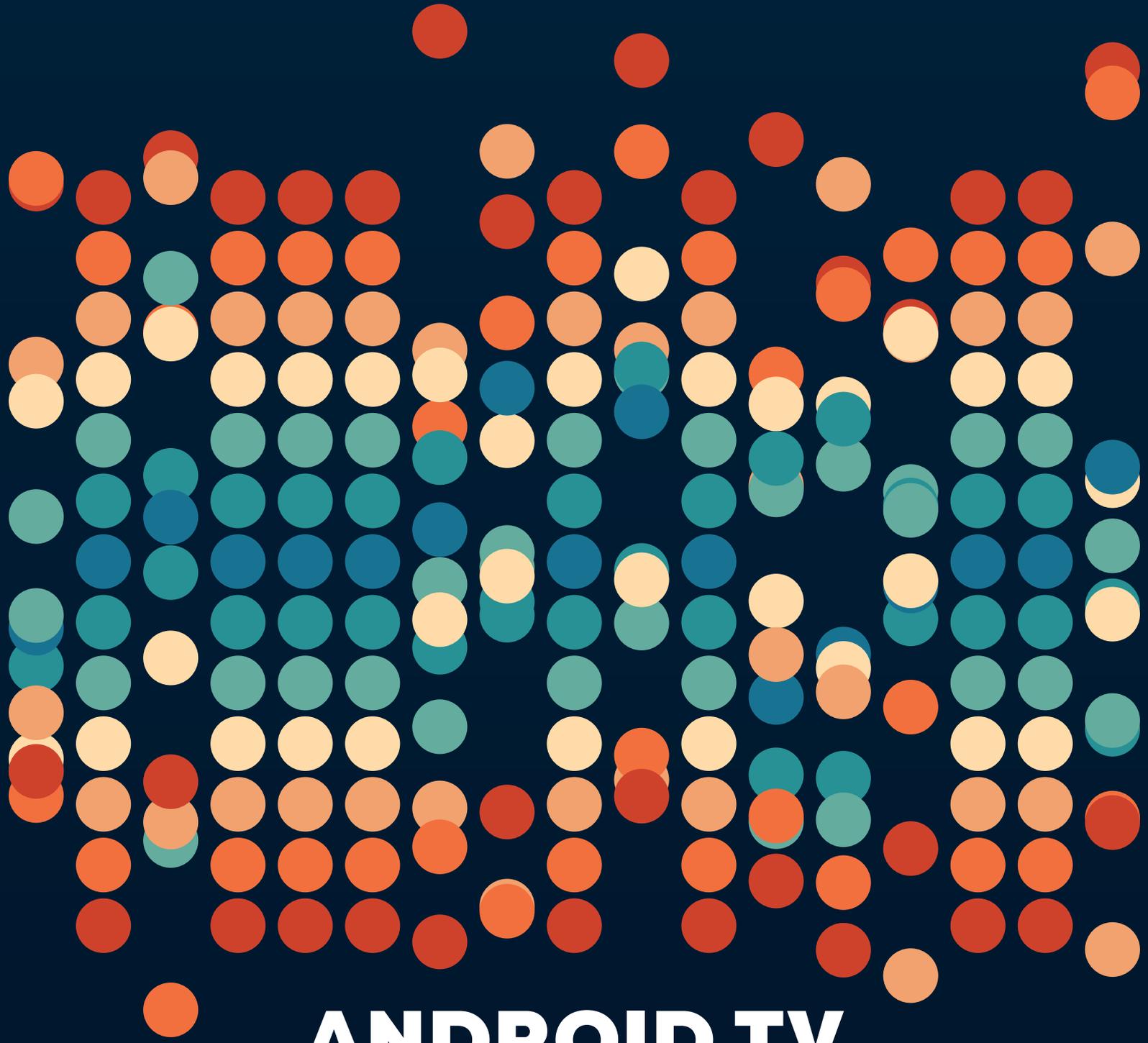


Insight on the global video delivery business

Digital TV^{Europe}

March 2021

INDUSTRY SURVEY 2021



ANDROID TV

OPTIMISATION, CUSTOMISATION, MONETISATION

Android TV:

optimisation, customisation, monetisation

Android TV has been adopted by a large number of service providers since the introduction of Android TV Operator Tier enabled them to rapidly deploy a sophisticated service that combines access to the vast array of content in the Google Play Store with a differentiated user experience.

