DIGITAL TV EUROPE

August/September 2018

Accenture: a four-point plan for media

Gavin Mann on how established players will survive and prosper

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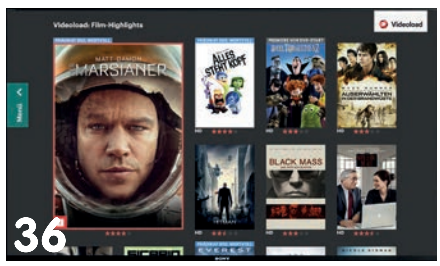

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Published By:
KNect365 TMT
Maple House
149 Tottenham Court Road
London W1T 7AD
Tel: +44 (0) 20 7017 5000
Fax: +44 (0) 20 7017 4953
Website: www.digitaltveurope.net

Editor Stuart Thomson
Tel: +44 (0) 20 7017 5314
Email: stuart.thomson@knect365.com

Contributing Editor Andy McDonald
Tel: +44 (0) 20 7017 5293
Email: andrew.mcdonald@knect365.com

Contributors
Kate Bulkley, Kaltrina Bylykbashi, Andy Fry, Adrian Pennington, Adam Thomas, Anna Tobin

Correspondents
France: Julien Alliot; Germany: Dieter Brockmeyer; Italy: Branislav Pekic

Commercial Director Patricia Arescy
Tel: +44 (0) 20 7017 5320
Email: patricia.arescy@knect365.com

Art Director Matthew Humberstone

Marketing Executive Abigail Dede

Printing Wyndeham Grange, West Sussex

The data issue

Big data is the thread that runs through this issue of *Digital TV Europe*. The control of data, its use to deliver new consumer experiences, and its role as fuel for the global ambitions of big tech organisations, are key to the future of the media business.

In this issue of the magazine we look at four topics in which data plays a starring role.

The first is the growing importance of artificial intelligence in media. The application of AI is seen to have the potential to revolutionise the video distribution business, but what does the application of AI mean in practice? We look at the potential of AI to make TV more highly personalised than ever before through applications such as facial recognition, voice-control and the analysis of emotions.

Control of data is at the core of Google's business of delivering services to consumers globally, including video services through the Google Play store. Google has long coveted a stronger position in the TV space, not only as a service enabler, but also as a technology provider through its Android TV platform, and has made a number of attempts to persuade TV operators of the advantages of its technology. Those operators have in the past been reluctant to team up with Google because they fear, among other things, loss of control of their consumer data and dilution of their brand. Over the last year or so, however, the introduction of the Android TV Operator Tier has transformed Google's fortunes in the TV business. In this issue, we look at the advantages offered by this platform for service providers.

Data is of course most crucial to Google's core advertising business. Commercial broadcasters have seen their advertising revenues come under threat from a variety of directions, including the growing appeal of online content. In order to secure their future, they urgently need to make more money from their online activity as well as from legacy broadcast operations. This means accurate audience data. In this issue, we look at initiatives to provide better audience measurement across digital platforms and some of the challenges faced by broadcasters in this space.

Data is also at the heart of delivering a personalised user experience to TV consumers that matches what they have come to expect from online platforms such as Netflix. In this issue of *Digital TV Europe*, we also look at the ways in which TV operators are trying to deliver a user experience that serves as a differentiator and provides something that can compete with OTT providers.

Finally in this issue, we take our customary annual look at some of the technologies that will be on show at the forthcoming IBC in Amsterdam, as well as providing our usual round-up of industry news and technology developments. ●

Stuart Thomson, Editor
stuart.thomson@knect365.com

Q&A: Steve Oetegenn, Verimatrix

Steve Oetegenn, President, talks about the benefits of cloud technology and a connected content distribution platform for content providers and operators.

To what extent is the potential of the cloud to make content creation and distribution more efficient still untapped?

The cloud helps deliver a radically new economic model for the infrastructure itself, reducing upfront hardware and software investments. On the hardware side, operators can convert up front capital costs into more efficient operating costs. The software-as-a-service (SaaS) model exploits similar factors to cut costs by converting licenses to ongoing service agreements in which operators only pay for what they use.

