DIGITAL TV EUROPE

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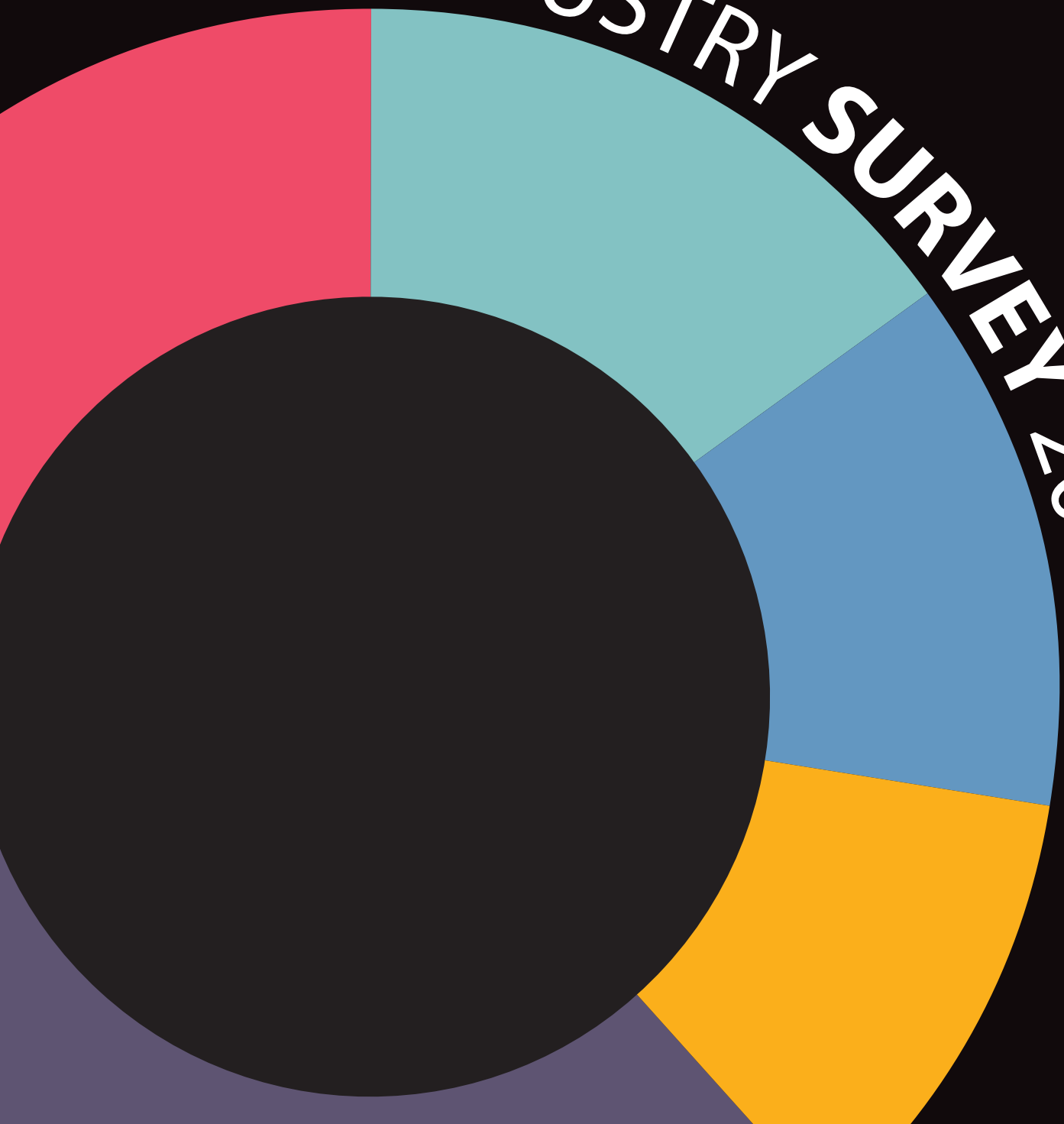
INDUSTRY SURVEY 2016



Introduction

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The bigger picture

Welcome to Digital TV Europe's Industry Survey 2016. In this, the most wide-ranging survey we have conducted to date, we sought to tease out and distil the experience and opinions of industry executives and experts across all the key topic areas currently being discussed at conferences and trade events.

The resulting report is based on the responses of 375 industry figures from 44 countries to a series of questions on six broad topics.

First, we looked at views on the overall digital TV landscape – in particular at the overall prospects of the pay TV business, the advent of OTT and the changing pattern of consumer behaviour. Next, we assessed the TV experience, taking in how features such as interactive guides, content enrichment tools, on-demand portals and search and recommendation features could be used by platform operators to differentiate their offerings.

Third, we looked at OTT TV – taking in the role of IP-based delivery to pay TV providers, the impact of new OTT entrants and the evolution of new business models. Next, we assessed respondents' current experience and plans for UHD TV services and their views on the emerging standards that support it.

We also looked at the importance of TV everywhere delivery to operators and others and the way consumers' patterns of viewing behaviour are changing. Finally, we assessed the potential of big data, taking in the actual and potential uses of data to help develop new business models and some of the challenges associated with it.

The survey results, presented here in full, give a fascinating snapshot of how the industry views its own present state and future prospects.

Stuart Thomson, editor

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The digital TV landscape

Introduction

How digital video will be delivered in the future, how it will be consumed and how service providers can make money from it are topics that are being carefully chewed over by industry executives across all parts of the business. The entrance of big internet companies, large multinational telcos and disruptive OTT startups into the video business indicates a belief among many that the future is up for grabs. Who is best placed to win among these players and how they can make money from video is very much up in the air.

In this wide-ranging industry survey, we asked a broad range of industry stakeholders how they see the overall market developing and also asked them to provide the benefit for their experience and opinions on five key specific topics: OTT TV, the TV experience, UHD TV, TV everywhere and big data.

We surveyed the views of 375 industry executives from 44 countries, including telco-based pay TV operators, cable and DTH operators, OTT providers, channel and content aggregators, government agencies and technology providers. The insights they provided give a fascinating snapshot of an industry in transition, with all parts of the business represented.

At a high level, this survey shows that the growth of OTT and the entrance of big internet companies into the video space has not dealt a death blow to more traditional pay TV operators. Responses show that pay TV is far from dead. Pay TV will continue to see growth, in the view of our survey respondents – but OTT TV disrupters will see stronger growth.

Pay TV operators need to evolve their business plans to stay ahead of the competition. In particular, in the view of our respondents, operators with the ability to combine TV with a larger multi-play offering will be better-placed to win consumer loyalty and deliver a compelling offering that can compete with OTT entrants. But pay TV providers will also have to match higher expectations from viewers about the overall experience and about the flexibility of the offering – in particular demand for the ability to consume content on-demand. Operators that consistently present innovative and attractive new features and content before their users – for example UHD TV content – are more likely to retain their customers in an increasingly competitive field.

The digital TV landscape

Pay TV prospects

In the view of our survey sample, the three key trends likely to have an impact on the digital video business over the next two years are, in order of importance, the launch of new globally-distributed online video services by companies including Apple and Google, the expansion of mobile connectivity and bandwidth globally, and the development of converged offerings – TV, mobile and fixed internet and telephony – by large services providers.

Still important but likely to have less impact is the use of big data to offer more highly personalised offerings, including personalised TV services and targeted advertising, and the consolidation across national boundaries of pay TV operators such as Sky and Liberty Global (**fig. 1**).

A clear majority of survey respondents have faith that the pay TV business will continue to prosper over the next couple of years, but the majority of these – 46% of the total – believe that it will experience only moderate growth, with some modest negative impact from competitive pressures such as OTT and price erosion. Only 12% believe the pay TV business is set for continued strong growth and will experience little negative impact from these factors.

A third of respondents believe that pay TV is set for very modest or zero growth over the next two years, as competitive pressures begin to bite, while a further 9% believe the business is set for negative growth, with pay TV operators facing serious challenges (**fig. 2**).

Perceptions about the impact of shifts in consumer habits are even more stark when our survey respondents are asked to give their view on the types of services that are likely to deliver a decent return in the same time frame. Traditional linear pay TV services are likely to experience modest or neutral growth, according to 44% of respondents, with a further 25% believing linear pay TV is unlikely to record any significant growth. Only 4% believe that linear pay TV has very strong growth prospects.

This compares unfavourably even with free-to-air, advertising-supported linear TV, which is seen as having very strong prospects by 5% of respondents, and moderately strong, modest or neutral prospects by the same proportion as for pay services.

Fig. 1. Which of the following trends do you think will have the single greatest overall impact on the digital video business over the next two years?

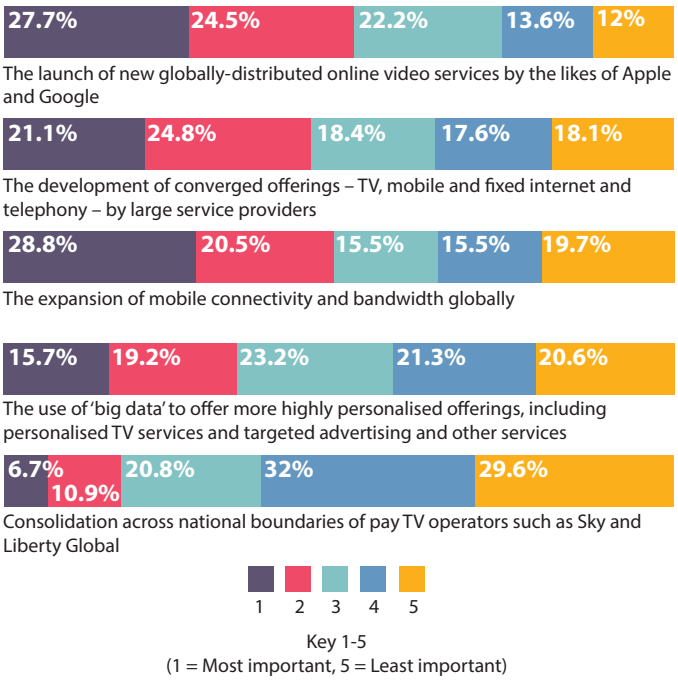


Fig. 2

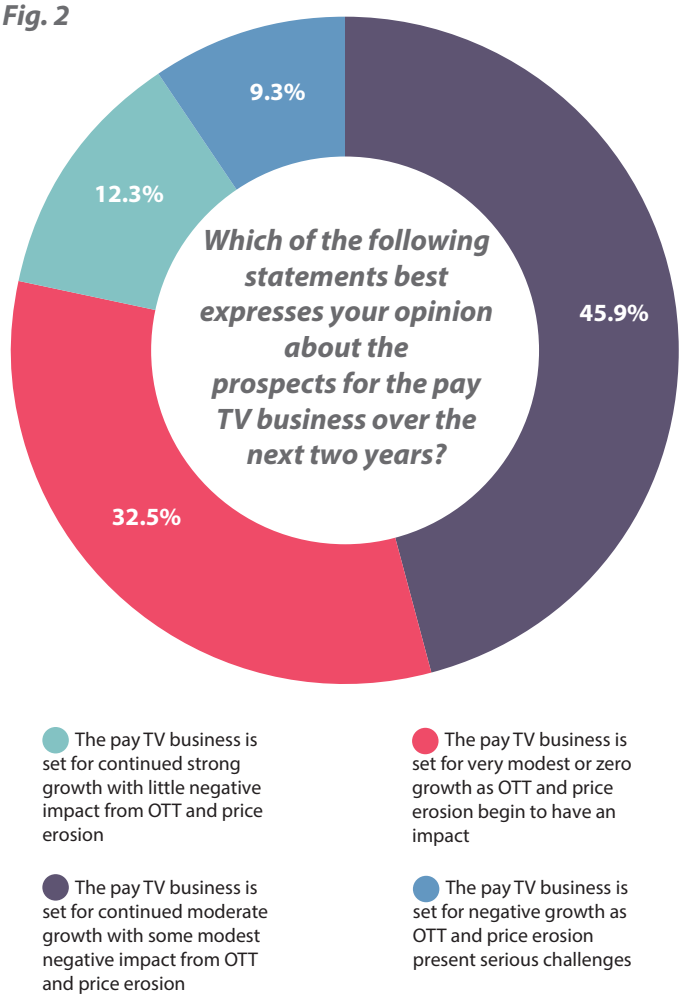
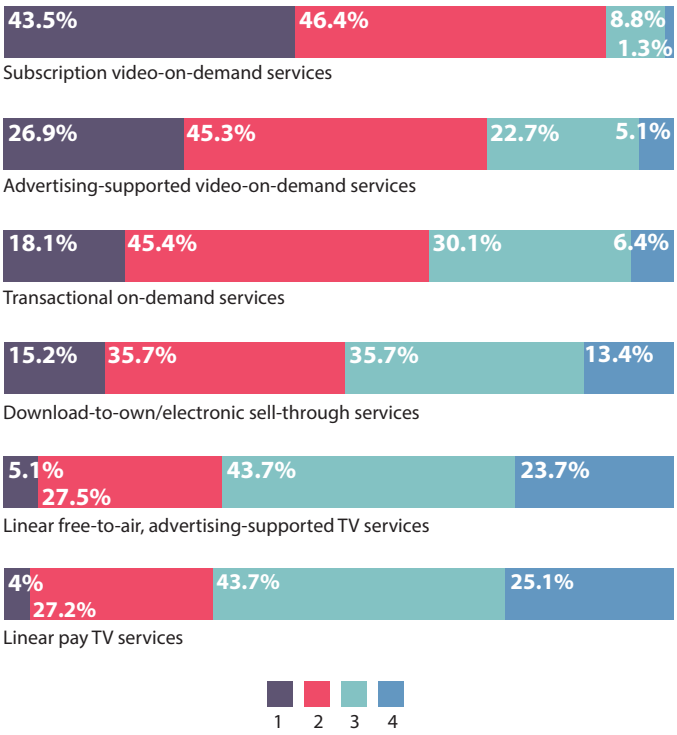


Fig. 3 How would you rate the prospects for growth of the following technologies and services over the next two years?



Key 1-4
(1 = Very strong growth prospects, 2 = Moderately strong growth prospects,
3 = Modest or neutral growth prospects,
4 = Unlikely to record any significant growth)

The strongest growth prospects by far, according to our survey respondents, belong to subscription video-on-demand OTT TV services. Over 43% of respondents believe SVoD has very strong growth prospects, with a further 46% believing it has moderately strong prospects. Only 9% believe SVoD has modest or neutral prospects, and only 1% believe it is unlikely to record any significant growth.

Other on-demand models fall somewhere in between these extremes. Twenty-seven percent believe advertising-based free VoD has very strong prospects, with a further 45% believing it has moderately strong prospects. The transactional VoD model is voted as having very strong prospects by 18% and moderately strong prospects by 45%.

Somewhat less appealing, in the eyes of our survey, is download-to-own or electronic sell-through services, seen as having very strong prospects by 15% and moderately strong prospects by 36% – the same proportion as believe it has modest or neutral prospects, with 13% believing it is unlikely to record any significant growth (**fig. 3**).

Consumer behaviour

Views on the types of services that are likely to succeed is informed by views on emerging patterns of consumer behaviour and broader industry trends. Asked to assess what impact seven key trends will have on the pay TV business over the next two years, our survey gave a broadly positive assessment of the overall impact of these.

Survey respondents give a broad thumbs up to growth in demand for multi-play bundled products combining TV, broadband and phone services, which are seen as having a 'very positive' impact on pay TV by 25% and a 'moderately positive' impact by 42%. The onward march of bandwidth is also seen as good news for pay TV, with 41% saying that growth in high-speed networks capable of delivering high-quality video over the web will have a 'very positive' impact on pay TV.

Other key trends that are likely to benefit pay TV operators include growth in the sale of 4K/UHD TV sets, with this seen as 'very positive' by 21% and 'moderately positive' by 42%.

At the other end of the scale, growth in non-linear, on-demand viewing is seen as 'very positive' by 21% and 'moderately positive' by 36%, meaning that a clear majority still view this as positive. Even growth in demand for more flexible ways of paying for content is seen as positive for pay TV providers, with 22% viewing it as 'very positive' and 38% viewing it as 'moderately positive' (**fig. 4**).

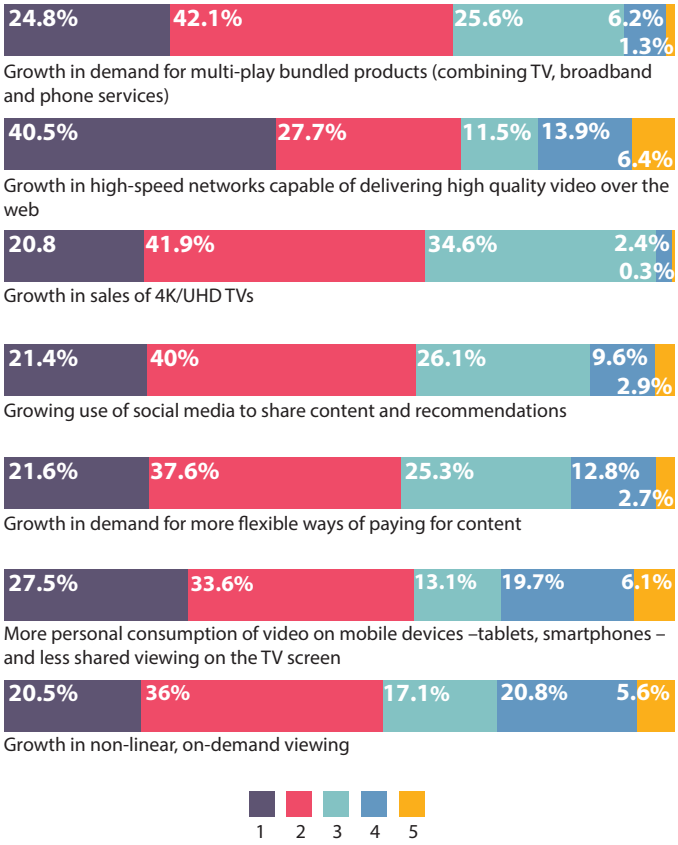
If the prospects for pay TV as a business model seem good, the same is not necessarily true for its existing practitioners. When asked which types of company are best placed to adapt to changes and succeed in making a profitable business out of digital video, standalone pay TV operators scored lowest in a field of eight categories, with only 7% of survey respondents believing they are very likely to succeed and 40% believing they are moderately likely to succeed. Forty-four per cent of respondents believe, on the contrary, that standalone operators are not very likely to succeed and eight per cent believe they are very unlikely to succeed. This places them behind even free-to-air, advertising supported broadcasters, with 10% believing the latter are very likely to succeed and 41% believing they are moderately likely to succeed.