However, Android TV on its own can only take operators so far: in order to make the most of the opportunities available to them to add value and maximise potential sources of revenue, they have to look beyond the immediate capabilities of the platform.

In this section of the survey we look at the extent to which Android TV can enable differentiated offerings, the advantages and disadvantages of unicast delivery and the potential for operators to add services such as addressable advertising and smart home integration.



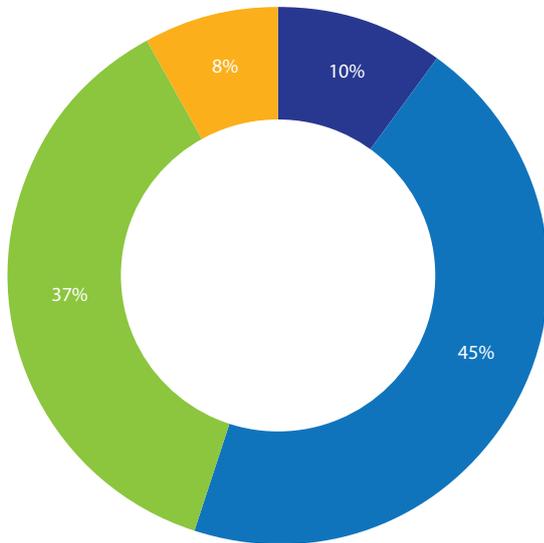
About iWedia

iWedia provides world-class software solutions for connected TV devices. We are pioneers in AndroidTV and support our customers with software architecture and design expertise, field proven products, and cost-effective engineering services out of our development centers in Serbia. We are proud to serving major Telecom operators, PayTV operators and tier 1 automotive OEMs with our media solutions.

iWedia is headquartered in Switzerland with development labs in Belgrade and Novi Sad, Serbia, and sales and support offices in Brazil, France, Germany, Singapore and South Korea.

Learn more at <https://www.iwedia.com/>

1. To what extent can Android TV enable TV operators to differentiate their services?



- Android TV now offers TV operators a clear path to absolutely differentiate their services
- Android TV now offers TV operators sufficient opportunity for differentiation to satisfy the needs of the majority
- Android TV offers TV operators limited scope for differentiation that is likely to be sufficient only for a minority
- Android TV does not currently offer TV operators a way to differentiate their services in any meaningful way

Android TV's growing popularity among service providers has been driven to a significant extent by the Android TV Operator Tier, which allows them to deploy custom launchers that enable them to foreground their own content in search results as well as to skin the service to suit their own brand requirements.

If Android TV Operator Tier has liberated service providers from the one-size-fits-all approach that prevented mass adoption of Android TV in an earlier phase of its development, can Android TV now enable operators to truly differentiate their services?

According to a majority of respondents, the answer broadly is 'yes'. While only a minority of 10% believe that android TV now offers TV operators a clear path to absolutely differentiate their services, a further 45% believe that the technology offers sufficient opportunity for differentiation to satisfy the needs of the majority.

That still leaves a significant minority of respondents who are yet to be convinced that Android TV allows operators sufficient scope to make their TV services their own. Some 37% of respondents believe that the technology offers limited scope for differentiation that is likely to be sufficient only for a minority, while 8% are hardcore Android TV sceptics, who believe that Android TV does not currently offer TV operators a meaningful way to differentiate their offerings.

Key takeaway

For a majority of respondents, Android TV offers TV operators sufficient scope for differentiation to satisfy the majority of needs.

2. What are the advantages and disadvantages of moving from multicast IPTV to unicast delivery with Android TV?

For IPTV providers with legacy infrastructure, one of the big changes associated with adopting Android TV as a solution would be the implied abandonment of multicast technology in favour of OTT unicast delivery of video streams.