But the largest untapped efficiencies come from the fact that the infrastructure is virtualised so that functionality is dissociated from location, which opens up the ecosystem to new operational benefits not previously possible. Third-party ecosystems can be connected or accessed very easily just by relocating content using pointers.

To what extent are the interests of content providers and service operators aligned in relation to the use of cloud technology to make their businesses more efficient?

They both share a need to streamline and secure distribution of their video assets. While content providers wish to broaden and accelerate the monetisation of assets, they need new tools to ensure content security, enforce distribution windows and downstream playback policies, and obtain usage reporting. Video service operators, on the other hand, desire easier and faster access to compelling content, combined with a reduction in cost and distribution complexity from the point of origination to the viewers.

By centralising the content and security workflows via a common cloud platform with a single point of integration, both content providers and video service operators gain significant distribution efficiencies through reduced and streamlined workflow processes.

What might a connected content distribution platform look like in practice and what additional benefits would it bring to content providers and operators?

Our new platform, called Viewthority, provides unparalleled connectivity between content providers and video service operators. This innovative approach, delivered as a platform-as-a-service (PaaS), streamlines end-to-end workflows and automates video analytics and reporting. The platform is designed to reduce the cost and complexity of the current content delivery processes, resulting in improved competitiveness and enabling new business models.

Viewthority is an end-to-end platform built upon proven Verimatrix technologies that:

- Avoids duplicate workflows by using a common cloud platform based on the AWS infrastructure.

- Centralises management and control of content licensing terms, distribution windows, playback policies and business rules via a defined rights management interface, which has been integrated with the MediaMorph Content Value Management Platform.

- Offers improved distribution efficiency by encrypting content just once with decryption keys and playback policies distributed separately and securely via Verimatrix RightsConnex for final end-device playout.

- Provides higher visibility into the process on a level not available before through automated viewership reporting and QoE analytics based on the functionality available from Verspective Analytics.

- Eliminates revenue leaks from premium content and provides anti-piracy protection from a trusted Verimatrix security envelope around the entire platform.

By efficiently and securely connecting a centralised content library to a network of global video service operators, Viewthority ultimately creates a collaborative and transparent environment that opens up new markets, new viewers, and new revenue streams.

How central is data and analytics to the vision of a connected platform and what benefits can this deliver to participants?

The ability to have unprecedented access to real-time data and analytics is a major advantage of integrating content distribution functionality into a single platform. Granular content usage, royalty reports and consumption analytics data, delivered on a timely basis, not only increases contract compliance efficiency, but also provides viewer insights, which enable content and services to become more compelling and engaging over time.

As the content industry expands and fragments, it becomes harder to conduct trade in the traditional way involving direct negotiation over rights, bitrates and formats. This new approach, armed with timely and streamlined reporting, provides an automated platform where content discovery and negotiation, as well as secure transmission, all take place digitally.

How can a connected platform deliver more efficient ways of managing security and what commercial advantages could this provide to content owners and distributors alike?

While the cloud brings cost savings and new opportunities it also raises challenges, not least because of the radical changes in the workflows and in the apparent exposure to risk. The security threat surface expands given the transparency and ubiquitous connectivity of the cloud, while for the same reasons concerns over privacy multiply.

Advanced security is imperative for this type of distribution model. Content providers and operators must inherently trust that the platform is secure. Given the deep expertise Verimatrix brings as a revenue security provider, content providers and video service operators can be confident that Viewthority is secured with the most advanced protection techniques.

Visit Verimatrix at IBC, stand is 5.A59 or visit www.verimatrix.com/viewthority

News digest

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Corbyn calls for 'British Digital Corporation' to take on tech giants

By Stuart Thomson >

UK Labour Party leader Jeremy Corbyn has used his Alternative McTaggart Lecture at the Edinburgh International Television Festival to endorse the idea of creating a publicly owned British Digital Corporation (BDC) – a sister organisation to the BBC that could take on Netflix and Amazon by delivering entertainment and information to the public.

"A BDC could use all of our best minds, the latest technology and our existing public assets not only to deliver information and entertainment to rival Netflix and Amazon but also to harness data for the public good," said Corbyn.

"A BDC could develop new technology for online decision making and audience-led commissioning of programmes and even a public social media platform with real privacy and public control over the data that is making Facebook and others so rich."