The prospects for pay TV operators are transformed when they offer TV as part of a broader service mix, however. Forty per cent of respondents believe that multi-play operators are very likely to succeed and a further 50% believe they are moderately likely to succeed.

Other groups seen as having broadly positive prospects in the digital video world include big internet companies like Google and Facebook,

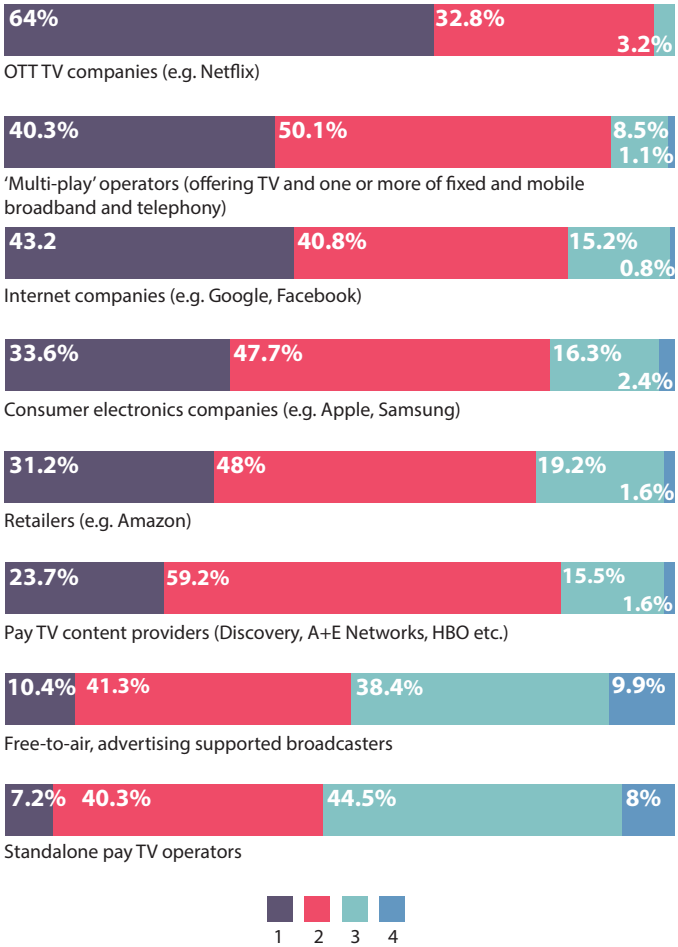
89% of respondents believe that SVoD has strong growth prospects over the next two years

Fig. 4. What impact do you think the following consumer or industry trends will have on the pay TV business over the next two years?



Key 1-5
(1 = Very positive impact, 2 = Moderately positive impact,
3 = Neutral impact, 4 = Moderately negative impact
5 = Very negative impact)

Fig. 5. Which types of company are best placed to adapt to changing consumer habits and succeed in making a profitable business out of digital video?



Key 1-4
(1 = Very likely to succeed, 2 = Moderately likely to succeed,
3 = Not very likely to succeed, 4 = Very unlikely to succeed)

and consumer electronics giants such as Apple and Samsung. Also rated has having moderately good prospects are pay TV content providers such as Discovery, A+E Networks and HBO.

The top marks in the field, however, go to OTT TV companies such as Netflix (or possibly to Netflix itself, so dominant does it appear to be in SVoD). Sixty-four per cent of respondents believe the Netflixes of the world are very likely to succeed in making a profitable business out of digital video and a further 33% believe they are moderately likely to succeed. Precisely zero per cent of respondents believe they are very unlikely to succeed, a staggering vote of confidence in a category of company that has yet really to prove its business case (**fig. 5**).

Conclusion

The digital video business, including the pay TV business, is facing a period of unprecedented change, driven by exponential growth in available bandwidth and the popularity of a wide range of devices and platforms capable of displaying video content.

The expansion in video distribution presents challenges as well as opportunities, with a wider range of players, including free-to-air broadcasters, pay TV operators, OTT TV disruptors, consumer electronics companies and internet firms, all vying for consumers' video-viewing time.

In order to adapt and survive, established players including pay TV operators need to provide an offering that is the equal, or more compelling, to that of new rivals in the space.

Over the following pages, the Digital TV Europe Industry Survey will examine the views of our sample of industry executives in more detail examining how pay TV operators and their rivals view the impact of OTT TV, and UHD TV and TV everywhere, how they can leverage big data to transform their business and how they can embrace differentiation through delivering a compelling TV experience.

The TV experience

Introduction

In an age when exclusive content deals are increasingly out of reach to all but a small club of very large pay TV providers, the TV experience – defined as a combination of interactive user guide and content enrichment, on-demand portal, search, recommendation and other personal navigation tools and TV apps – is increasingly seen as a way for operators to differentiate their services in the eyes of consumers.

The TV experience – so defined – is becoming more important not only because differentiating services through content exclusivity is a tough strategy to follow through on, but because the range and variety of sources of content available is ever-expanding, which leads consumer expectations to expand in line with this. Operators – particularly those that do not want to base their appeal on exclusive content deals – are increasingly looking to aggregate as many sources of third-party content as possible.

This means not only bringing public and commercial broadcasters' catch-up TV services onto their platform, but integrating paid for OTT services such as Netflix and user-generated content sites such as YouTube, along with additional elements to enrich the TV experience such as social interaction features and tools to enable audiences to participate that enhance the TV experience.

With so many different features and content sources gathered together in one place for viewing on the big screen in the home, providing an attractive TV experience and adequate tools to navigate through all this, organised in a way that is an easy and contextual fit with viewers and the content they watch, is clearly going to be a key selling point for operators.

The TV experience

Platform differentiation

The TV experience, as defined in the introduction to this section, is central to what TV operators – and in particular, pay TV operators – bring to the market.

The usefulness – or essentialness – of the TV experience as a differentiator for operators is borne out by the responses of our survey sample. Sixty-three per cent of respondents agree that the TV experience is a useful way to differentiate a service, in addition to the content offering, pricing and other factors, with a further 21% agreeing that the TV experience is the single most important way for TV operators to differentiate their offering from competitors – meaning that a noteworthy 84% in total believe the TV experience is a key factor for service differentiation. Only 14% of respondents say that the TV experience is of limited use as a differentiator as consumers choose their provider mostly for other reasons with 2% holding the belief that the TV experience is of little or no value in differentiating a TV service, as consumers choose their provider entirely for other reasons (**fig. 6**).

Our respondents were also asked to consider the importance of each of 10 components of the TV experience as a differentiator. The highest rating goes to the inclusion as part of the TV experience of catch-up on-demand TV players from popular broadcasters, which was rated 'very important' by 56% of the sample survey. The next set of features in importance is the interactive linear TV guide, advanced search capabilities and recommendation tools, along with access to paid-for on-demand services from the service provider itself. All are seen as either 'very' or 'moderately' important by around three out of four respondents.

Next up in order of importance is access to multiple content sites via a TV app store, content enrichment features such as external-source movie reviews and sports statistics, and TV apps related to the content, with a majority of 67.5% and 66.1% respectively citing these as important differentiators.

Also seen as important are social interaction features and the availability of user-generated content that is relevant to the show being watched, with over half of respondents rating social interaction as very or moderately important. With service providers still at an early stage of integrating these relatively new elements into the TV experience, responses to our sample indicate they are likely to become more important – both for consumers and service providers – in the future as technology evolves to enable advanced capabilities in this area, as is shown by responses to our respondents' rating of features from a viewer's perspective (**fig. 7**).

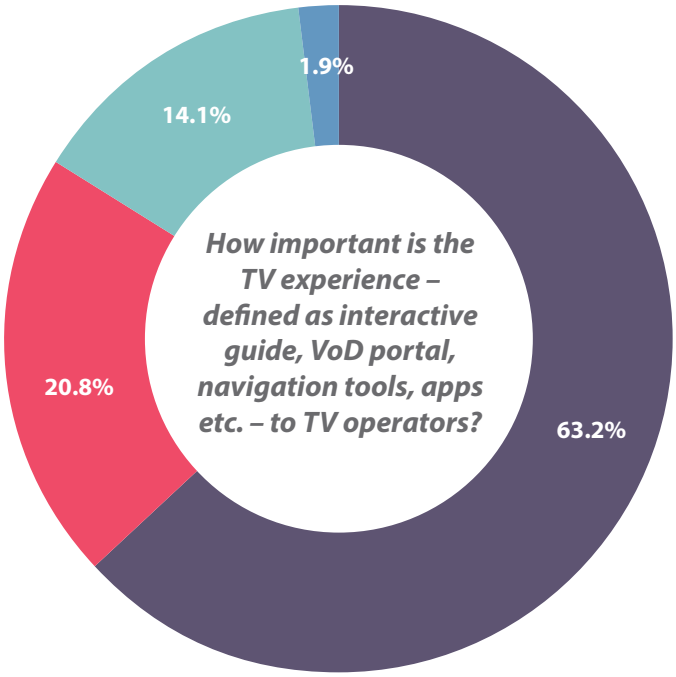
Useful features

Our respondents were also asked to rate a range of 13 features for perceived usefulness or importance from the viewer's perspective. Once again, on-demand services rate highly – in particular on-demand services from third-party providers such as Netflix or Amazon Prime Instant video. Over half of respondents rate this feature as 'very important' for consumers. The next most highly-rated feature is the backwards EPG that enables catch-up viewing direct from the guide, rated very important by 43% and moderately important by 44%. Both indicate the high importance, from the perspective of the user, of personal viewing capabilities and control of viewing.

The plain seven or 14-day linear TV guide is also still rated highly, with about 78% rating it as either very important or moderately important.

On the theme of enabling viewers to find content, unified search is also very highly rated, with 38% judging it to be very important and 44%

Fig. 6



judging it to be moderately important. Personalised recommendations based on viewing history and social ecosystem behaviour also scores highly, rounding off a set of very highly rated tools that enable viewers to find the content they are looking for as easily and smoothly as possible. Some 29% view the provision of personalised recommendations as 'very important' with a further 46% viewing it as 'moderately important'.

Outside of navigation tools, our survey respondents rate direct access to popular online video platforms such as YouTube, Vimeo and Dailymotion highly, along with access to second and third screen applications. Access to sites such as YouTube is judged 'very important' by 33% of respondents and 'moderately important' by 42%, while second and third screen applications is judged 'very important' by 31% and 'moderately important' by 46%.

Significant importance is also attributed to the provision of an operator-owned video-on-demand store, content enrichment features such as externally-sourced movie reviews and sports statistic, TV apps related to TV content such as games, weather and news apps, and the tools to enable social interaction such as the ability to see what friends are watching and cues to tune in from social networks. Sixteen per cent view social interaction as 'very important' and 39% view it as 'moderately important'.

Relatively less important – at least for now – is personalised advertising based on demographic and behavioural data, with 15% of respondents viewing personalised advertising as 'very important' from the point of view of consumers (as opposed to the point of view of operators and content providers hoping to make money from it), with a respectable 37% viewing it as 'moderately important'. The provision of user-generated content, relevant to shows, from online video platforms is seen as 'very important' only by 9% of respondents, with a further 35% viewing it as 'moderately important', a finding that needs to be weighed against the significant majority who believe access to sites like YouTube and the provision of second screen applications to be useful (**fig. 8**).

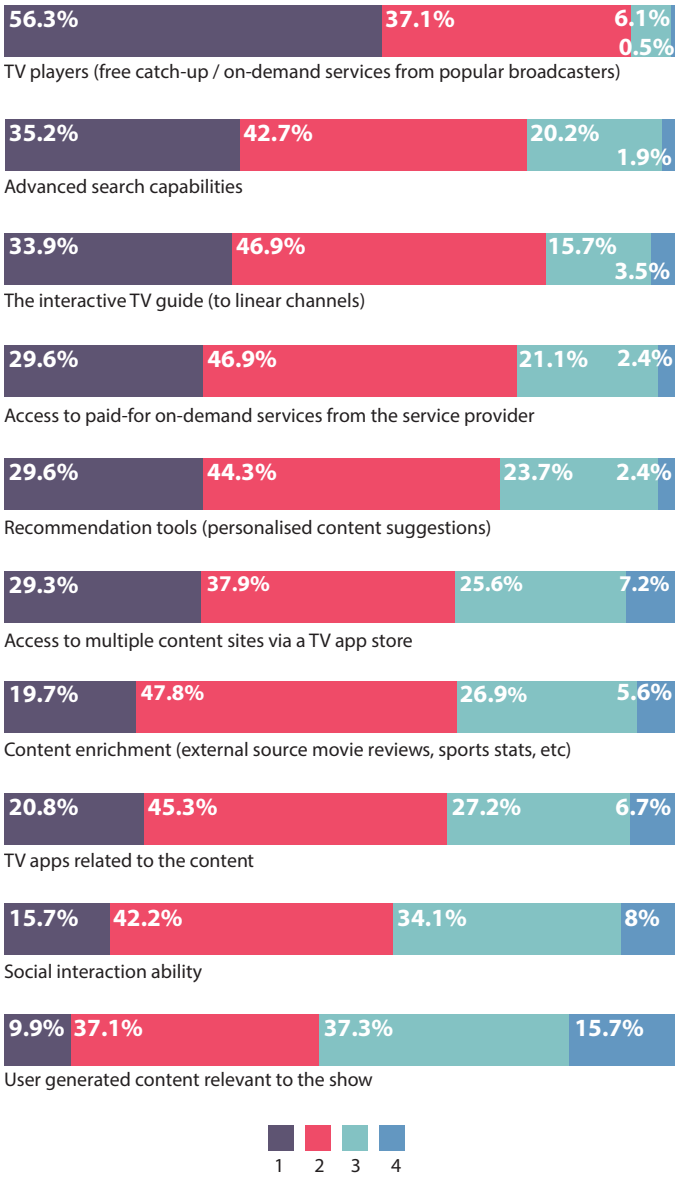
Unified experience

From defining what a good TV experience consists of, we moved on to ask our respondents what type of service or device currently delivers the best experience, from a choice of 12.

The clear winner is Apple, with devices based on the iOS operating system being cited as 'very good' by over a third of respondents and good by a further 47%. Android devices come some way behind, but still rate quite highly, with two thirds of respondents giving these a 'very good' or 'good' rating.

90% of respondents believe access to third-party VoD services is important to the TV experience

Fig. 7. Rate the following elements of the TV experience for their ability to serve as product differentiation tools for a TV operator



Device categories also given a very high ranking include internet-connected DVR-enabled set-tops controlled by pay TV operators, with operator-controlled set-tops being rated significantly ahead of retail devices with similar capabilities. In total, 72.2% of respondents give the operator-controlled DVR a rating of 'very good' or 'good'. Smart TVs also rank highly, in our respondents' view.

High-end pay TV boxes are followed by the humble desktop or laptop PC, with streaming devices that connect to the TV being seen

as offering a less compelling experience. This also applies even to the Apple TV box, which nevertheless scores a higher overall rating than competitors including Chromecast, Roku and – considered as a single category – games consoles.

Simple streaming boxes – whether supplied by pay TV operators or sold via retail outlets, also fail to score highly in responses to this question (**fig. 9**).

To the extent that answers to this question show a clear pattern, it is to suggest that integrated devices score highest in terms of the experience they provide, with Apple the best exemplar of this. External devices that take the user out of the core TV experience to access a different type of portal via an different HDMI input are viewed less favourably.

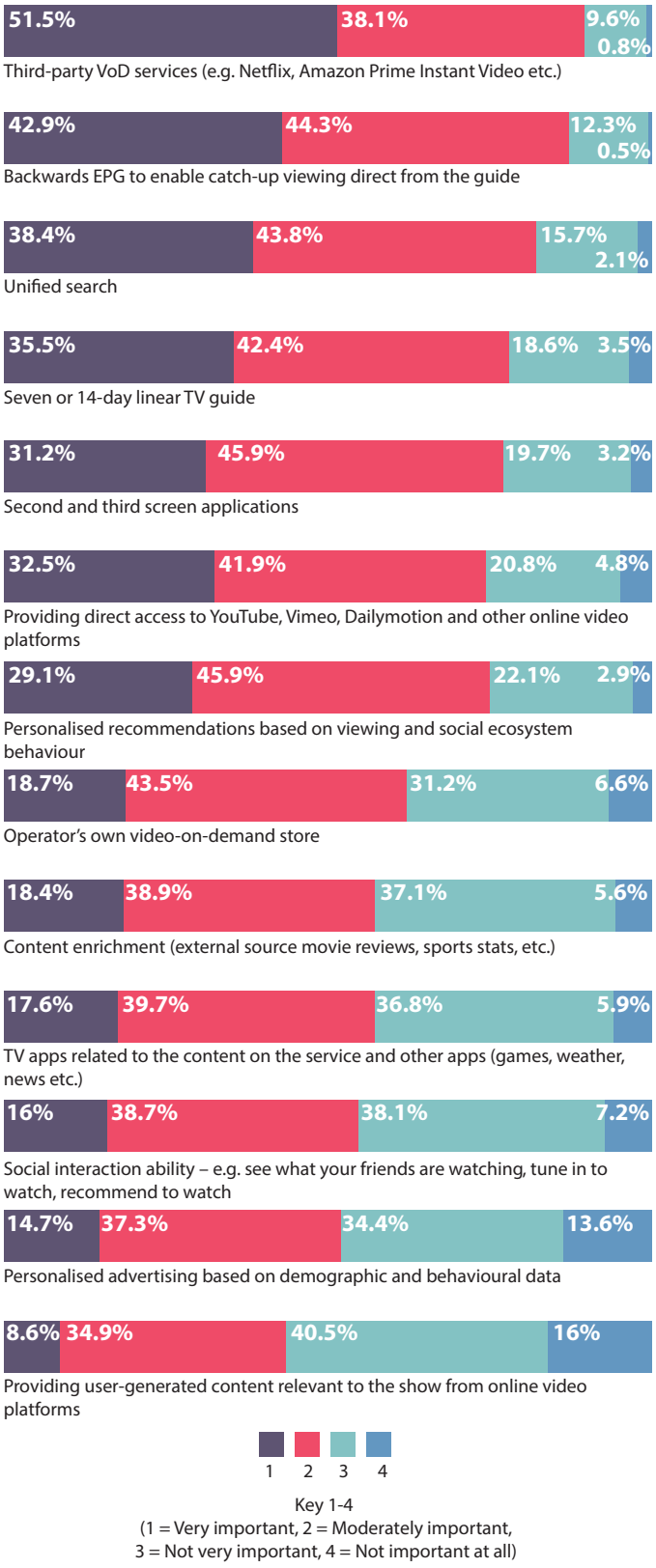
Like Apple, TV platform operators are able to provide an integrated experience to their customers. However, they should, in the view of our survey sample, be wary of exercising this control too tightly – respondents believe that a compromise should be reached between guiding consumers and offering them freedom to discover content from a wider range of sources, with additions that are targeted and contextual likely to be highly valued, in particular. Asked to choose which of four overall platform experiences is most likely to appeal to viewers, 36% of respondents agreed that viewers want a TV guide and user interface that is defined by the operator, which also gives viewers the ability to personalise the TV experience to some extent and to explore as wide arrange of content as possible according to their viewing preferences. A further 34% chose the slightly stronger position that viewers appreciate being guided in the choices they make by the TV operators, but they also like the option to explore as wide a range of content as possible, meaning that a majority of 70% believe a combination of control by the TV operators with some ability to personalise and discover content is the right way to provide a TV experience that meets viewers' expectations.