Operators have in fact been moving towards a more-OTT like method of delivering video in any case as on-demand and multiscreen



Unicast delivery provides an opportunity to deliver value-added services such as targeted advertising



Unicast delivery enables a much greater degree of personalisation of the TV service



Unicast delivery means operators can use a single technology to serve all types of device



Unicast delivery enables operators to take advantage of lower-cost technology to build the platform compared with multicast delivery



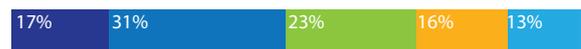
Unicast delivery is not well suited to high concurrency



Unicast delivery provides an inconsistent Quality of Service



Unicast delivery is not well suited to live programme distribution – particularly for mass market audience events such as premium sports



Unicast delivery is less efficient in the use of bandwidth than multicast delivery

- Very significant advantage
- Moderately significant advantage
- Not very significant as an advantage
- Moderately significant disadvantage
- Very significant disadvantage

viewing become more mainstream, reducing the advantage of multicast. Operators also have the choice of adopting hybrid digital-terrestrial-IP delivery, using an Android TV box with an in-built DTT tuner to combine unicast delivery of on-demand and minority-interest channels with over-the-air delivery of national broadcast stations. Where digital-terrestrial coverage is available, this solution removes the need for expensive multicast IPTV infrastructure.

For survey respondents, unicast delivery with Android TV carries two hugely compelling advantages over multicast IPTV, and two that are marginally less compelling, but still persuasive.

The big advantages are that unicast delivery provides an opportunity to deliver value-added services such as targeted advertising more easily, and the related one that unicast enables a much greater degree of personalisation of the service generally.

Targeted advertising is a technology that has still to see its full potential realised, and respondents clearly believe that this could be a significant revenue stream for IPTV providers. More generally, personalisation of a service could help build 'stickiness', giving subscribers a reason to stay with the service.

Respondents also find the view that unicast delivery means operators can use a single technology to serve all types of device persuasive. The argument that unicast enables operators to take advantage of lower-cost technology to build their platform is rated somewhat lower in importance, but is still seen as a significant advantage.

The potential disadvantages of unicast are accorded less significance by survey respondents in general, but the standout, in terms of its relative importance, is that unicast is not well-suited to high concurrency. The related concern that unicast is not suited to live programme distribution is also rated high. Delivery of live sports via unicast streams, for example, can be seen as less efficient and more difficult to plan for and manage.

Key takeaway

Unicast delivery can benefit operators by making it easier for them to deliver personalised services, including addressable advertising.

3. Where an operator deploys Android TV, what kind of impact will the choice of player have?

What are the key factors that enable the TV operator to differentiate his service and provide a high-quality viewing experience over unicast, as well as personalisation, with and Android TV-based service?

Operators that deploy Android TV Operator Tier with the help of a technology partner are typically looking to differentiate their service based on its look and feel, but also on quality. Adopting Android TV – and foregoing multicast delivery for adaptive bit-rate-based unicast delivery – leaves a number of issues unsolved, such as how to reduce latency. Various elements of personalisation such as integrating addressable advertising are also outside the responsibility of the operating system.



The operator's ability to deploy a hybrid model combining OTT apps with access to broadcast TV



The operator's ability to provide traditional pay TV features such as the EPG, DVR and catch-up TV



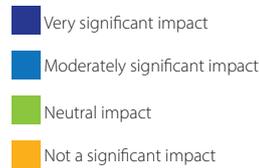
The operator's ability to customise the Android TV deployment to meet its own requirements



The operator's ability to deliver added-value services such as addressable or targeted advertising on a set-top box



The operator's ability to combine seamless access to the Google Play Store with access to traditional pay TV services



We asked survey respondents to assess the importance of the choice of player in implementing an Android TV-based service. The most important impact, in the view of the survey sample, was on the operator's ability to deploy a hybrid model combining OTT apps with access to broadcast TV.

This was closely followed by the impact of the choice of player on the operator's ability to provide traditional pay TV features such as the EPG, DVR and catch-up TV – all important parts of the TV experience that are not touched on by Android TV.

The other elements considered were all rated as important, although the degree of importance varied. These were the operator's ability to customise the Android TV deployment to meet its own requirements, its ability to combine seamless access to the Google Play store with access to traditional TV services, and its ability to deliver added-value services such as addressable or targeted advertising on a set-top box.