Corbyn said the organisation, the idea of which was initially floated by James Harding, the former BBC director of home news at the Hugh Cudlipp lecture earlier this year, could become the access point for public knowledge, information and content currently held in the BBC archives, the British Library and the British Museum.

"Imagine an expanded iPlayer giving universal access to licence fee payers for a product that could rival Netflix and Amazon. It would probably sell pretty well overseas as well," he said.

In his lecture, Corbyn also called for a freeing up of the BBC from government control by having some executive BBC Board members chosen by staff and non-executive directors by licence fee payers.

"To help decentralise the BBC, national and regional

boards could also be expanded, with elections by BBC staff and local licence fee payers. All boards should be representative of the country, with a minimum representation for women and minority groups," Corbyn said.

The Labour leader said that empowering BBC staff would make the corporation's top management more accountable.

Corbyn also called for devolution of programme making to regional and national level within the UK with the help of new regional boards.

Speaking about media more broadly and about the need to support journalism in the public interest in particular, he also called for a one-off tax to be levied on global technology giants to fund public service media and journalism if a future government could not negotiate a longer-term funding arrangement for media with the web companies.

"One solution to funding public interest media could be by tapping up the digital monopolies that profit from every search, share and like we make," he said.

"A strong, self-confident government could negotiate with these tech giants to create a fund, run entirely independently, to support public interest media. Google and news publishers in France and Belgium were able to agree a settlement. If we can't do something similar here, but on a more ambitious scale, we'll need to look at the option of a windfall tax on the digital monopolies to create a public interest media fund."

Czech Republic

SAT> Viasat World on Skylink

Pay TV operator M7 Group is to add channel provider Viasat World's recently launched Epic Drama service to its Skylink DTH platform from September 1. Joining the Czech and Slovak pay TV service will significantly extend Epic Drama's reach in the two markets. Skylink is the biggest DTH platform in the Czech Republic and Slovakia, and has carried Viasat World's flagship factual channels since 2007, the first pay TV documentary channels on the platform. Epic Drama HD will be available in the Smart Basic pay TV tier on Skylink, alongside Viasat Explore, Viasat History and Viasat Nature – the carriage of which the deal also renews. An Epic Drama SVOD service will also launch via Skylink at a date to be confirmed.

Finland

DTT> DNA & Yle DVB-T2 row

Finnish service provider, broadcaster and digital-terrestrial transmission services provider DNA and the country's public broadcaster Yle have become embroiled in a legal dispute that Yle says could delay the transition of the Finnish digital-terrestrial network to DVB-T2, enabling migration to an HD service. DNA has filed a complaint with the country's commercial court over the terms of Yle's call for tenders for DVB-T2 distribution of its channels, which the service provider says runs contrary to the terms of the country's procurement rules. Yle had in February published and then suspended a tender for transition to DVB-T2, before publishing a new tender document in August. However, DNA claims that the tender favours its competitor Digita.

Germany

OTT> EntertainTV goes OTT

Deutsche Telekom is due to launch its EntertainTV service for customers that use other internet providers for the first time this autumn. The operator is launching EntertainTV as an OTT package for iOS and Android, with details to be released in October. The telco said that EntertainTV OTT users will be able to enjoy the same content as its own customers. However, timeshift, restart and replay functions will be reserved for customers of the 'classic EntertainTV package'. The news was announced at IFA, where Telekom also said it will integrate Amazon Prime content into EntertainTV, making it "exceptionally easy" for users to search for Amazon series like The Grand Tour.

Ireland

PROG> Virgin Media Sport

Virgin Media in Ireland is due to launch its new Virgin Media Sport channel on September 18. The channel, dubbed by the pay TV provider as 'Ireland's new home of European football' will broadcast Irish-produced coverage of the UEFA Champions League and UEFA Europa League. Virgin Media Sport will be available to all Virgin Media TV customers at no extra cost and is due to air more than 400 live European matches this season.