The outlying view that viewers are now accustomed to accessing any content they want via the web and apps in a wholly personalised way across a range of devices, and there is no reason TV should be different, attracted 23% of respondents, while the opposing view that viewers appreciate being guided in the choices they make and would prefer a TV experience controlled by a TV operator that is well-placed to know what works and what doesn't, attracted only 8% of votes (**fig. 10**).

The view that an integrated offering is, on the whole, best is reflects in responses to a question about the importance of a unified experience to consumers. Asked to choose which of four statements best reflected their view, 42% of respondents agree that a unified, consistent TV experience that is easy to understand and use is key to winning consumer loyalty and crucial as a differentiator for TV operators. A further 37% agree with the less emphatic view that a unified, consistent experience is useful, but not essential, to winning consumer loyalty and serving as a differentiator.

Only a minority of respondents agree with statements suggesting that such a unified experience is not very important. Twelve per cent agrees with the view that it is "no more compelling than a fragmented experience such as apps provided by multiple content providers" while 10% say that a fragmented TV experience such as apps provided by multiple content providers that gives lots of choice is more compelling than a unified experience controlled by an operator (**fig. 11**).

Fig. 8. Rate the following elements for their importance as part of the overall TV experience from the viewer's perspective.



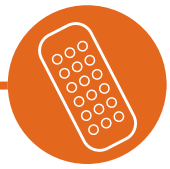
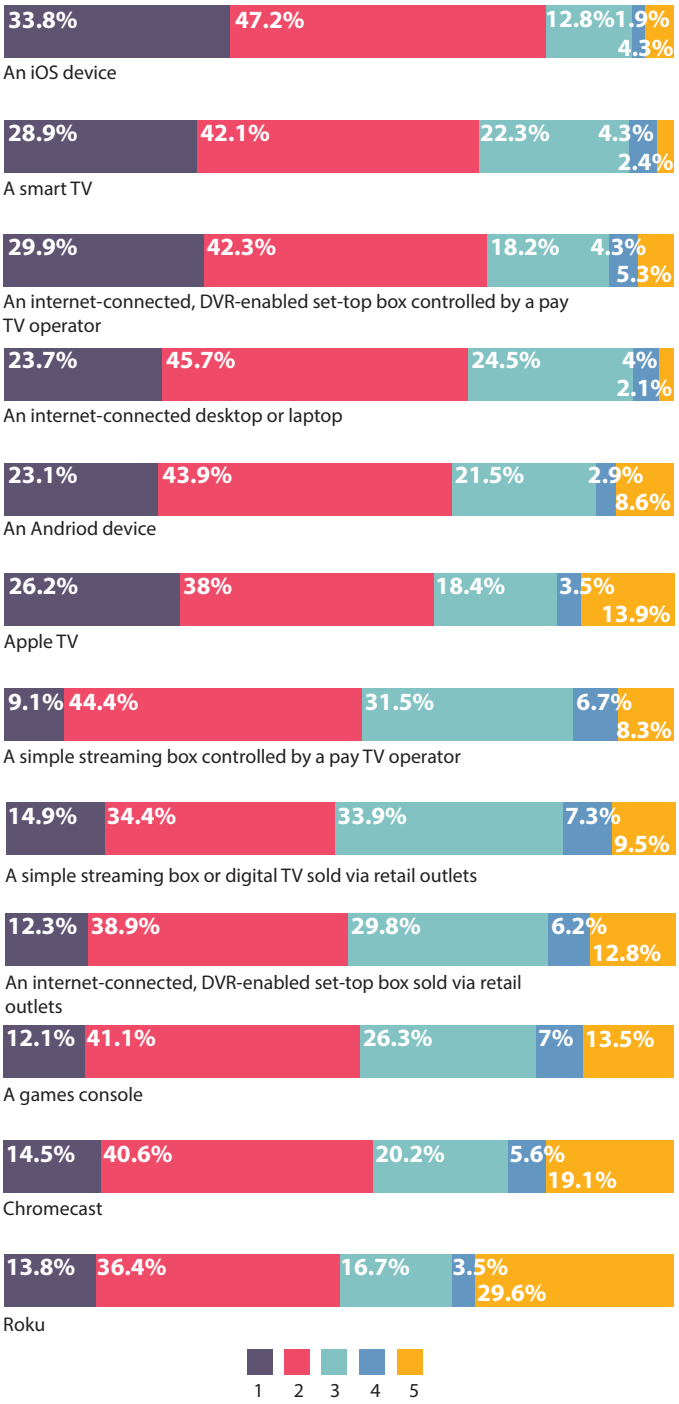
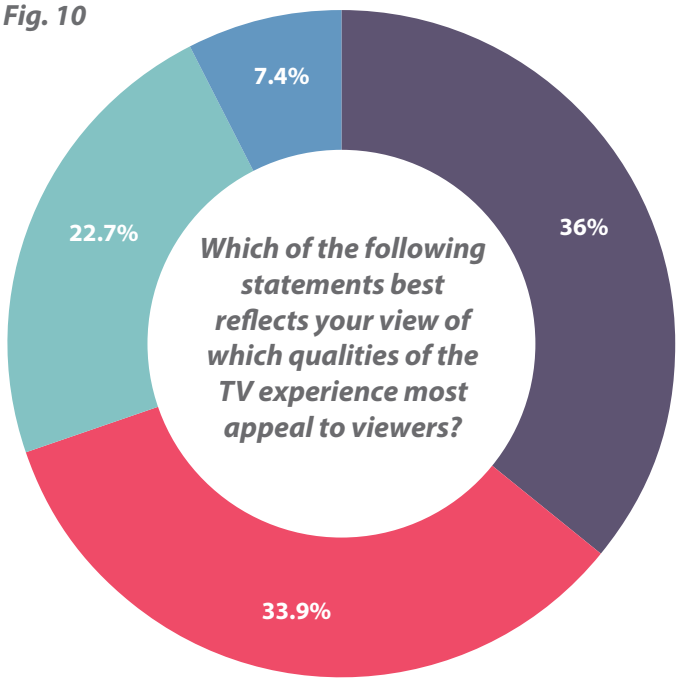


Fig. 9. Rate the TV experience you associate with the following services and devices.



Key 1-5
(1 = Very good, 2 = Good, 3 = Not very good, 4 = Very bad, 5 = Don't know)

Fig. 10



- Viewers want a TV guide and user interface that is defined by the operator, but that also gives them the ability to personalise the TV experience to some extent (for example – personalised apps) and to explore as wide a range of content as possible according to their viewing habits
- Viewers are now accustomed to accessing any content they want via the web and apps in a wholly personalised way across a range of devices, and there is no reason TV should be different
- Viewers appreciate being guided in the choices they make by the TV operator, but they also like the option to explore a wider range of content and apps if they choose to do so
- Viewers appreciate being guided in the choices they make, and a TV experience that is prescribed by a TV operator that is best-placed to know what works and what does not

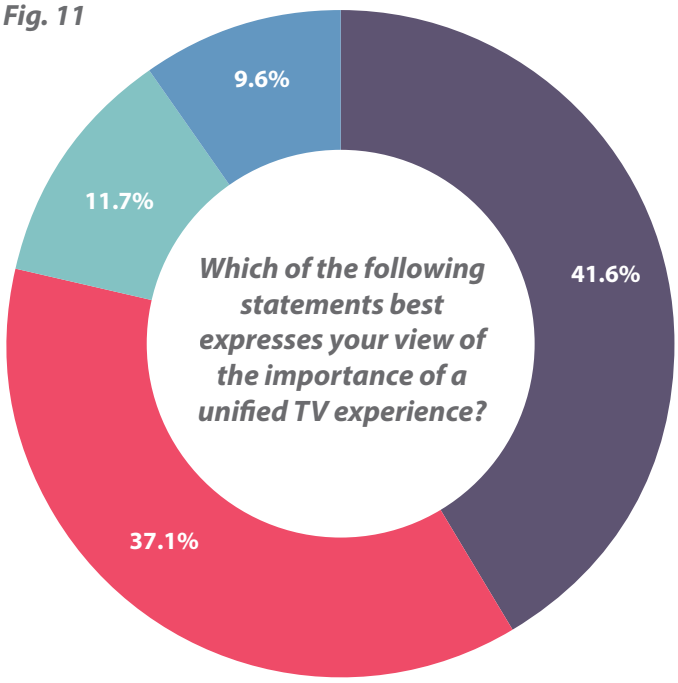
Conclusion

The answers provided by our survey responses highlight the growing importance of the TV experience both as a differentiator for operators and to enable consumers to navigate an every wider and potentially confusing choice of sources of content.

While respondents largely agree on the importance of the TV experience as a differentiator for operators and on some of the key features that would appeal to consumers, there is less agreement on the extent to which operators should seek to retain control of the overall experience and restrict the range of choices on offer to avoid confusion (or privilege the content supplied by the operator itself).

Respondents do agree that the experience should be a unified one, and operators are clearly well-placed to deliver the kind of integrated

Fig. 11



- A unified, consistent TV experience that is easy to understand and use is key to winning consumer loyalty and crucial as a differentiator for TV operators
- A unified, consistent TV experience that is easy to understand and use is no more compelling than a fragmented experience such as apps provided by multiple content providers
- A unified, consistent TV experience that is easy to understand and use is useful but not essential to winning consumer loyalty and serving as a differentiator for TV operators
- A fragmented TV experience such as apps provided by multiple content providers that gives lots of choice is more compelling than a unified experience controlled by the operator

experience that will enable users to navigate the content on offer, tailored to their personal preferences and offering contextual services aligned with the viewer's interest and content – particularly since they have a direct relationship with their customers and access to a wealth of data about how their services are used in practice.

On the whole, operators believe that users should have the ability to personalise their experience, albeit within a framework set by the operator, and should, importantly have access to a wide range of third-party content sources, leveraging the strength of internet-connected services that are becoming more widely available. In an age when content rights are becoming widely dispersed and content providers are increasingly adopting direct-to-consumer strategies, operators could be well advised to build a TV experience that accommodates a wide range of sources but also personalises their delivery to the individual viewer.

SPONSOR'S COMMENT

Michal Fridman, VP Marketing, Comigo Ltd.

Digital has fundamentally changed the way we live, work and interact. However, while a new generation of consumer-centric services has created elevated expectations and revenue potential, the TV experience and TV business model have yet to keep up. In a world where connectivity, data and technology offer endless possibilities, the TV business is fighting for viewers' attention and is looking for new potential revenues.

The results of this survey show that TV and content providers need to enhance their focus on the TV experience in order to keep up with this dramatically changing way of life. Majorities of respondents, in multiple responses, place in focus the need to provide an experience that brings external online sources into the TV experience. This is reflected, for example, by answers to the question on viewer perceptions, with a 75% majority stating that personalised and social ecosystem based recommendations are important for the TV experience, or by the 74.5% stating that providing access to related content from the open internet (such as YouTube, Vimeo, etc) in a contextual manner is an important feature of the TV experience.

When looking at the current available TV devices, the survey clearly favours a unified experience and also highlights internet-connected devices controlled by the TV operator as second only to an Apple device in terms of the TV experience they can deliver. This shines a positive light on the potential role for TV operators, with internet-sourced content having the potential to meet consumers' elevated expectations of the TV experience.

At Comigo we are set on enabling TV and content providers to deliver the TV experience they need. We do so by infusing the TV experience with the full power of the internet. At the core of our service platform is a patented experience engine that intelligently connects various digital and online services to content and viewers in a contextual manner. We offer a hardware (STB) and software (MW and multiscreen applications) platform that enables TV and content providers to capture new value from a wealth of contextual services. We put the TV experience in context.

OTT TV

Introduction

OTT has dominated debate about the future of TV for some time now and encompasses a wide range of activities – from pay TV and free-to-air broadcasters providing multiscreen catch-up services to disruptive new players seeking to overturn the established order.

Respondents to our survey, representing a cross section of the media industry but with a strong pay TV component, clearly believe that OTT is the future of TV, but they also believe that this will not necessarily be to the detriment of existing players.

While new entrants may attempt to disrupt the market with lower-cost, more flexible offerings that enable users to pay less and watch what they want when they want, established pay and free TV operators can use OTT to enhance their offerings and extend their reach. The services of disruptors such as Netflix may also be used by consumers to complement, rather than replace, their existing pay TV services.

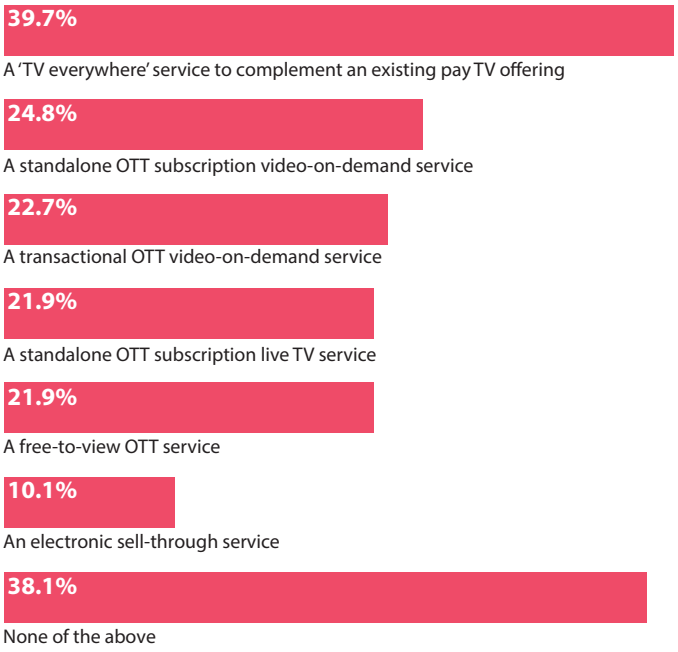
OTT TV

Death of broadcast

OTT services are now mainstream. Of our survey respondents, over three in five claim to offer some kind of OTT service. Some 40% of the total, or 64% of those that offer some kind of OTT service, provide TV everywhere to complement an existing pay TV offering, making this the single most common type of OTT service. Between 22-25% of the total, or 35-40% of those that provide some kind of OTT TV service, deliver one or more of the following – a standalone SVoD service, a transactional video-on-demand service, a standalone live TV subscription service or a free-to-view service. A smaller proportion provides an electronic sell-through service – 10% of the total or 16% of those that offer an OTT service of any kind (**fig. 12**).

While the number offering OTT to complement pay TV by delivering content to multiple devices suggests the resilience of the pay TV model and the desire of consumers to view content on any device, the choice of devices targeted by respondents with direct-to-consumer OTT offerings point to a changing landscape of video consumption, with iPads and Android tablets taking first and second position, followed by iPhones and Android phones. Smart TVs come next, followed by streaming boxes and other connected TV devices such as Roku, Apple TV, Chromecast and Amazon Fire TV, considered as a single category. Game consoles are targeted by a small proportion of OTT providers, alongside non-Apple and Android tablets and smartphones and other devices (**fig. 13**).

Fig. 12. If you provide a direct-to-consumer TV service, which of the following do you offer?



Respondents to our survey believe strongly that change is on the way and that broadcast TV's days are numbered. Asked to choose one of four statements that best reflects their view of how TV will evolve over the next 10 years, over 75% believe either that TV will be largely dominated by OTT and apps, with broadcast technology, walled-garden IPTV and traditional channels playing a diminishing role, or that TV will be totally OTT and app-based. While the majority – three in five of all respondents – endorse the more moderate of these positions, only 23% believe that TV will still largely be dominated by broadcast IPTV and traditional channels in 10 years, and

Fig. 13. If you provide a direct-to-consumer TV service, which of the following devices do you provide a video service to?