Key takeaway

The operator's choice of player is important across a wide range of features. In the view of respondents, the most significant impact will be on its ability to deliver a hybrid service combining OTT apps and broadcast TV.

55% believe that Android TV offers operators sufficient opportunity to differentiate their services

4. How important is it for TV operators using Android TV to be able to make money from the platform through addressable advertising?

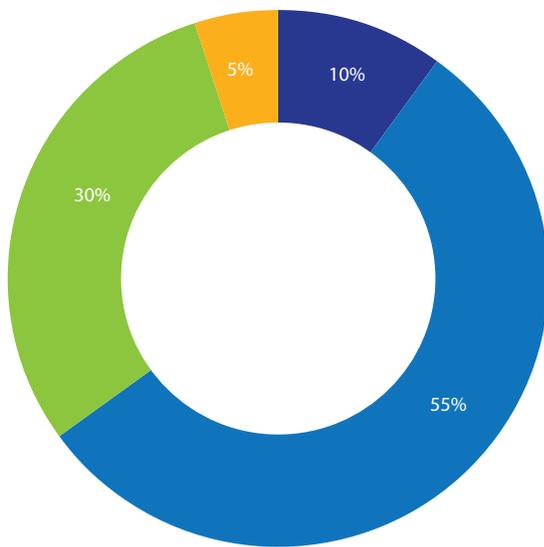
One of the principal ways in which TV operators can monetise their Android TV-enabled service is by introducing addressable advertising.

Introducing support for addressable advertising, which is made easier by unicast delivery, would enable operators to create a new revenue stream without necessarily building their own content line-up. They could potentially strike deals with existing advertising-supported content partners to add value to the latter's inventory in exchange for a share of revenue, for example.

When we asked survey respondents to give their views of the importance of being able to use Android TV to deliver targeted advertising, it was immediately clear that the majority viewed this as a significant opportunity and priority area for operators.

Some 65% of respondents agreed that addressable advertising is a very important, or the single most important monetisation opportunity for operators with Android TV. Consequently, it is important for the platform to support this.

Of this group, 10% believe addressable advertising is the single most important opportunity for operators to make money from an



- Addressable advertising is the single most important monetisation opportunity for operators with Android TV and it is vital for the platform to support this
- Addressable advertising is a very important monetisation opportunity for operators among others and it is important for the platform to support this
- Addressable advertising is of relatively minor importance among monetisation opportunities for operators with Android TV and support for it is not a first rank priority
- Addressable advertising is of little or no importance as a monetisation opportunity for operators with Android TV and its support for it is not important either

Android TV-enabled service, and the remainder believe it is a very important opportunity among some others.

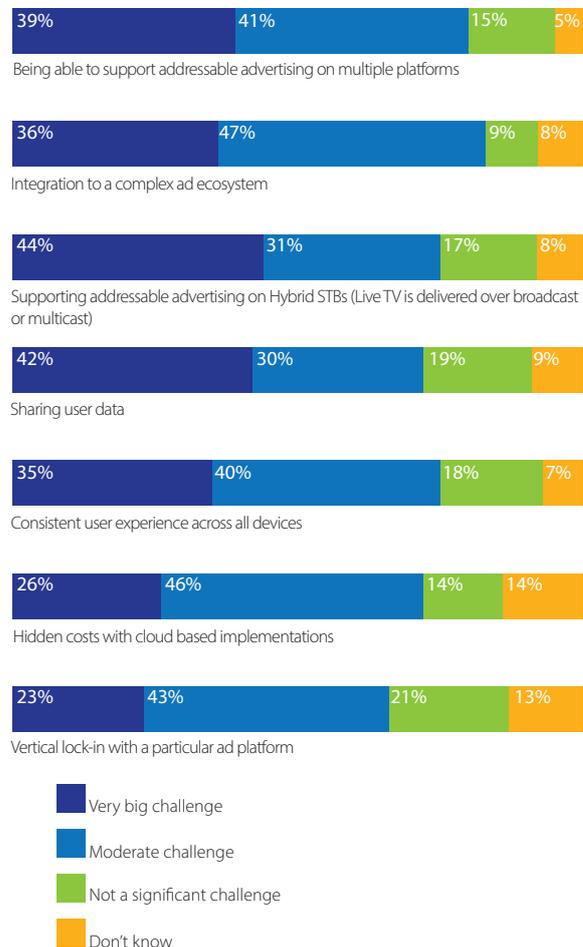
Some 35% of respondents were more sceptical, with the majority of these taking the view that support for addressable advertising is not a first-rank priority and a small core of ultra-sceptics taking the view that addressable advertising is of little or no importance.