Poland

PROG> UPC adds Polsat

Liberty Global-owned Polish cable operator UPC Poland has added premium sports channels from Polish national commercial broadcaster Polsat to its programming line-up, giving subscribers access to UEFA Champions League and Europa League football ahead of the kick-off the 2018-19 Champions League season. The cable operator has added Polsat Sport Premium 1 and 2 and four Polsat Sport Premium pay-per-view services to its channels line-up, making all Champions League matches available live to its subscribers, starting with the play-offs. The Polsat Sports channels will be available on the Horizon Go mobile advanced TV service as well as the main television screen. Robert Redeleanu, CEO of UPC Poland, said that the deal would enable UPC's customers to watch the Champions League and Europa League in high quality for the next three years.

Sky ups startup focus in Berlin and Tel Aviv

By Andy McDonald >

Sky plans to open a new office in Berlin and invest US$4 million in an Israeli VC fund in an effort to scale up its startup investments across Central and Northern Europe and Israel.

The Berlin office will give Sky a local presence among the city's growing startup scene and allow it to build relationships with investors and entrepreneurs. Sky's Berlin team will have a remit to scout for companies across Germany and the Nordics, extending the company's existing London and San Francisco-based startup efforts.

In Israel, Sky will invest in newly launched Tel Aviv-based venture capital fund Remagine Ventures, which will focus specifically on technology, entertainment, data and commerce startups. The fund is managed by former ProSiebenSat1.Media investor

Kevin Baxpehler and former Partner at Google Ventures Europe, Eze Vidra. Sky said the partnership will give it more access to the county's technology market, which includes a strong pool of talent in computer vision and machine learning.

"Six years on from our first investment, we're expanding our startup activity across Europe and Israel," said Emma Lloyd, group director of business development and partnerships at Sky.

"Spending time in both Berlin and Tel Aviv has left us hugely impressed with the energy, dynamism and talent of both tech scenes. This is an exciting new chapter for us and we can't wait to get started and uncover new, innovative startups across the regions and beyond."

Sky Deutschland CEO Carsten Schmidt added: "I look forward to us establishing more partnerships with early stage companies by setting up our Berlin based office this year."

Sky established its London startup-focused team in 2012 and opened its San Francisco office in 2014. Since then it has invested in more than 20 companies across the UK, US and France.

Sky has invested in companies including: Roku, which powers its Now TV streaming device; virtual reality firm Jaunt; over-the-top streaming platform 1Mainstream; and Drone Racing League. Sky says it invests to accelerate innovation, identify growth and achieve cost efficiencies through the adoption of new operating models.

Events

IBC 2018
Date: 13 - 18 September
Venue: Rai, Amsterdam, The Netherlands
W: show.ibc.org

Content Innovation Awards
Date: 14 October
Venue: Carlton Hotel Grand Salon, Cannes, France
W: contentinnovationawards.com

MIPCOM
Date: 17 - 18 October
Venue: Palais des Festivals, Cannes, France
W: mipcom.com

Sportel Monaco
Date: 22 - 24 October
Venue: Grimaldi Forum, Monaco
W: sportelmonaco.com

Broadband World Forum
Date: 23 - 25 October
Venue: Berlin Messe, Berlin, Germany
W: tmt.knect365.com/bbwf

TV Connect MENA
Date: 29-30 October
Venue: Dubai Marina, Dubai, UAE
W: tmt.knect365.com/tv-connect-mena/

Africa Video Forum
Date: 13 - 15 November
Venue: CTICC, Cape Town, South Africa
W:tmt.knect365.com/africacom/africa-video-forum

OTTtv World Summit
Date: 28-29 November
Venue: Inmarsat, London
W:tmt.knect365.com/ ottv-world-summit/

Mobile World Congress
Date: 25-28 February
Venue: Barcelona, Spain
W: www.mobileworldcongress.com