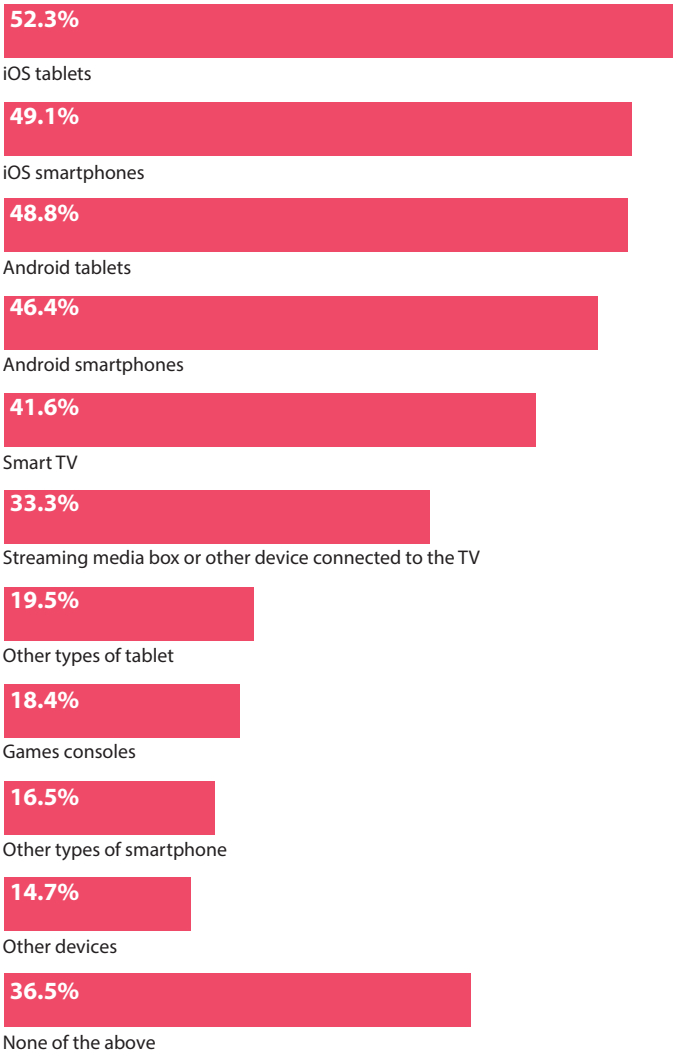
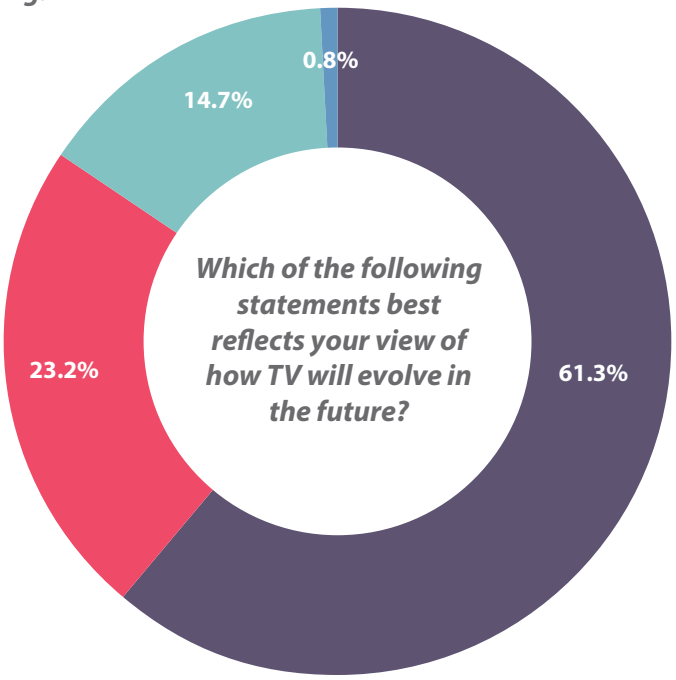


Fig. 14



TV in 10 years will be totally OTT and app-based, with broadcast technology and traditional channels becoming irrelevant

TV in 10 years will still largely be dominated by broadcast, IPTV and traditional channels

TV in 10 years will be largely dominated by OTT and apps

TV in 10 years will remain overwhelmingly dominated by broadcast, IPTV and traditional channels

fewer than 1% believe that TV will remain overwhelmingly dominated by these traditional distribution technologies (fig.14).

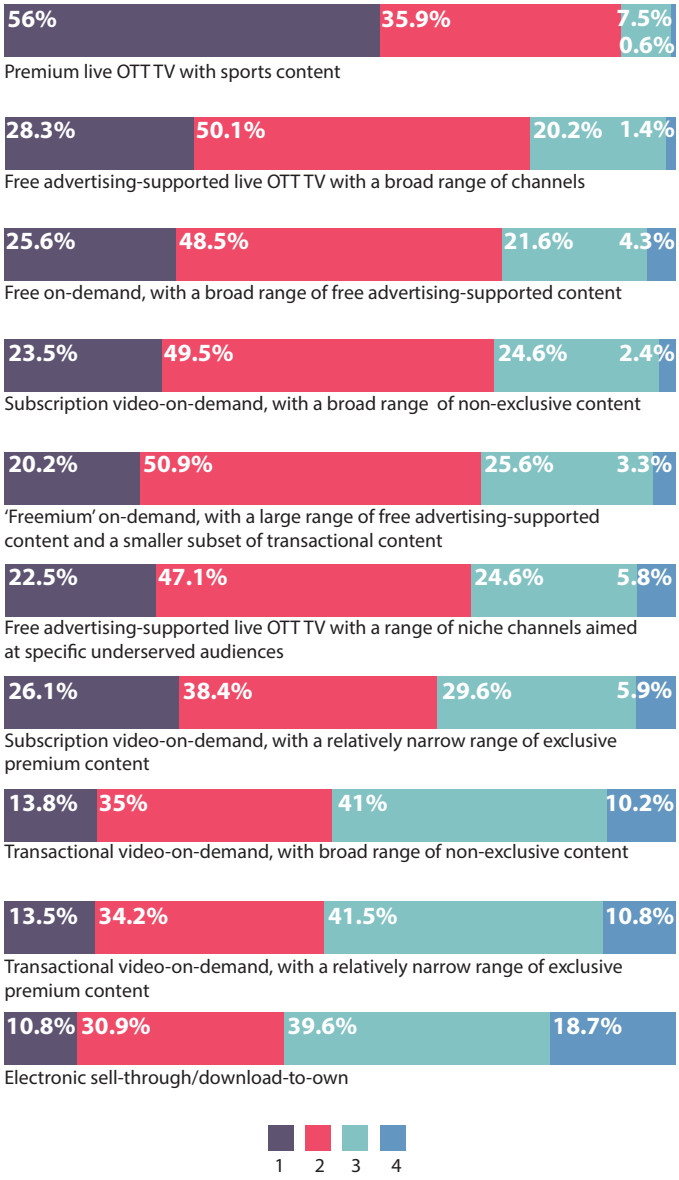
Business models

OTT TV is now something mainstream broadcasters must support in order to cater to the growing demand on the part of their viewers to access content on multiple devices including tablets, smartphones and games consoles. For standalone OTT TV providers – a significant and still growing group of service providers, led by Netflix but including a wide range of companies targeting either broad general audiences or niche-interest groups – there is a more urgent need to develop a business model that makes sense, since OTT is this type of operator's main line of business.

The success of Netflix has attracted most attention to the subscription video-on-demand service as a business model. However, our survey sample places SVoD firmly in the middle of a spectrum of models that an OTT TV provider could adopt.

When asked to rate a range of potential OTT TV business models in terms of their overall promise, our survey sample gives pole position to an offering of premium live OTT TV with sports content, with over half rating this as

Fig. 15. Which of the following OTT business models makes sense?



Key 1-4
(1 = Very promising, 2 = Quite promising,
3 = Not very promising, 4 = Not at all promising)

'very promising' and a further 36% voting it as being 'quite promising'.

Behind premium sports, our sample gives a very strong rating to free services. Close to 80% give free advertising-supported live OTT with a broad range of content a rating of 'very promising' or 'quite promising', with a similar proportion favouring free, on-demand, ad-supported offerings.

Another model favoured by our sample, with over 70% rating it as either 'very promising' or 'quite promising', is the freemium model with a large range of free advertising-supported content complemented by a smaller transactional offering.

Marginally less favoured by our survey respondents, but still attracting an overall positive response, is free, ad-supported, live OTT with a range of niche channels aimed at specific underserved audiences – rated very promising or quite promising by about 70%.

The sample rates subscription video-on-demand with a broad range of non-exclusive content as having a solidly respectable chance of providing a decent return, with over 70% of respondents rating this model as either 'very promising' or 'quite promising'. Sixty-five per cent of respondents are also favourable to SVoD with a narrow range of highly exclusive content as a way to make money from OTT TV.

Transactional video-on-demand itself is less appealing, with over 50% rating this as either not very promising or not at all promising, irrespective of whether the offering comprised a large range of non-exclusive content or a small range of premium exclusive content.

The least favoured model of all is electronic sell-through or download-to-own, with close to three in five rating this either not very promising or not at all promising (**fig. 15**).

Winners and losers

We asked respondents to give their opinion about which type of company is best placed to deliver on different OTT TV business models. The responses indicate that different types of organisation are best placed to deliver on each of the different business models that we identified.

Standalone OTT operators are seen to be best-placed to deliver viable SVoD services – perhaps with Netflix in mind – with three in five believing this type of company is well-placed to deliver a viable SVoD offering. For a mixed subscription and transactional model, pay TV operators are seen as best placed to make this work. For transactional VoD services, on the other hand, Hollywood studios and major independent producers have the edge, with over half of respondents saying they are best placed to deliver this kind of offering. Perhaps unsurprisingly, big commercial broadcasters such as ITV or TF1 are judged best-placed to deliver on the promise of free advertising- supported VoD. Large-scale online retailers and, to a lesser

Fig. 16. Which of the following types of companies are best-placed to implement a successful business case for these types of direct-to-consumer OTT services?

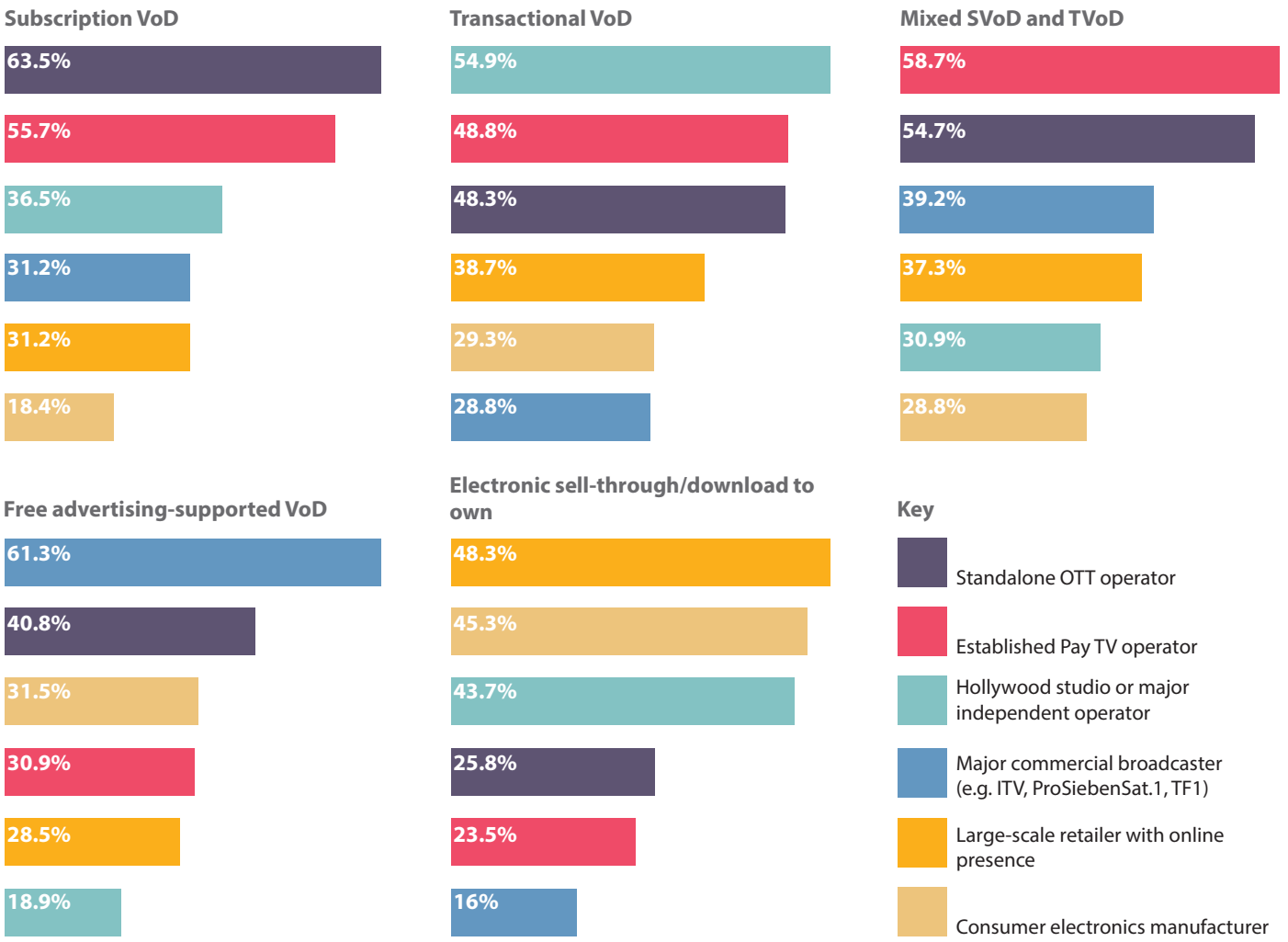
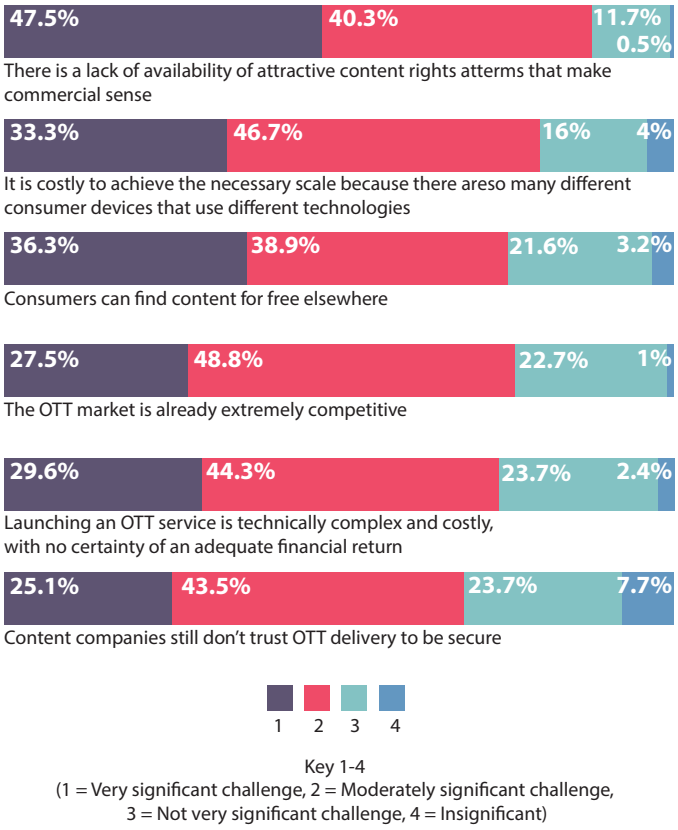


Fig. 17. What are the major challenges in delivering an OTT video service?



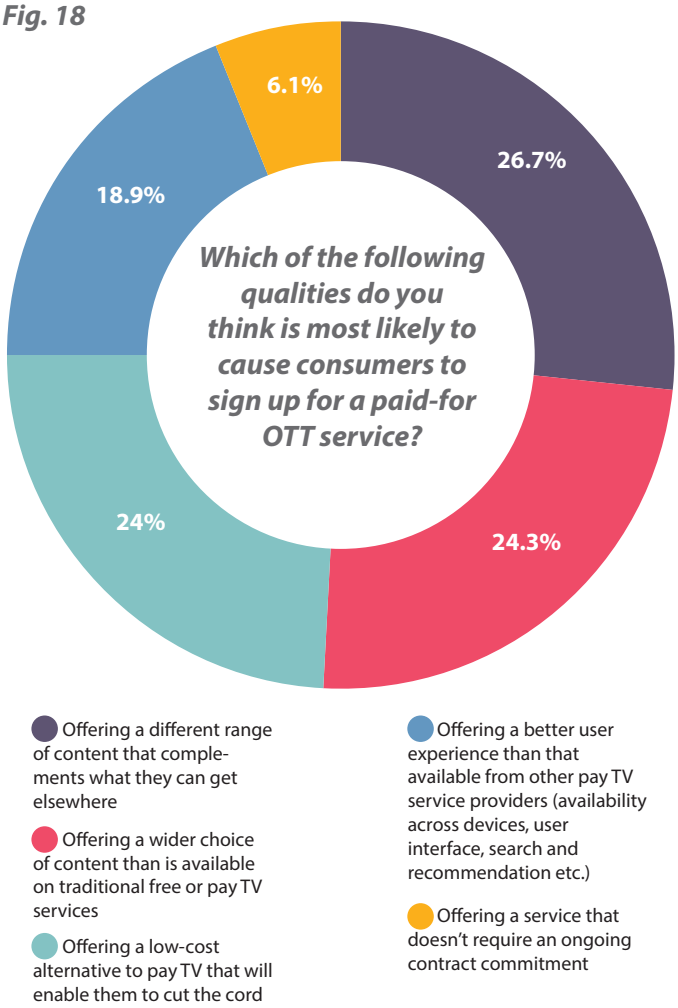
extent, consumer electronics manufacturers, are seen as in pole position when it comes to delivering electronic sell-through services (**fig. 16**).

The responses to this question suggest that, in the view of our respondents, no single type of company is best-placed to deliver on all OTT models and dominate the space. The attractiveness of a free ad-supported model would suggest that major broadcasters will be among those to benefit from OTT, rather than suffer as viewing migrates away from linear. However, the reliance of such companies on linear, ad-supported models means that they have work to do to deliver on this promise. Standalone OTT providers meanwhile are set, in the view of our sample, to capitalise to a greater extent than existing pay TV providers on the SVoD model.