Key takeaway

Addressable advertising is a very important way for operators to make money and it is important for Android TV-enabled services to support this.

5. What are the main challenges associated with addressable advertising?

Monetisation of an Android TV-based service is a key objective for TV operators. As multi-play operators move away from attempting to make money from acquiring and aggregating their own TV content line-up, or look to add an attractive app-based TV offering to a broadband-only service, they are increasingly tempted to offer



added value services that can help them boost their margins in an increasingly price-competitive world.

As shown earlier, there is a widespread recognition among industry insiders that addressable advertising potentially has a very important role to play in helping operators monetise an Android TV-enabled service, and that it is enabled by unicast delivery.

That is not to say that implementing addressable advertising on an IPTV system – with or without unicast delivery and Android TV – is free of challenges.

Asked to identify the principal obstacles that stand in the way of fully realising addressable advertising, respondents rated a group of seven core challenges fairly equally, according each of them a significant level of importance.

The top-rated challenge – though not by a huge margin – was being able to support addressable advertising on multiple platforms, closely followed by the need to integrate to a complex ad ecosystem. The technical complexity of implementing addressable advertising that can deliver results at the scale required therefore takes top billing. Supporting addressable advertising on hybrid set-tops where live TV is delivered over broadcast or multicast is also seen as an important hurdle to overcome.

Other elements that are considered challenging include the compliance challenge of sharing user data and the technical one of providing a consistent user experience across all devices – a variation on the theme of how challenging it is to deliver on multiple platforms.

Of slightly less concern to respondents – though still significant – are the challenge of hidden costs with cloud-based implementations and vertical lock-in with a particular ad platform.

Key takeaway

There are a number of challenges in delivering addressable advertising, with delivery over multiple platforms seen as the most significant hurdle.

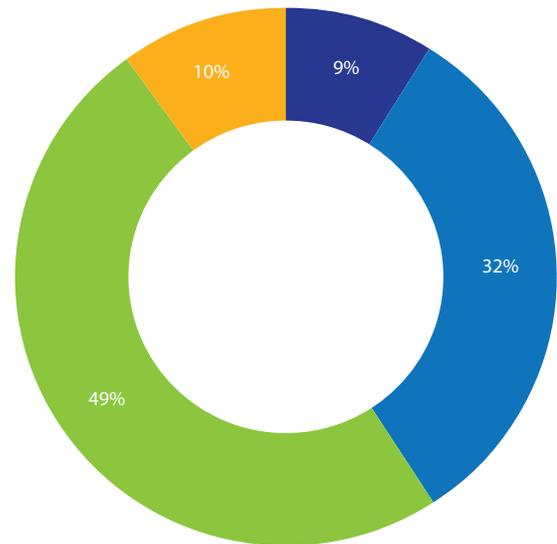
6. How important is it for TV operators with Android TV to be able to make money from the platform through smart home services?

While addressable advertising is one potential way for an operator to make money from an Android TV-based offering, the delivery of smart home services may offer an alternative or complementary route to monetisation.

Android TV's integration with Google Assistant offers an intriguing set of possibilities, enabling users to control their home using the TV screen as the central device. But how can the TV operator benefit?

Survey respondents are divided in their view of how important the smart home could be as a monetisation route for operators.

A majority have yet to be convinced that operators will be able to build a successful commercial model around this. Some 49%



- Smart Home service is the single most important monetisation opportunity for operators with Android TV and it is vital for the platform to support this
- Smart Home is a very important monetisation opportunity for operators among others and it is important for the platform to support this
- Smart Home is of relatively minor importance among monetisation opportunities for operators with Android TV and support for it is not a first rank priority
- Smart Home is of little or no importance as a monetisation opportunity for operators with Android TV and support for it is not important either

of respondents – close to half the overall sample – believe that the smart home is of relatively minor importance among monetisation opportunities and that it is not likely to be a major priority for service providers.