Global Wrap

Facebook has secured exclusive free-to-air rights for certain UEFA Champions League live matches across Spanish-speaking territories in Latin America from 2018-2021. The football deal grants Facebook the rights to broadcast 32 live matches each season, for three seasons, including the final and UEFA Super Cup. India's **Viacom18** is due to launch its video-on-demand platform **VOOT** in the UK in November and is planning 18 original series for the service. Viacom18 Motion Pictures will produce multi-lingual, multi-genre, web series for VOOT under the Tipping Point Films banner. Emerging markets SVOD service **Iflix** is set to launch a 24-hour news service in all 28 of its markets from early September. Iflix News will aggregate live news streams, clips, and linear feeds from international, regional and local news authorities and regional partners for the offering include CNN, Al Jazeera, DW, CGTN and CCTV 4. According to **Kagan, S&P Global Market Intelligence**, Nigeria accounted for 29% of Africa's multichannel subscribers and 22.4% of its TV households at the end of 2017. The country profile report estimates that Nigeria's multichannel market had more than 27 million TV households and more than 6.9 million pay TV subscribers at the end of last year, up 9.1% compared to 2016. **Warner Bros.** and **DC Entertainment** will launch their digital subscription service, **DC Universe**, in the US on September 15. The service will offer new original live-action and animated series, older TV series and films and a curated selection of digital comic books.

Portugal

PROG> Eleven's Bundesliga

Eleven Sports has extended its Bundesliga rights deal in Portugal and will now broadcast live top-flight German football for three years from the 2018/19 season. The broadcaster previously announced a two-year Portuguese agreement with Bundesliga in June, which was due to start from the 2019/20 season. The new deal brings this start-date forward and adds an extra year to the agreement.

Russia

CAB> Akado adds channels

Russian pay TV service provider Akado has added a raft of new channels to the line-up of its analogue TV service, Antenna Akado, in the south-eastern part of Moscow. Lyubov Klyonova, director of sales, said that it was important to broaden the offering of analogue TV, which remains the main source of information for some categories of citizens. She said that the Antenna service was used by the majority of residents in the south-eastern district. The new channels on the analogue tier include Discovery Channel, Dom Kino, Russkiy Roman, Trick, TNT-4, TNT-Music, Mul't, O!, Doktor, and Sony Channel.

Spain

CAB> Vodafone TV Total

Cable and mobile telecoms operator Vodafone España has stepped up its fight against incumbent rival Telefónica by offering its TV Total package free of charge to converged customers for one year. TV Total is Vodafone's most complete TV offering, with 120 channels and multiple on-demand services including HBO España and AXN Now exclusively. The offer will be open to subscribers to the operator's Vodafone One converged service who sign up between August 20 until September 30. Subscribers also have the option of adding Vodafone's Cine pack for one year at half price and its truncated football package for €5 a month. Vodafone is also gifting 25GB of additional data to contract mobile and convergent customers for September. The TV Total offering means that Vodafone customers can have the package along with Vodafone One with 4GB of mobile data and 100Mbps fibre broadband for €52 a month.

Ofcom: growing risks of structural decline in TV

By Andy McDonald >

TV viewing in the UK has been falling since 2010 but saw a steeper decline in 2017, with the risks of structural decline in the industry appearing to be growing.

This was one of the findings of Ofcom's Communications Market Report, a major study on how communications services are changing in the UK, which shines a light on how the take-up of faster broadband and connected TVs are changing how people watch programmes.

The report said that nine in 10 people still watched broadcast TV every week in 2017, for an average of three hours 23 minutes a day. However, this figure was down nine minutes a day compared to the previous year, with the steepest fall among children and young adults. Children's viewing fell 15% in 2017 to an average of one hour 24 minutes, while 16-24s' viewing fell by 12% to an average of one hour 40 minutes. This meant that over 54s, who make up just 28% of the UK population, accounted for 51% of broadcast TV viewing in 2017.

At the same time, Ofcom said that people now watch an average of 88 minutes of non-broadcast content on TV each day. Its recent Media Nations report said that 16-34 year-olds watched an average of two hours 39 minutes of non-broadcast content a day – including 59 minutes of YouTube – on PCs, phones and tablets.

"These changes in viewing behaviour present major challenges to broadcasters. Television advertising revenues fell by 7% in real terms in 2017, and while this may be largely due to macro-economic factors,

the risks of structural decline appear to be growing as viewing figures fall and online video advertising grows," said Ofcom.

"There was also a decline in pay TV revenues in 2017, after many years of growth, indicating a challenging market for pay TV operators such as Sky and Virgin Media, which face competition from subscription on-demand services like Netflix and Amazon Prime."

Ofcom said total broadcaster revenue was down by 4% in 2017 to £13.6 billion (€15 billion), driven by a decline in ad revenue and the proportion of the licence fee attributed to TV.