Our respondents agree that all OTT models face significant challenges. According to the results of the survey, the greatest of these is the lack of availability of attractive content rights at terms that make commercial sense, cited as a very significant challenge by almost half of respondents and as a moderately significant challenge by a further two in five.

Other challenges include the cost of achieving the necessary scale to target multiple consumer devices and the ability of consumers to find content for free elsewhere. Of marginally less significance – but still very important – is the extreme competitiveness of the OTT market and the technical cost and complexity of launching a service with no certainty of an adequate financial return. Also important – but relatively less so – is a lack of trust on the part of content companies that OTT is secure (**fig. 17**).

Fig. 18



Consumer perceptions

The majority of our sample that offer OTT TV do so to complement an existing pay TV service. This may help explain views on what is most likely to incentivise consumers to sign up for a paid OTT service. The most popular view is that OTT can offer a range of content that complements what consumers can get elsewhere. The second most popular option is that OTT can offer a wider choice of content than traditional free or pay TV services.

Overall, about half of respondents believe that consumers will sign up to OTT to complement or extend their existing TV experience rather than replace it. The remainder believe people look to OTT primarily as an alternative to traditional media. Twenty-four per cent say that offering a low-cost alternative to pay TV that enables consumers to cut the cord is most likely to incentivise consumers to sign up to OTT, while a further 19% say access to a better user experience, including availability across devices, the user interface and search and recommendation, is key. A relatively small group – 6% – believe people choose OTT to use a service that doesn't require an ongoing contract commitment (**fig. 18**).

Our sample was asked to choose three devices that they believe will comprise the primary means of viewing TV in 10 years' time. While the

sample believes that broadcast TV's days may be numbered, the same cannot be said of the TV as a device itself. The smart TV, in the view of our respondents, will be a device of choice for viewing TV shows for years to come, with 76% including it among their top three. The second most popular category, chosen by 54%, is streaming media or other devices that are connected to the TV, followed by iOS tablets, chosen by 43%. iPads, Android tablets and other tablets taken together as a single category are endorsed by 84%, however. Smartphones – led by the iPhone – come next, with all smartphone categories combined chosen by 51%. Game consoles, on the other hand, taken as a single category on their own – though these are of course likely to be connected to a TV – are chosen by 11% (**fig. 19**).

Conclusion

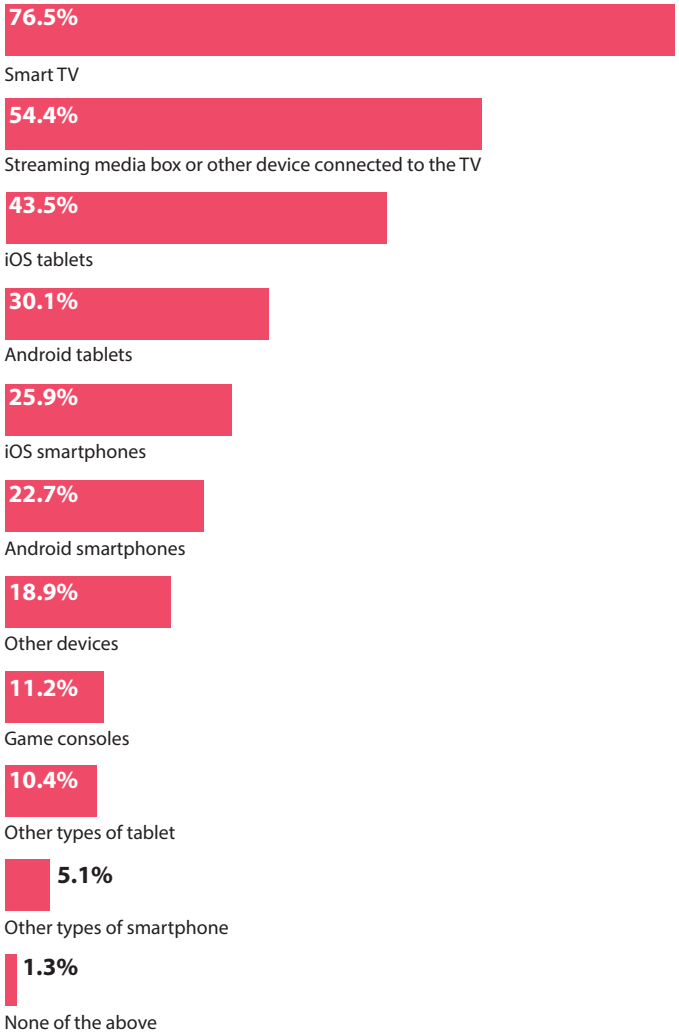
There remains considerable uncertainty about the business case for OTT. For established broadcasters looking to use OTT to extend their reach, making it pay remains elusive, while for standalone OTT providers the case has still to be made. The responses of our survey sample reflect this, with no clear consensus on the type of business model most likely to succeed. Many believe that free services offered by existing broadcasters are likely to win wide acceptance. Others believe in the SVoD model, with less support for standalone transactional VoD and electronic sell-through models.

Opinions are divided over the appeal of OTT to consumers, with about half believing that the latter are primarily looking to complement existing offerings while half believe that they are looking for alternatives.

Regarding OTT TV overall, our survey sample believes both in change and continuity. They believe strongly that the world of TV distribution and consumption will move strongly in the direction of OTT delivery over the next decade, with relatively few prepared to say that broadcast TV can be sure of its future.

On the other hand, survey respondents believe that the TV will remain the prime screen in the home and that pay TV operators in particular are well-placed to capitalise on the rise of popularity in viewing non-linear content on multiple devices. OTT therefore may not be as disruptive as some expect in undermining established players and content relationships.

Fig. 19. In 10 years, which three devices will be the primary means of TV viewing?



SPONSOR'S COMMENT

The DTVE Industry Survey highlights above all the fact that OTT TV is now mainstream, something that was also shown conclusively by Ooyala's recent State of the Broadcast Industry 2016 report, which found that adult viewers are increasingly turning to catch-up TV services, SVoD and other OTT-delivered ways of watching TV.

The DTVE Survey finding that 75% of industry insiders believe broadcast technology will play a diminishing role over the next 10 years and that viewing will largely be via OTT and apps shows that changes in consumer habits are real and that the industry is aware of the need to evolve to take account of these changes.

What is also clear from the survey is that the industry is still trying to work out what it needs to do to keep its head above water as the pace of change in consumer habits accelerates. Content providers can choose to back one or more of a range of business models, but the jury is still out on which of these is likely to deliver a return, with much depending on the type of content offered, the cost and complexity of acquiring that content and the nature of the audience.

We at Ooyala are aware that the content industry is facing a period of unprecedented change. That is why we deliver solutions that offer maximum flexibility to content broadcasters and content providers, and why we have invested in developing an industry-leading analytics capability with solutions to enable monetisation of that content.

For content and service providers, as this survey shows, there is all to play for as distribution opportunities continue to expand and consumers look for providers that offer them the maximum choice of when, where and how to view content.

Q&A: Rags Gupta

General manager, EMEA, Ooyala

To what extent has OTT TV now eclipsed broadcast as the most popular way to consume video content?

To be clear, OTT viewing has yet to fully eclipse broadcast TV viewing. According to eMarketer, a recent study showed that in 2015 U.K. audiences from ages 16-64 spent, on average, nearly 3 hours with linear TV versus 45 minutes with online video.

However, that gap will close as the audiences continue migrating online and premium content providers continue adopting OTT distribution. In large part, the migration is happening due to the explosion of connected devices, namely mobile and tablets, and particularly with younger generations. In fact, a recent Childwise report showed younger audiences in the U.K. now spend more time online than on TV. The study revealed audiences between the ages of 7 and 16 watch TV 60% of the time on tablets, phones or laptops. Further, that 37% of their TV viewing is on-demand as 67% see mobile devices as the primary means to access the internet.

The shift in consumer behaviour has caused broadcasters and upstarts to look to solutions like Ooyala to stand up compelling OTT products that will resonate with consumers and reach younger generations may possibly never have a cable or satellite subscription. One of our favourite examples in Europe is Hopster, the SVOD service focused on children's content.

What is driving the move to OTT TV and do you expect the shift to accelerate over the next three or four years?

As mentioned previously the deluge of connected devices on the market has been a catalyst for OTT adoption among both consumers and content providers. From our most recent Global Video Index, in Q3 of 2015 mobile made up 45% of all online viewing, up from 6.1% during the same timeframe in 2012, representing an impressive 616% growth in just three years. In those three years, we've seen a cadence of new devices from iPhones to Android, with bigger screens, faster connectivity, widely available Wi-Fi -- in Chesham they have built Wi-Fi into the streets -- not to mention ever-improving connected TVs, devices and dongles from Roku, Amazon, Apple, Google, Samsung and the like. Walk through any TV section in any electronics store today. It's become hard *not* to buy a Smart TV. Prices continue to drop and adoption continues to soar.

But most importantly, consumer demand and must be present, and it will be the driving factor for OTT in the years to come. TV is unique as it's been a synchronised growth between consumers and devices, each adapting and adopting as demand grows from either side. Still, consumers will decide how content providers produce, display and present video. If you recall, 3D was hyped to be the next best thing - which consumers quickly extinguished.

What impact do you think these changes will have on the pay TV industry and how should pay TV operators react?

A primary component that's benefiting the pay TV industry as content shifts online is the ability to apply analytics to daily business decisions. Understanding how audiences are engaging with content, where, when, on what devices, for how long, etc. – for both video and advertising – is highly valuable to inform their investment strategy. It helps show what content their audiences prefer and gives insight into what type of content they should license, avoid or choose to produce in-house. Ooyala is regarded as a leader in digital video analytics for broadcasters and publishers. Our product Ooyala IQ, which we make available both for Ooyala customers that choose us for video delivery and also as a standalone product for those using third-party video solutions, allows premium content providers to query against multiple aspects of their video business at once for real-time reports on what content is performing the best, viewer drop-off rates or to optimise ad loads in order to maximise revenue.

Further, in response to the wild successes OTT services have seen by providing video-on-demand (VOD) content, we see pay-TV operators investing heavily into live, online programming, such as sports or news. Live streaming is largely still a new frontier, and the next stage in the future of TV. To-date, global OTT platforms such as Netflix, Amazon and Apple are not yet offering live content, leaving an opening for primary pay-TV operators to capture that corner of the market – and the massive audiences - by standing up viable live, online offerings.

To what extent will the TV screen remain the focus of video consumption, whether from broadcast or OTT sources?

This is where we need to clarify the term "TV". Today TV is on any screen, not just in the living room. In that context, all screens will

continue to remain the focus of video consumption. It's just that now video consumption is fragmenting across multiple screens instead of appearing on just one; and arguably mobile is the go-to screen as consumption on those devices continue to soar. Our customers rely on us not only to deliver video and/or advertising on any device audiences may be using to view content, but in tandem to help them grow their business and revenue. As so many audiences are cutting the cable cord for OTT services, the trouble operators are facing is capturing the same revenue (or more) through subscriptions, advertising or transactions, while also figuring out how to grow their business and take advantage of new opportunities presented by online TV. The shift to digital TV has caused complex issues in the industry; we're here to help operators grow regardless of where they are in that transition.

What major changes do you expect in the way video content is monetised over the next five years?

If you were to ask me this question 5 years ago, I'm not sure I could have accurately guessed the state TV is in today. We've seen extraordinary growth and adoption for OTT, and there's zero indication it's slowing down. With that caveat, I can say today we're in what I call the 'great unbundling' phase. Over-priced cable packages with hundreds of unwatched channels are going to go by the wayside. In response, content owners and operators are exploring new ways to package and sell content that, again, meets consumer's expectations and pocket books. It's unclear how long this phase will take until all kinks are ironed out for the unbundled model, but it's well on its way.

What key features should an OTT video platform have to enable content owners to manage the evolution of viewing habits?

I break this down into what I call the three M's: Monetisation, Measurement and Media Logistics. At the core of all of these is analytics and data-driven insights.

Starting with Media Logistics, there's a stirring happening in the industry centred around the required backend work necessary before any video is published. Currently, it is terribly tedious to package and prepare content for delivery across various devices, online or on-air. There's still lots of paper involved, lots of duplicative systems, and lots of unnecessary overhead, all tied to antiquated infrastructure. Moving that process to a modern system designed for today's multi-platform world, based in the cloud helps expedite the processes, making it more efficient and streamlining the workflow so teams are able to not only produce more content, but to ensure that the content being published is optimised to return the best profit, and with the right measurement and insights in place to inform the most profitable future content decisions.

Measurement is predominantly pointed towards analytics. And it goes hand-in-hand with monetisation. Measurement is critical in understanding viewing habits today and the evolution of viewing habits to come. Simply put, there's more content available online than any one person could consume in a lifetime. Having a viewer's attention is a precious opportunity and content providers need to be set up for success. Analytics helps solve so many questions. Like, what content is performing the best on your site, across devices or syndication partners? What's the optimal ad load for individual videos to maximise revenue without jeopardizing the user experience?; What video recommendations should be shown to keep viewers engaged longer, translating into more profit for the publisher? Being armed with the best data helps businesses make the best decisions to maximise revenue.

Further, about monetisation, if the OTT platform is ad-driven, adopting programmatic technology will be critical moving forward as more TV budgets shift online and advertisers and premium publishers alike are more comfortable buying and selling advertising in programmatic settings.

Each of these is as big of an opportunity as the next, with all components complementing one another. Packaging content supports the metadata and tags that personalisation and advertising relies on, while the analytics and measurement fuels future monetisation strategies around content decisions and how content is produced.

www.ooyala.com

Ultra high-definition TV

Introduction

Ultra High Definition has been the talk of trade shows and tech fairs for years, but this step-change in technology is now a reality and looks set to grow dramatically. With the price of 4K sets coming down, the first clutch of 4K channels and services now available, and UHD standards now being crystallised, UHD looks ready to take over the mainstream.

For many industry watchers, ultra high-definition will be the natural precursor to high-definition – and will not be subject to the same false hopes that came to pass with 3D television. According to IHS research, household penetration of 4K TVs will reach 34% in the US and 25% in the European Union in 2019. Strategy Analytics meanwhile believes that 61% of annual TV sales will be Ultra HD by 2020, with the technology on track to become "an established feature of TVs" in the next five years.

Ultra high-definition TV

From our survey we can see that ultra high-definition plays a large part in operators' and broadcasters' plans, even if their moves to ultra HD have not yet been realised.

When asked if their organisation provides 4K or Ultra HD, 36.1% of respondents said that they plan to offer ultra HD TV in the next two to five years – be that 4K or even 8K iterations of the technology. (**fig. 20**). Some 22.8% said that they already provide ultra HD TV, while 16.4% said that they plan to launch ultra HD TV in 2016. This means that only a quarter of respondents (24.7%) that operate in this space and for whom the question is relevant have no plans to offer ultra HD TV at all in the coming years.

Among those that either already provide ultra HD TV – or plan to – fibre/IPTV was selected as the primary delivery technology for 38.7% of respondents (**fig. 21**).

For 61.3% of respondents the primary delivery technology for ultra HD will be either via a cable network (10.6%), direct-to-home (DTH) satellite (12.7%) or over-the-top (OTT)(14.8%) platforms, or a mix of the above (23.2%).

Business models

When it comes to business models, streamed pay-per-view or video-on-demand content delivered over broadband is selected as the most suitable for Ultra HD TV – both for today and for three years from now.

Looking at the market in its current state, 50.7% think that VoD via broadband is a 'highly suitable' business model, while 29.6% think it is 'moderately suitable', 16% think it is 'fairly suitable' and just 3.7% think it is 'not suitable' (**fig. 22**).

For the UHD TV market today, 42.1% think that running a linear pay TV channel is a highly suitable business model and 27.5% think it is a moderately suitable model. Pay-per-view or VoD delivered over broadcast – most likely via push VoD – is also considered a good option. Some 41.3% think this is a highly suitable model, while 36.5% think it is moderately suitable with only a paltry 5.9% claiming it to be not suitable at all.

Launching a linear free-to-air channel is thought to be a less suitable UHD TV business model. Only 17.3% of our survey respondents think this is a highly suitable model, compared to 29.1% that say it is not suitable.

Fig. 20

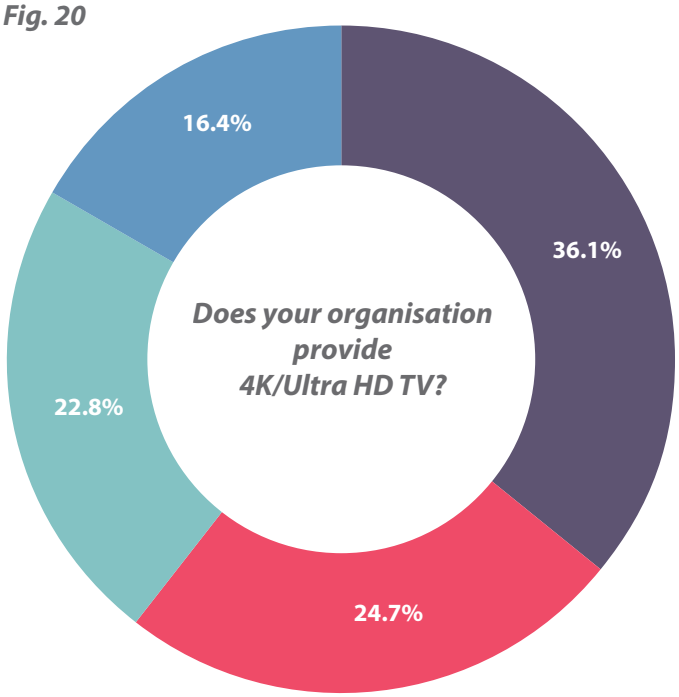


Fig. 21

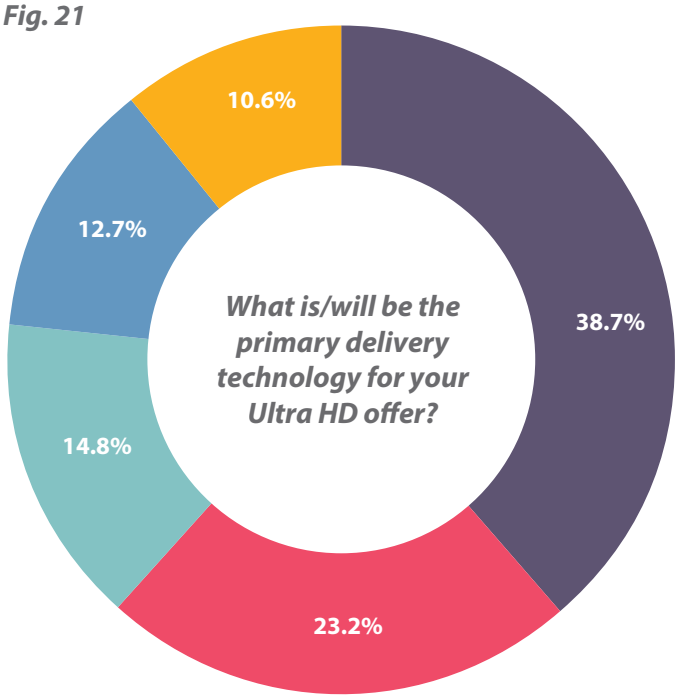


Fig. 22. What business model do you think is most suitable for Ultra HD TV today?