Some 10% go further and take the position that the smart home is of little or no importance and support for it is not important either.

On the other hand, a large group – 32%, or almost a third of the total – believe that the smart home is a very important monetisation opportunities and that it is important for the platform to support this. A further group of 9% are smart home evangelicals, believing that the smart home is the single most important monetisation opportunity for operators with Android TV and that it is vital for the platform to support this.

The responses would seem to indicate mixed feelings on the part of industry insiders, first about the viability and appeal of smart home services for operators, and also about the importance of securing support from Android TV to support such services. While for some, the smart home could represent a quick win and a further way to differentiate a service offering, others take a very different view.

Key takeaway

Industry opinion is sharply divided about the monetisation value of smart home services. A majority have yet to be convinced.

7. Does adopting Android TV give operators an opportunity to better design a business model in which smart home can become a significant added value service?



Android TV is a flexible platform that provides more opportunities for operators to tailor a smart home service business model



Android TV gives TV operators a unique and potentially highly lucrative opportunity to monetise smart home services through integration with Assistant



Android TV enables easier portability of smart home application software from other devices (i.e. mobile)



Android TV device is by default a node in the smart home network, which is an important first step



Android TV gives TV operators a unique and potentially highly lucrative opportunity to monetise smart home services through integration with Google Nest



Many respondents express scepticism about the prospects for operators to make money from smart home services. However, when asked whether introducing Android TV gives operators a better opportunity to build a business model around the smart home, they are markedly more positive.

Over two thirds of respondents were broadly in agreement that Android TV provides a flexible platform that delivers more opportunities for operators to tailor a smart home business model, with over 20% giving strong backing to this view.

Respondents also agreed with the view that Android TV gives operators a unique and potentially highly lucrative opportunity to monetise smart home services through integration with Google Assistant.

They also endorsed the view that Android TV enables easier portability of smart home application software from other devices such as mobile phones. In other words massive penetration of Android could, it is believed, give operators a significant boost in this market. Respondents also agreed with the related point that Android TV is by default a node in the smart home network, which is an important first step.

Respondents were broadly in agreement that Android TV also gives operators an opportunity to monetise smart home services through integration with Google Nest, the company's family of smart home hub devices, though they were, on balance, slightly less enthusiastic about this.

Key takeaway

If operators do choose to deploy smart home services, the flexibility of Android TV gives them a good place to start.

In summary

Android TV is growing massively in popularity because it provides a ready-to-use platform that can be customised to enable operators to deploy a high-value content-rich platform that gives them some scope for differentiation and enables them to get up and running with it quickly.

Beyond that, however, Android TV leaves a number of questions unanswered, such as how operators can use the platform to deliver added value services that enable them to make money.

Android TV is a unicast platform, unlike traditional IPTV, which presents some challenges around latency and the transmission of live services but does help enable the delivery of monetisable personalised services such as addressable advertising as well as, potentially, smart home services.

The way operators implement Android TV, and in particular their choice of player, can play an important role in overcoming the challenges associated with unicast delivery and in facilitating those personalised services that add value and enable operators to make money.

The opportunity to make money from addressable advertising in particular has strong appeal, and operators can use Android TV as the basis for this, with support from technology partners.

Smart home services represent a potential new business opportunity that TV operators have yet to grasp, and there remains a residual degree of scepticism across the industry about how lucrative this could prove to be. However, Android TV could represent a relatively pain-free entry point for service providers to market smart home services, thanks to the flexibility of the platform and integration with Google Assistant and Google Nest.

Sponsor's comment

Hans-Jürgen Desor, CEO, iWedia

The success of Android TV is a tribute to product unification to reach scale by offering cost attractive device, ultimately bringing more connected devices within Google's footprint. However, differentiation and customisation represent the key elements for operators to retain existing and attract new customers, as well as managing total cost of ownership of their products. iWedia guides operators through this dynamic journey enriching the customer's satisfaction by providing the extra bits and pieces of core technology that complements complex broadcast and streaming eco systems.