is the key smart home service, rated as essential by 57% of the sample.**

### WHAT DOES THE DATA TELL US?

While many respondents remain sceptical about the ability of service providers to compete in added-value services beyond the realm of pure connectivity, there is a broad consensus about the hierarchy of such services in terms of how compelling they are to consumers.

Once again security is the top-rated item on the list. Home security of course goes beyond securing the network itself (something service providers may have obvious competency in) to providing smart monitoring of the home, responsiveness of alarm systems to intruders and so on. For respondents, home security is the key smart home service. It was rated as 'essential' by fully 57% of our sample, with a further 33% rating it as 'very important'.

The other applications considered were IoT (encompassing smart energy, lighting control and voice assistant platforms etc.), parental controls and health and assisted living applications.

All were rated as important by respondents, although IoT applications edged in front, with 43% rating them as 'essential'. Parental controls and health and assisted living applications were rated very similarly, with more respondents rating them as 'very important' than those who considered them 'essential'.

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