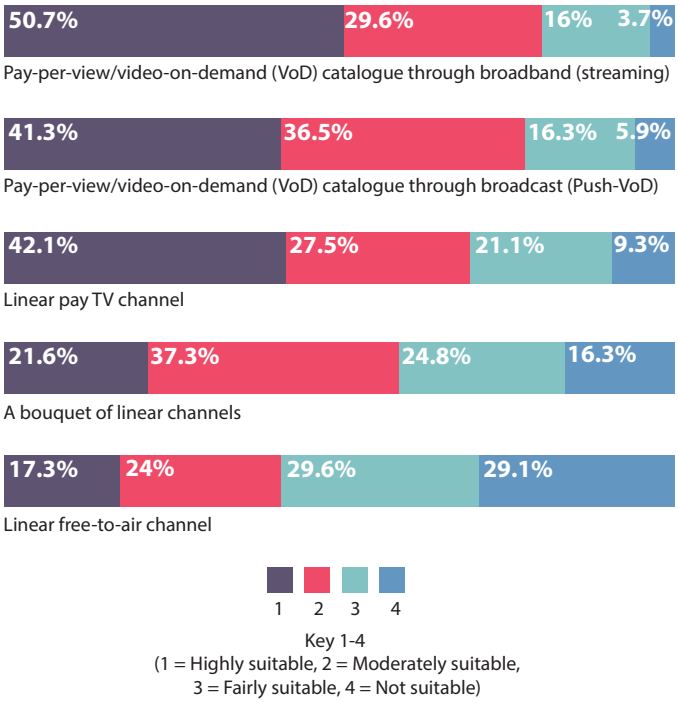
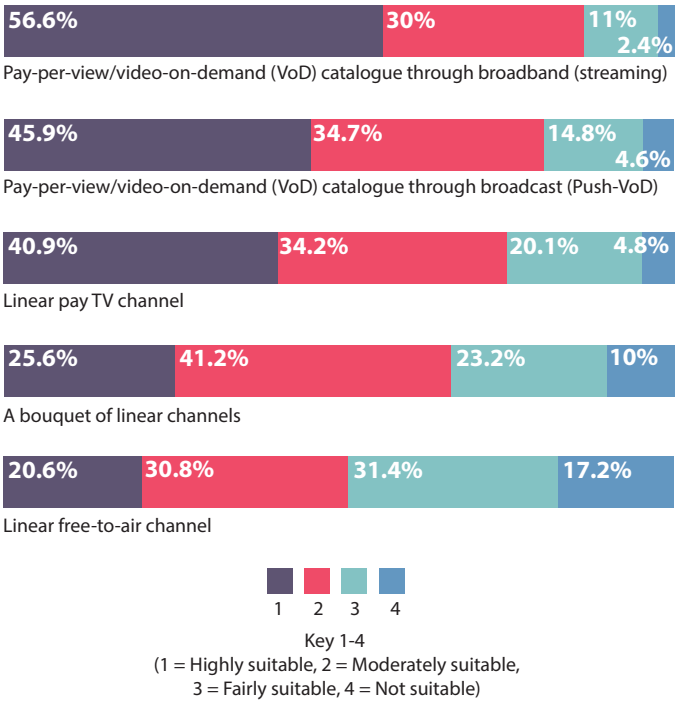


Fig. 23. What business model do you think will be most suitable for Ultra HD TV three years from now?



The other 53.6% sit on the fence, considering a linear channel to be either moderately or fairly suitable.

Meanwhile, most people consider running a bouquet of linear channels to be a good UHD TV business model, though 16.3% think that this is not suitable. Some 21.6% think it is a highly suitable idea and the rest sit in the middle.

Looking ahead, survey participants think that business models for UHD TV will not drastically change in the next few years (**fig. 23**). A slightly higher 56.6% think that pay-per-view VoD streamed through broadband will be a highly suitable model three years hence, while a smaller 2.4% say this will not be suitable. Respondents think that VoD via broadcast will also remain a highly viable UHD TV business model come 2019, with 45.9% saying that this will be highly suitable, 34.7% moderately suitable and 14.8% fairly suitable.

Just 4.8% of people think that broadcasting a linear pay TV channel will not be a suitable model three years from now – a drop from the 9.3% that think the same is true today. However, at 40.9%, fewer respondents also think that this will be a highly suitable model three years from now, down 1.2 percentage points compared to today.

More people think that a bouquet of linear channels will represent a good business option in three years' time – 25.6% think it will be highly suitable and 41.2% moderately suitable, compared to 21.6% and 37.3% in today's business climate.

However, a linear free-to-air channel will still be the least suitable UHD TV business model in 2019, according to our survey sample. Some 17.2% of respondents say that this will not be suitable for UHD, the highest proportion of any of the business models presented. Yet this figure is down compared to the 29.1% that think linear FTA is unsuitable today – implying that there is hope for this approach in years to come. In three years, 20.6% say that this business model will be highly suitable, 30.8% say it will be moderately suitable and 31.4% think it will be fairly suitable.

Content is king

One thing that is very clear from our survey is that when it comes to UHD TV, not all content is equal. Our industry respondents think that enjoyment of UHD content will vary massively depending on genre – with movies and sports most likely to be enjoyed in this format and rights-cleared user-generated content the least likely to be enjoyed with extra-high clarity and resolution (**fig. 24**).

Ranking how much they thought viewers or subscribers will enjoy various forms of content – on a scale of 'very likely', 'somewhat likely', 'unlikely' or 'not applicable' – a massive 80.3% think that film viewers will be 'very likely' to enjoy UHD, with fewer than 1% deeming this 'unlikely'. At the other end of the scale, just 8.3% think viewers will be very likely to enjoy UHD user-generated content, compared to 55.5% who say this is unlikely.

In terms of popular UHD content, 80.3% say that live sports ia 'very likely' to be enjoyed in this format, compared to 3.2% who say that this was unlikely. Nature, travel and history documentaries also rank highly with 62.4% saying it is very likely that viewers will want to see these in ultra high-definition and a further 29.3% agreeing this is somewhat likely.

When it comes to fiction TV series, respondents are divided on

80% of respondents believe movies and live sports will be key drivers for UHD TV

whether people will be 'very' or 'somewhat' likely to enjoy these in UHD at 45.6% and 43.2% respectively. Some 31.5% think that live culture events are 'very likely' to be enjoyed in UHD, while just 13.1% think animation or children's programmes will be enjoyed in UHD.

News also comes low on the list with just 13.1% claiming that viewers are 'very likely' to enjoy this in UHD, compared to 52.3% who think this unlikely. Similarly game shows get a 11.7% 'very likely' approval rating for UHD and a 53.1% 'unlikely' score.

Technology matters

Full development of an Ultra HD offering in the short-term will be dependent on a number of factors. We asked respondents to rank a number of these on a scale of one to six in terms of most-to-least important and came up with a weighted average based on the responses (**fig. 25**).

Perhaps predictably, the participation of the content production industry is deemed to be the most critical factor in the full deployment of UHD TV. This has a weighted average score of 41.7%. Second most important, according to our respondents, is unified technological standards and specifications with an average score of 34.8%.

In order of importance, collaboration among industry players to share the cost and benefits of UHD comes next, followed by new revenue models. Backwards compatibility of consumer equipment ranks at 24.4% in terms of importance while stronger consumer campaigns achieve a 23.9% score.

UHD's evolving standards are a major consideration as the industry moves from the Digital Video Broadcasting (DVB) group's DVB UHD-1 Phase 1 system, which it developed in 2014, to UHD-1 Phase 2. The latter will include – among other things – the capability to provide images with a high dynamic range (HDR) and is expected to be finalised this year, with the first DVB UHD-1 Phase 2 services due to follow in 2017.

Our survey sought to find out which 4K and Ultra HD standards our respondents support, and excluded companies (**fig. 26**) that this was not applicable to. Of the remainder, 21.1% say they support the DVB's UHD-1 Phase 1 standard, which offers a step-change from HD in terms of resolution but does not include improvements like HDR, higher frame rate (HFR), Wider Colour Gamut and Next Generation Audio.

A smaller 18.9% say that they support the DVB's UHD-1 Phase 2 specification, which will include all of the aforementioned improvements – HDR, HFR, Wider Colour Gamut, and Next Generation Audio. However, an additional 52.4% say that they will support both, assuming backwards compatibility between Phase 1 and Phase 2. Just 7.6% said that they will

Fig. 24. How likely is it that your viewers/subscribers would enjoy the following genres in Ultra HD?

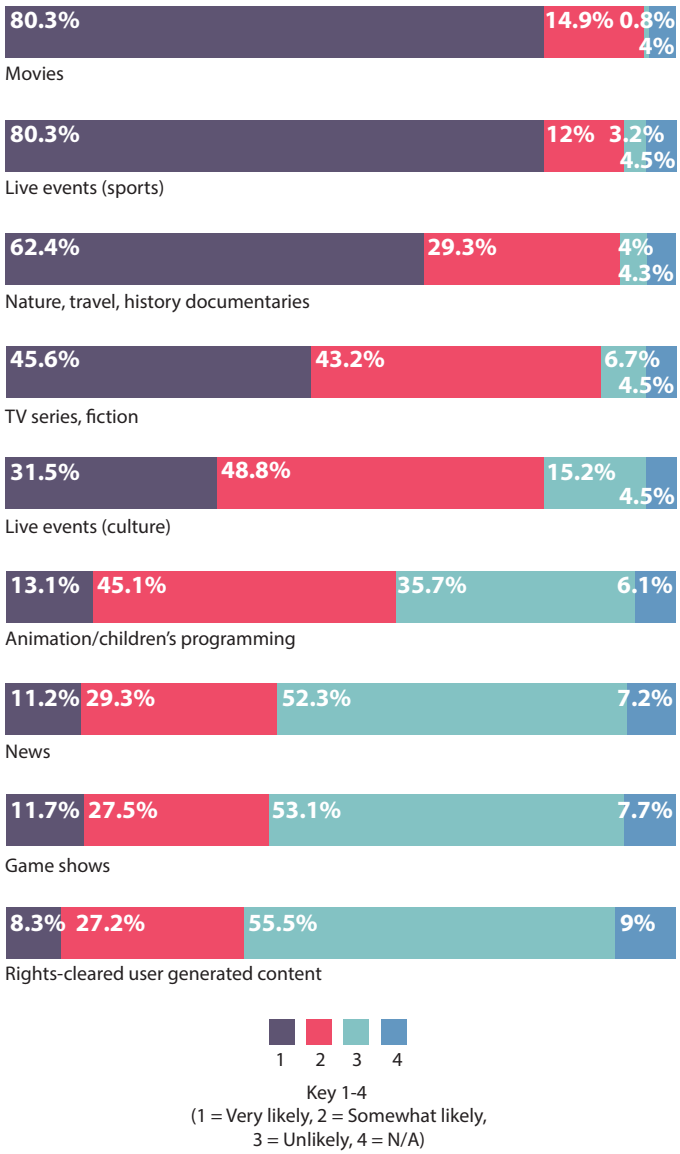
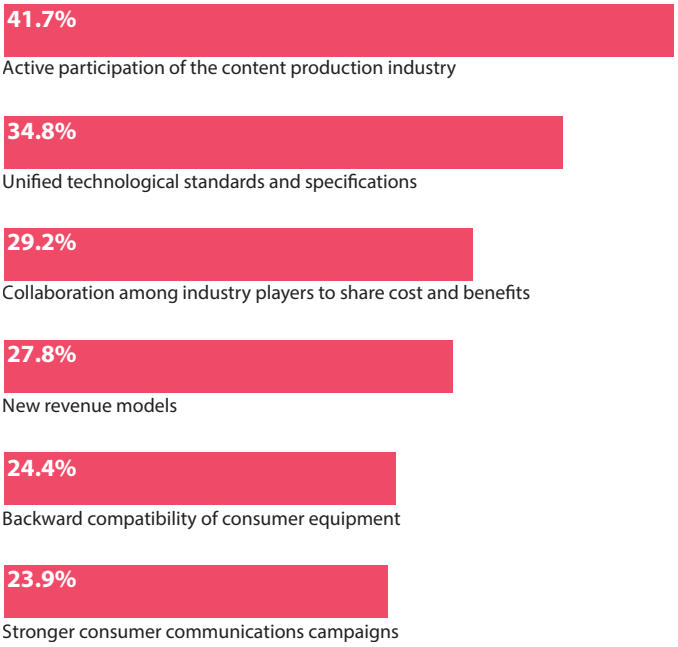


Fig. 25. Which of the following in your view will be critical in enabling the full development of an Ultra HD TV offer in the short term?



support neither specification and will instead wait for 8K.

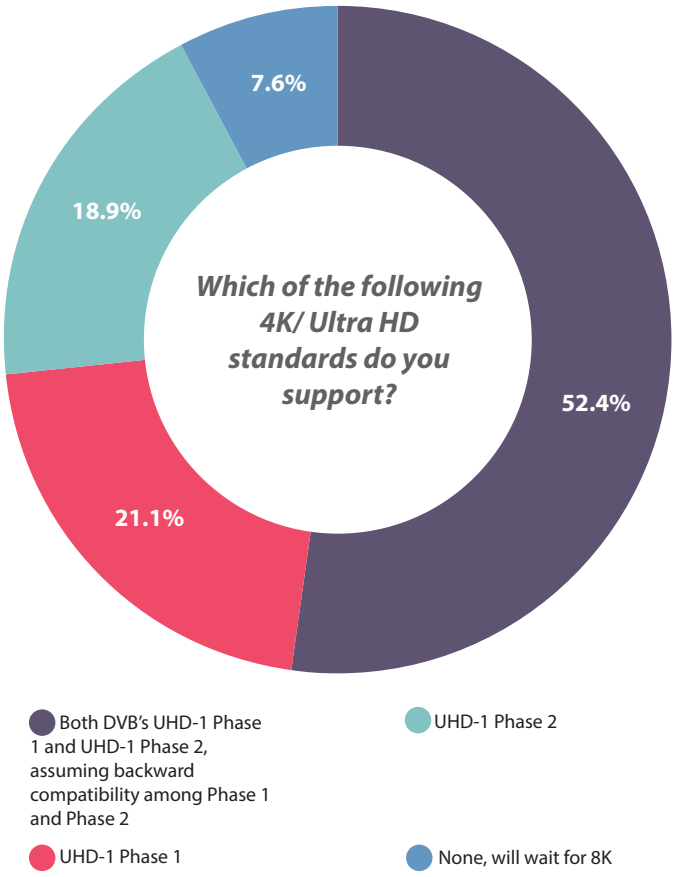
The final question in this section asked respondents to judge which of a number of UHD-1 Phase 2 HDR standards is likely to be adopted – from a list that includes the likes of the DVB toolbox, ATSC 3.0 and Dolby Vision dual layer (**fig. 27**). The technology that the highest proportion of people think will be adopted as an HDR standard is MPEG Fast Track, which 17.2% of people think is 'very likely to be adopted' and 31.4% think is 'somewhat likely' to be adopted, with only 3.3% judging that it will not be adopted.

Blu-ray has a similarly high approval rating. Some 15.7% think this HDR standard is 'very likely' and 26.3% 'somewhat likely' to be adopted, while 11% think it will not be adopted. Just below this, Dolby Vision Dual Layer has a 'very likely' adoption rating of 13.6%, a 'somewhat likely' score of 27.4% and a 'not likely' rating of 17.7%.

It is worth pointing out that for this question a high proportion of respondents for each option did not rank the technology and instead admitted they 'do not know this standard'. The proportion of people that did this ranged from a low of 36.9% to a high of 43.8% for each of the options – except Blu-ray, where a comparatively low 26.7% say they do not know the standard.

At the same time, in most cases only a very small proportion of people think a given technology will outright 'not be adopted'. Blu-ray, the best-known HDR standard, is again here the exception with 11% saying this will not be adopted. In all other cases the number is in the small, single-digit figures – ranging from 2.3% for SMPTE 2084 and 2086 to 5.9% for ATSC 3.0.

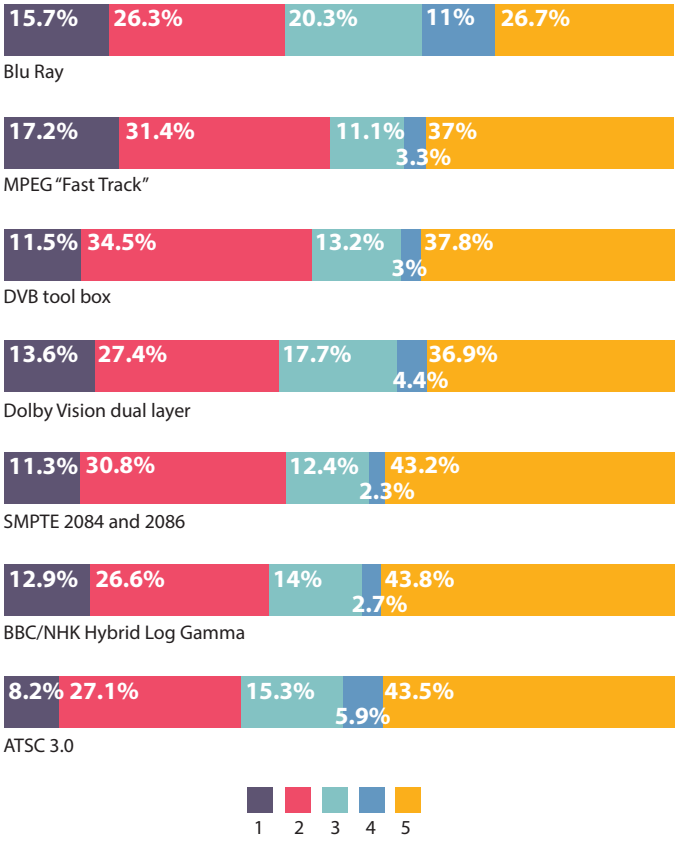
Fig. 26. Which of the following 4K/ Ultra HD standards do you support?



Conclusion

Overall, our research shows that television insiders are betting on UHD and can already discern which business models will be most suitable for its uptake. While content will be crucial to the success of UHD, the industry can already detect the different categories of programming that it believes will be the most important to viewers. Furthermore there are clear standards that are now starting to be followed, which will help cement UHD's seemingly bright future.

Fig. 27. In your view, which UHD-1 Phase 2 HDR standard is most likely to be adopted?



Key 1-5
(1 = Very likely, 2 = Somewhat likely,
3 = Not likely, 4 = Will not be adopted
5 = Do not know this standard)

SPONSOR'S COMMENT

Michel Chabrol, director, innovation marketing and digital cinema, Eutelsat

We are very pleased with the DTVE industry survey results that show that 23% of respondents already provide Ultra HD services (fig. 19), a growing trend among Eutelsat clients also, with Tricolor TV recently announcing the launch of two UHD channels (Tricolor Ultra HD and Insight UHD), and new tests by Digiturk.

Even in the early days of a new TV format, with relative scarcity of content, satellite is recognised by 36% of respondents as key for the delivery of quality UHD – 12.7% exclusively via satellite and 23.2% hybrid solution (fig. 20).

Over 40% of respondents see a combination of either linear pay TV and/or non-linear content as a go-to-market strategy (fig. 21). Linear pay TV channels are considered the ideal business model, with satellite ideally suited for a standalone broadcasting solution or a hybrid one.

(Fig. 23) 80.3% of respondents expect live sport to be one of the key types of content to be broadcast in Ultra HD. Satellite will play a crucial role in supporting this development, benefiting from bandwidth availability and unique ubiquitous coverage.

At Eutelsat, we are ready to accompany the broadcasting industry through an exciting transition that will propel consumers into a world of immersive television. We look forward to putting our capacity, our 4K1 demo channel and our long experience in introducing innovative formats at the service of the broadcasting community.

TV Everywhere

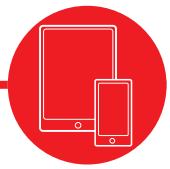
Introduction

Television is having an identity crisis as content that was once available on the box in the corner of the living room can increasingly be accessed across any screen, in or out of the home, at any time.

While Netflix, Amazon and other disrupters in the over-the-top video space have caused a shift in how consumers expect to be able to access content, the TV industry has responded in kind. TV Everywhere, the catch-all phrase for authenticated pay TV services that let viewers watch the content they pay for in the way they choose, has been gathering momentum for some time.

A North American study by GfK at the end of 2015 claimed that 53% of consumers in pay TV homes have used TV Everywhere services to watch content – up 10 percentage points compared to 2012. However, it added that 'TV Everywhere' as a brand name is still struggling to build awareness among consumers.

In the second quarter of 2015, TV Everywhere viewing in the US was up 63% year-on-year according to a separate study, published last September, by Adobe. Its Digital Video Benchmark report claimed that some 12.7% of pay TV viewers were watching this content on different devices and that authenticated viewing on TV-connected devices, such as Apple TV and Roku, grew 110% year-on-year.

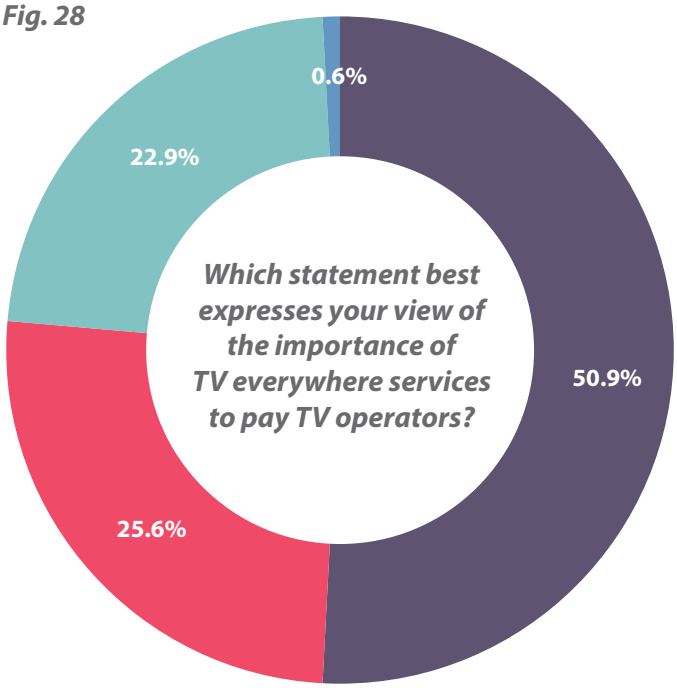


TV everywhere

Half of all Digital TV Europe Industry Survey respondents (50.9%) agree that TV everywhere is a very important element of pay TV operators' services – about equal in importance to other enhanced TV services such as catch-up TV, DVR, subscription and transactional video-on-demand and second-screen apps (**fig. 28**). This compares to a miniscule 0.6% who say that TV everywhere is "not particularly useful or important" within a pay TV operator's range of services.

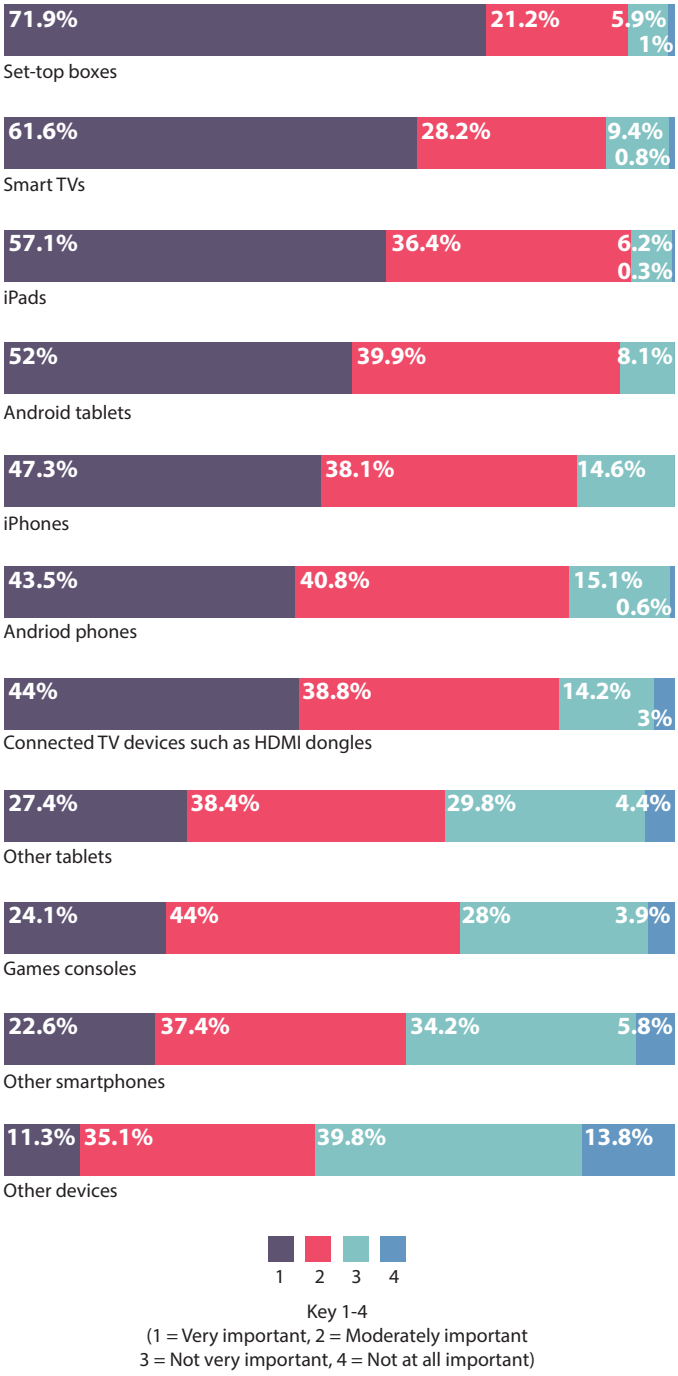
The remaining respondents are roughly evenly divided on whether TV everywhere is the most important thing that a pay TV operator can offer or something of limited value. Some 25.6% say that TV everywhere is the 'single most important enhanced TV service' and is vital to ensuring subscriber loyalty and providing a customer experience equal to that of rival offerings. A similar portion, 22.9%, say that TV everywhere

Fig. 28



- TV everywhere is the single most important enhanced TV service that pay TV operators can provide
- TV everywhere is a very important element of pay TV operators' services, about equal in importance to other enhanced TV services
- TV everywhere is a useful element within a pay TV offering, but is of less importance than other enhanced TV services
- TV everywhere is not particularly useful or important within a pay TV operator's range of services

Fig. 29. Which of the following devices are the most important for pay TV operators to reach with TV services?



is a "useful element within a pay TV offering", but of less importance than other enhanced TV services like catch-up TV, DVR, subscription and transactional video-on-demand, and second-screen apps.

When it comes to the type of devices that pay TV operators should reach with their TV services, respondents back a wide range of gadgets. In fact, more than half of our industry sample say it is 'very important' to be present on four of 10 named devices in our poll (**fig. 29**). However, TV delivery is still deemed more important than mobile delivery.

The top category of device is the set-top box, with 71.9% of our sample claiming it is most important for pay TV operators to reach people on these devices and a further 21.2% saying it is 'moderately important' to do so. Second most important is smart TVs with 61.6% claiming it is very important and 28.2% moderately important to reach viewers on these.

This puts both of these TV-centric delivery methods ahead of the iPad – a device that 57.1% of people think it is very and 36.4% moderately important for pay TV operators to reach. Android tablets come next with a 52.0% 'very important' and 39.9% 'moderately important' rating from respondents. Interestingly both iOS and Android tablets rate above their OS-equivalent smartphones. iPhones are 'very important' for 47.3% of respondents and 'moderately important' for 38.1%, while Android phones are very important and moderately important for 43.5% and 40.8% respectively.

Just below these in terms of the weighted average of responses, are connected TV devices such as HDMI dongles, which are very important to 44.0% and moderately important to 38.8%. Meanwhile, towards the bottom of the list are game consoles and non-iOS and non-Android tablets and smartphones. The number of people that said it was 'not very important' to reach people on these devices outnumbered the proportion that said it was 'very important' to do so.

Turning to the business objectives associated with TV everywhere, the most compelling argument for offering content across a range of devices is to increase customer loyalty and reduce churn, according to our respondents (**fig. 30**). Some 56.3% think that TV everywhere is 'highly effective' at doing so, with another 37.3% believing it to be 'moderately effective'.

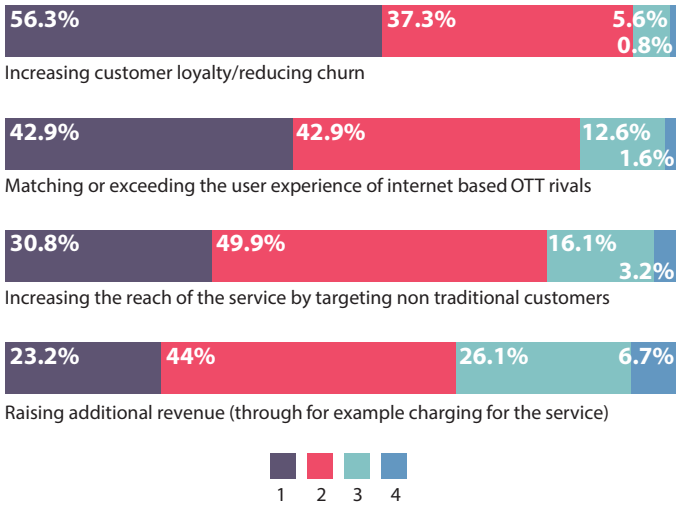
Using TV everywhere to match or exceed the user experience of internet- based OTT rivals is deemed 'highly effective' by 42.9% of people and moderately effective by exactly the same proportion. Using it to increase the reach of a service by targeting non-traditional customers is considered moderately effective by 49.9% of people and highly effective by 30.8%.

However, respondents don't think TV everywhere is a good means for raising additional revenues. Some 26.1% say that charging more for the ability to watch content on more screens is 'not very effective', more than the 23.2% who think it is a 'highly effective' business objective, while 44% believe it to be 'moderately effective'.

Rising to the challenge

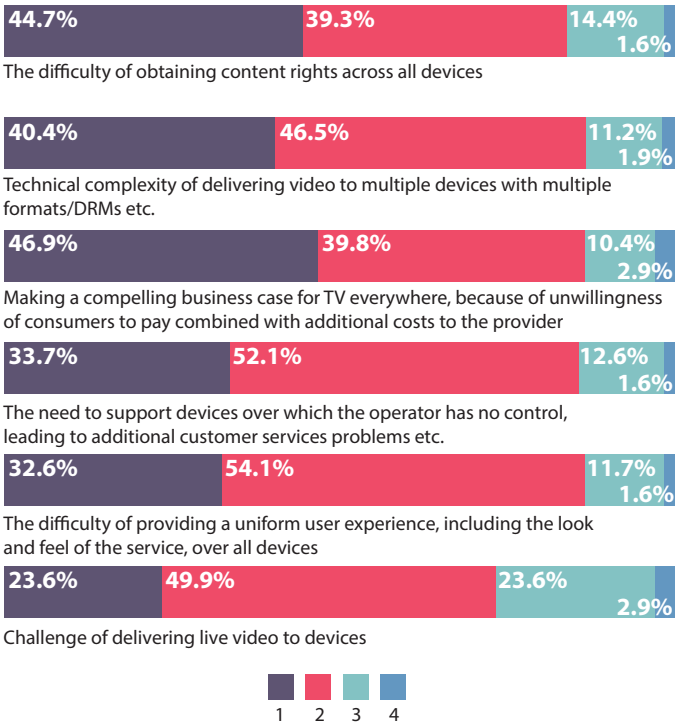
In terms of challenges in deploying TV everywhere services, a number of obstacles are highlighted as 'very' or 'moderately' challenging to operators (**fig. 31**). Difficulty in gaining content rights across all devices is among the most testing of the factors named, with 44.7% claiming

Fig. 30. How important is TV everywhere in meeting these business objectives of pay TV operators?



Key 1-4
(1 = Highly effective, 2 = Moderately effective
3 = Not very effective, 4 = Not at all effective)

Fig. 31. What are the major challenges facing operators in deploying TV everywhere services?



Key 1-4
(1 = Very challenging, 2 = Moderately challenging
3 = Not particularly challenging, 4 = Not at all challenging)

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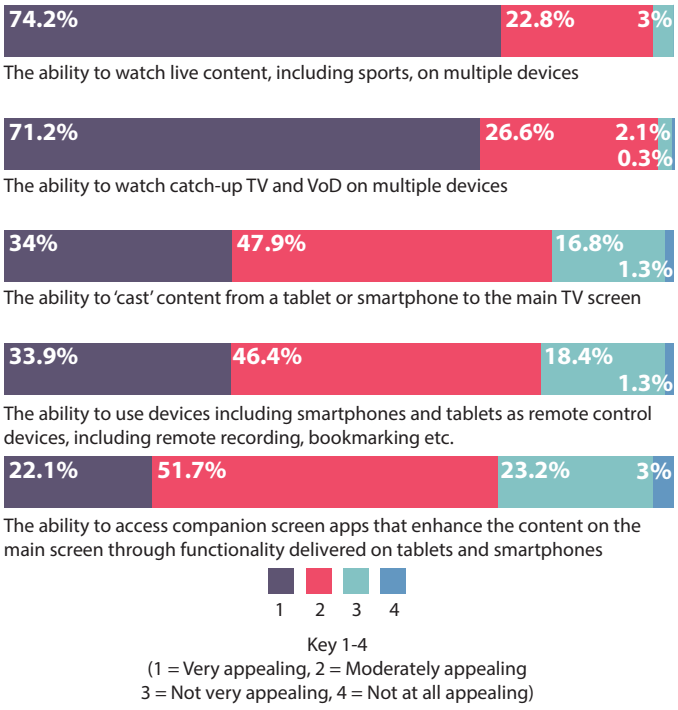
72% of respondents think the set-top box is still the best place to deliver pay TV services

this is very challenging and 39.3% moderately challenging. The technical complexity of delivering video to multiple devices with multiple formats and DRMs is also identified as being very challenging by 40.4% and moderately challenging by a further 46.5%. The challenge of making a compelling business case for TV everywhere due to unwillingness by consumers to pay, combined with additional costs, is very challenging for 46.9% and moderately challenging for a further 39.8% of respondents. Meanwhile, the need by operators to support devices that they have no control over, resulting in customer service problems, is a very challenging issue according to 33.7% of people and is moderately challenging for another 51.1%.

Elsewhere, the difficulty of providing a uniform user experience over all devices – including the look and feel of the service – is considered moderately challenging by 54.1% and very challenging by 32.6%, while 11.7% say this was 'not particularly challenging'. Finally the exact same proportion of people say that delivering live video to devices is 'very challenging' as those that say it is 'not particularly challenging' at 23.6%. Another 2.9% say this is not at all challenging, while the remaining 49.9% say it is a moderate challenge.

Fig. 32 How appealing do you think the following functionalities are to consumers?



While TV operators are clearly keen to evolve to the new reality of multi-device, online viewing, what do consumers think about TV Everywhere services? For our respondents (**fig. 32**), two functions stand out for viewers: the ability to watch live content, including sports, on multiple devices; and the ability to watch catch-up TV and VoD on multiple devices. The first is identified as very appealing by 74.2% and moderately appealing by 22.8%, while the second fared similar with 71.2% saying that catch-up VoD across devices is very appealing and 26.6% moderately appealing.

The ability to click content on a mobile and watch it on a TV screen, or use a mobile device as a remote control, is (relatively) less appealing to viewers, according to our survey. Some 34.0% of respondents say that the ability to 'cast' content from a tablet or smartphone to the main TV screen is very appealing, while 47.9% say it is moderately appealing and 16.8% not very appealing. Meanwhile, the ability to use smartphones and tablets as remote control devices – including for remote recording and bookmarking – is very appealing according to 33.9%, moderately appealing to 46.4% and not very appealing to 18.4%.

Companion screen apps that enhance content on the main screen by delivering additional content on tablets and smartphones are deemed to be 'not very appealing' by a higher proportion of respondents (23.3%) than to those who think they are 'very appealing' (22.1%). Some 3% say these are 'not at all appealing' while the remaining 51.7% say they are moderately appealing.

Conclusion

TV Everywhere experiences are important for pay TV operators and increasingly the pay TV channel providers themselves. In December, Discovery launched its first US TV everywhere streaming service, Discovery Go, with a content offering spanning nine US channels – Discovery Channel, TLC, Animal Planet, Investigation Discovery, Science Channel, Velocity, Destination America, American Heroes Channel and Discovery Life.

Meanwhile, HBO's move beyond authentication with the US launch of its standalone HBO Now service last year was heralded as a major milestone for the pay TV industry as a whole.

Our survey clearly shows that industry insiders believe that pay TV operator-provided TV Everywhere services are at least as important as other 'enhanced TV services' like DVR viewing and catch-up TV. A quarter think that it is the single most important thing that pay TV operators can provide.

Television content is no longer consigned to the one screen. However, offering programming to that main screen remains of paramount importance, even if viewers do increasingly want to tune in from smartphones and tablets.

Big data

Introduction

Big data is a major topic for the TV industry, even if its potential is yet to be fully realised. While online services like Spotify and Netflix have to some extent shown the way – the latter particularly so with its famed recommendation algorithms – other players in this space are upping their efforts.

Last November Telefónica acquired big data specialist Synergic Partners, integrating the company to its business intelligence and big data department. A month earlier Liberty Global made a strategic investment in Guavus, a provider of real-time big data analytics applications, designed for planning, operations and marketing.

Our survey clearly indicates that industry insiders think big data will have a major impact on the TV industry in the years to come. However, the applications of that data and the ease in which it can be exploited are less clear.

Big data

Uses of data

Some 43% of respondents to our survey believe that big data will transform both the quality of service of TV offerings and deliver new ways of making money through knowledge about the income, tastes and preferences of viewers (**fig. 33**). By contrast, fewer than 1% agree that big data will have "no impact" on either quality of service or ways of making money from TV services.

Some respondents are however unclear about where the revenue potential of big data lies. A third of respondents think that big data will improve the quality of service of TV offerings but is "unlikely to deliver significant new ways of making money" – far more than the 18% who think big data will deliver new ways of making money from TV but not a significant increase in service quality.

In terms of the use-case options for big data, industry execs agreed that there were a number of compelling ways for TV operators to make use of data (**fig. 34**). A massive 90.7% of respondents think that using data to send content recommendations and offers to subscribers, based on their previous consumption patterns, is either a 'very compelling' or 'moderately compelling' idea.

A large percentage of people think that using data to decide what type of content to buy and offer to subscribers is either very compelling (44.8%) or moderately compelling (43.5%). A similar proportion also say that using data to identify and solve problems related to things like buffering time, bandwidth and video artefacts is either very or moderately compelling.

Respondents are more divided on how good an idea it is to use data to send subscribers targeted ads based on their previous viewing habits and demographic data – 38.4% think this idea is very compelling, 37.6%

Fig. 33

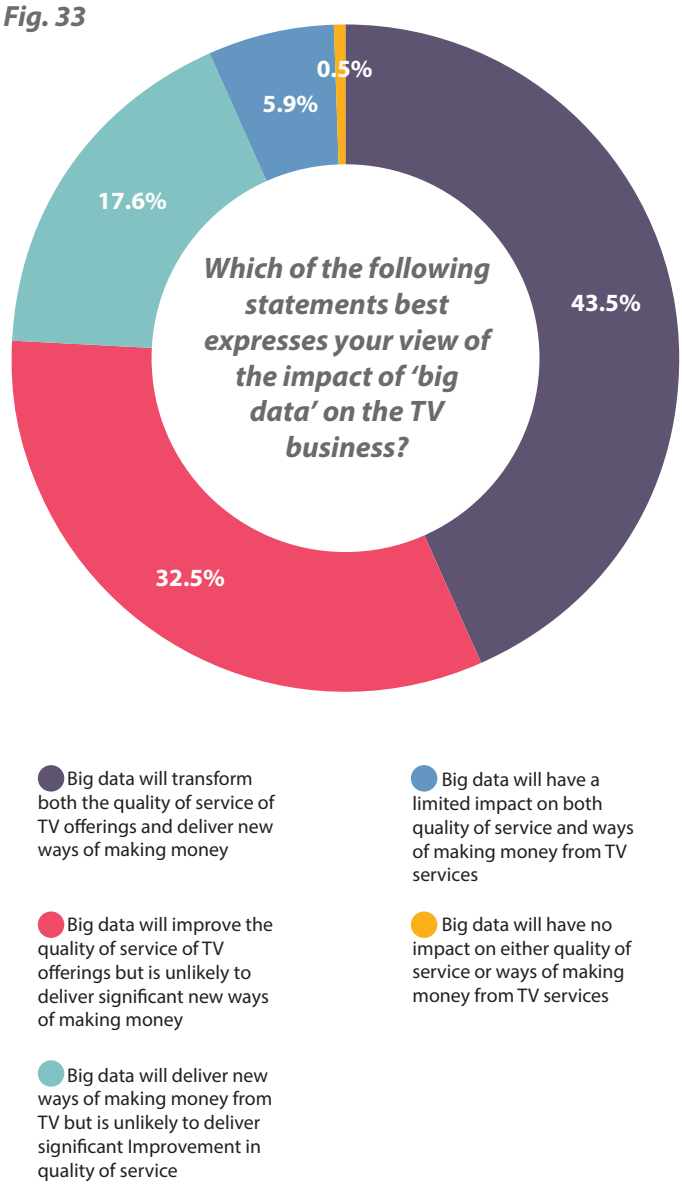


Fig. 34. What are the most compelling ways for TV operators to make use of data to benefit subscribers?

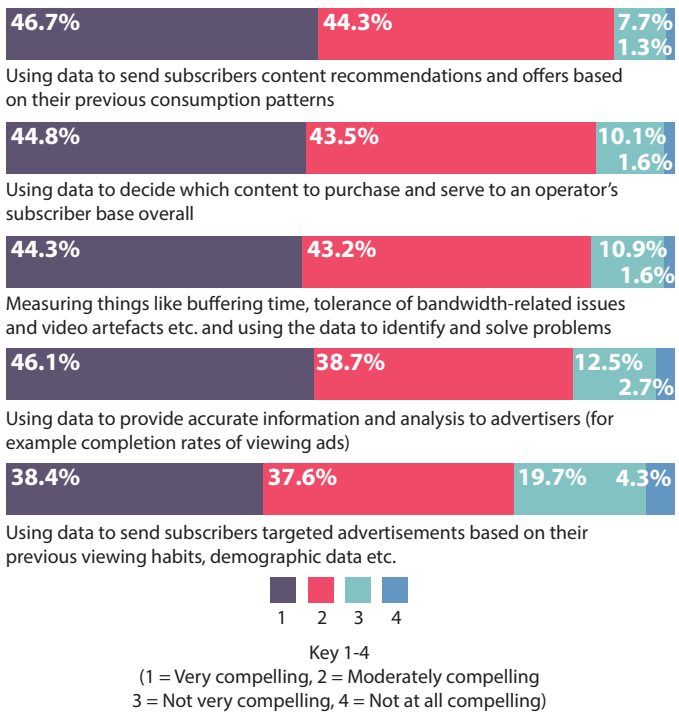


Fig. 35. Which types of companies are well placed to benefit from collecting data through monetisation/ cost reduction/improving the subscriber experience?

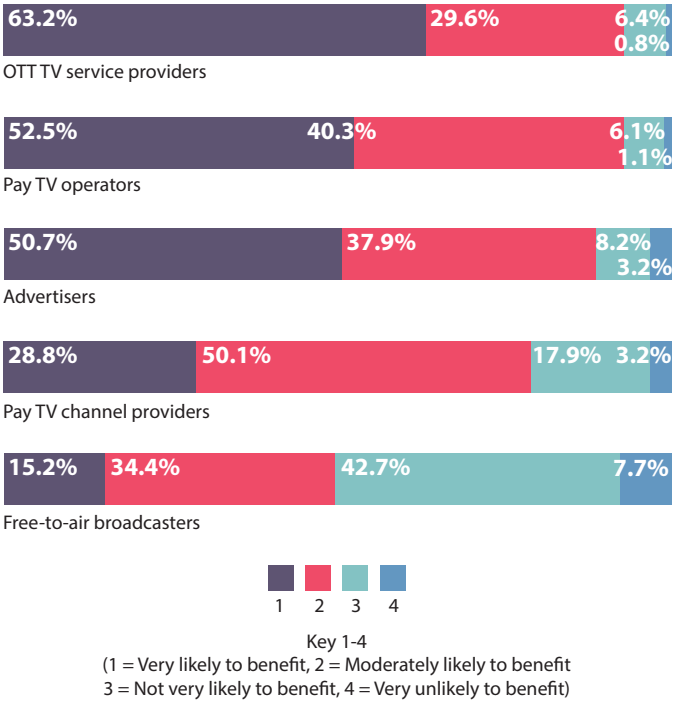
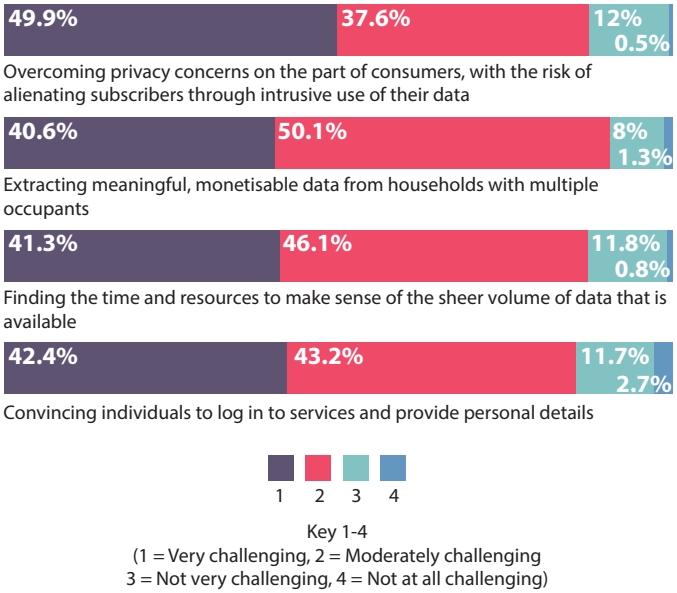


Fig. 36. What are the major challenges in exploiting big data?



moderately compelling, but 24% say it is either not very or not at all compelling.

When it comes to the type of company that can benefit most from collecting lots of data, some 63.2% think that over-the-top TV service providers such as Netflix are 'very likely to benefit' from data, while 29.6% say IP services will 'moderately' benefit (**fig. 35**).

Pay TV operators are also identified as likely beneficiaries from data gathering, with 52.5% claiming that these operators are 'very likely to benefit' and 40.3% 'moderately likely to benefit'. Advertisers meanwhile will benefit to a moderate or large extent according to a combined 88.5% of respondents.

At the other end of the spectrum, 42.7% of people agree that free-to-air broadcasters are 'not very likely to benefit' from data collection efforts, compared to just 15.2% who think they are very likely to benefit from data.

Data challenges

While data collection might be useful, it is not necessarily simple. According to our survey, a large proportion of respondents thought issues relating to resources, privacy and targeting presented major challenges (**fig. 36**).

Half (49.9%) of all people agreed that overcoming consumers' privacy concerns will be "very challenging," with the risk that intrusive use of data could alienate subscribers – a further 37.6% agree this to be a 'moderately challenging' concern.

Another issue that was identified is the need to find the time and resources to make sense of the sheer volume of data that is available. A combined 87.5% of people think this is either very challenging or moderately challenging, while a similar proportion think the same is true of convincing people even to log-in to services and provide personal details. Extracting monetisable data from homes where multiple people live is considered 'very challenging' by 40.5% of respondents and 'moderately challenging' by 50.1%.

At the same time, consumers for the most part are unlikely to firmly grasp or strongly agree with the benefits of data collection by pay TV providers (**fig. 37**). According to our study, in each case people are most likely to view the outcomes of data collection 'moderately positively'.

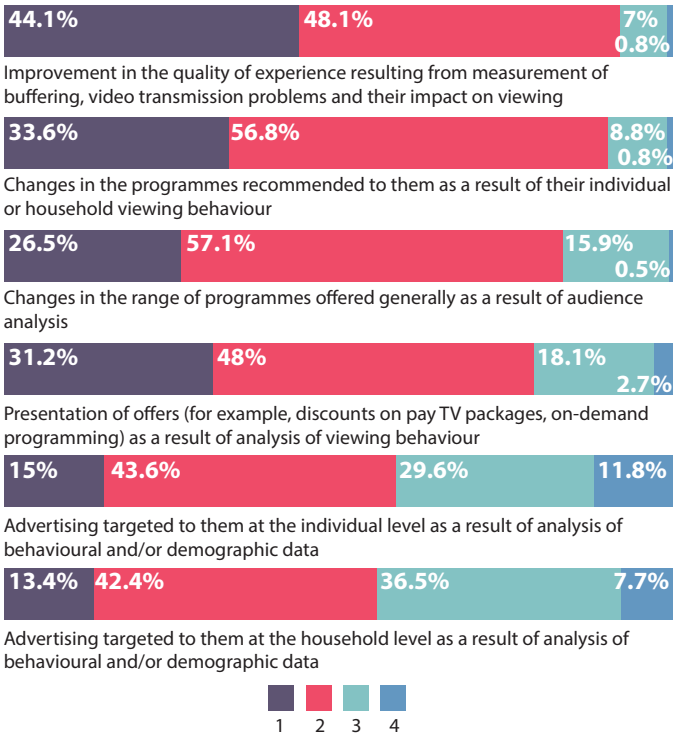
Some 57.1% of respondents think viewers will see changes in the range of programmes offered, thanks to audience analysis, moderately positively, while roughly half that figure (26.5%) think this will be received 'highly positively'.

Similarly 56.8% of people think changes in personal programme recommendations due to viewing behaviour will be moderately well liked, while a third of people think this will be highly liked.

Targeted advertising, delivered as a result of analysis of behavioural or demographic data, will be viewed moderately positive according to 42.4% of respondents, but moderately negative according to 36.5%.

Using data to improve quality by measuring buffering and transmission problems, on the other hand, is likely to be appreciated by viewers, with 48.1% of respondents thinking it will be moderately well-received and 44.1% thinking it will be viewed highly positively.

Fig. 37. How do you think consumers are likely to perceive the benefits of data collection by pay TV providers?



Key 1-4
(1 = Likely to view highly positively, 2 = Likely to view moderately positively
3 = Likely to view moderately negatively, 4 = Likely to view highly negatively)

Conclusion

While data is a powerful commodity, end-users' privacy and their peace-of-mind in terms of how information is shared and processed is of utmost importance. Data is likely to play a much bigger role in the pay TV sector in the future, but checks and limitations will apply.

What is significant is that almost no survey respondents think that big data will have no impact on either quality of service or money-making potential – the two most important concerns of almost any TV service provider.

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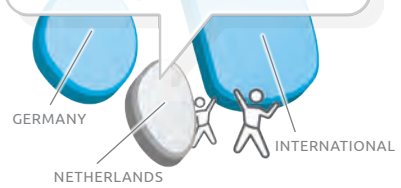

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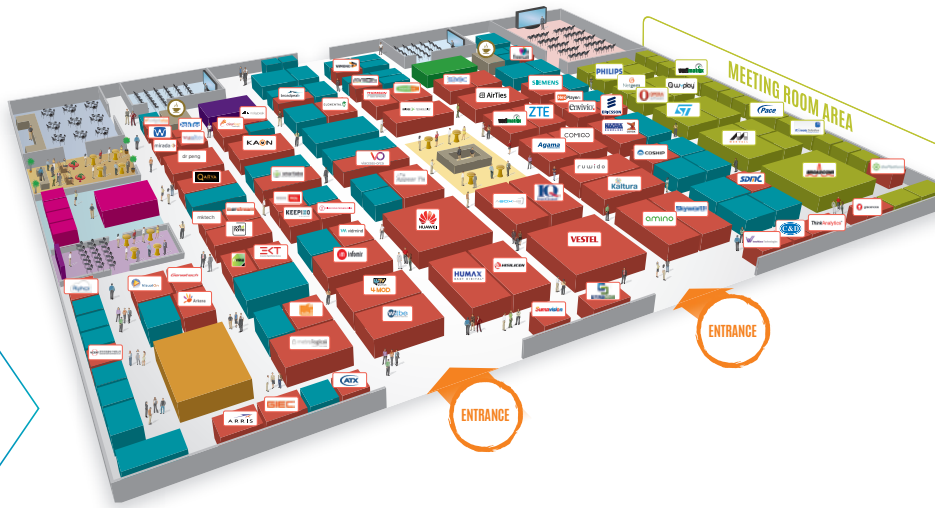

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