Q&A: Gernot Jaeger, Zattoo

Gernot Jaeger, Chief Officer, B2B TV solutions at Zattoo, talks about Zattoo's first US customer, Hotwire Communications.

Zattoo has now entered the US market with the Florida-based operator Hotwire Communications. What were Hotwire's specific requirements?

We have been providing fully hosted & managed end-to-end TV solutions to telcos, cable operators and mobile network operators in Europe with great success. Our platform covers the entire TV service from ingest all the way to the applications including content protection for efficient monetization. With our scalable hosted platform - the Zattoo "TV Hub" - the operator does not have to invest in hardware or software for its own TV service.

As one of the US leading fiber optics telecommunications providers, Hotwire Communications offers ISP services under their Fision brand to a large and growing number of communities and customers along the US East Coast. Hotwire Communications was looking for a partner who gives them freedom and flexibility to support the specific requirements arising from their business model of serving a large number and wide variety of different communities.

Among all the solutions they looked at, Zattoo stood out with the experience and scale serving millions of TV customers in Europe, as well as with the support of a wide range of devices. A key deciding factor was the rich feature set that our TV-as-a-Service platform supports out of the box.

For the market entry in the US, we have deployed a central "TV Hub" in the US. It is hosted in Hotwire Communications' co-location facility in Fort Lauderdale, Florida. The scalability of our proprietary technology and Hotwire Communications' state-of-the-art video headend and datacenter facilities with excellent connectivity make the newly established TV Hub the ideal basis to serve additional operators in the Americas.

What did Zattoo provide for Hotwire and what makes this offering unique?

For Hotwire Communications we have been developing a feature-rich multiscreen service. In the initial phase, focus will be on mobile devices with iOS, Android and Windows 10 operating systems, as well as on a browser player for PC & Mac.

The service will then be extended to include streaming devices like Android TV, Amazon Fire TV and Apple TV. Along with linear Live TV and Video on Demand in SD, HD and UHD quality, the service offers state-of-the-art interactive functionality such as instant restart, time shift, replay TV, network DVR.

What other benefits does Hotwire get from using Zattoo's platform?

Hotwire Communications already serves hundreds of communities and successfully follows an impressive growth strategy. As our platform is flexible for further growth, the growing number of communities can benefit from the state of the art Video services in the future. In order to facilitate further growth from the central TV hub, caching servers can be implemented close to the end user for efficient content distribution.

What are the next steps for Zattoo as it moves to expand globally?

The first deployment in the US with Hotwire Communications proves that Zattoo's TV-as-a-Service platform can be easily ported to other regions by using a regional TV hub. This approach will be replicated in other regions.

Early this year we have opened a representative office in Singapore serving as a base for expansion into the Asia Pacific region. Opening Singapore marks an important milestone in our strategy to serve network operators, OTT players and media companies around the globe with our state-of-the-art, easy to deploy and cost-efficient TV-as-a-Service model.

Visit Zattoo at IBC, Stand 14.G04

Sweden

IPTV> Kinnevik MTG shares

Swedish conglomerate Kinnevik has completed the distribution of its shares in media outfit Modern Times Group to its shareholders, signalling its exit from ownership of the media company. Kinnevik has distributed a total of 13,503,856 MTG Class B shares to its shareholders. This total includes 4,461,691 MTG Class B shares that have been recently reclassified from MTG Class A shares. Kinnevik took the decision to distribute its shares in MTG earlier this year after the merger deal between mobile telecoms player Tele2 and cable operator Com Hem, when Kinnevik agreed to put into effect pro-competitive measures, if required, to ensure approval of the deal.

Switzerland

IPTV> Swisscom on the up

Incumbent telco and IPTV operator Swisscom grew its TV base by 3.7% year-on-year after adding 54,000 TV connections in the first six months of the year, reaching a record 1.5 million TV customers at the end of June. The Swiss multi-play operator said that TV and broadband connections continue to grow, with strong demand for inOne bundled offerings continuing in the second quarter. In the first half of the year roughly 550,000 customers opted for inOne, pushing the total subscriber base for the offering to 1.89 million customers at the end of June – meaning that inOne covers 43% of all mobile subscriptions and 48% of fixed-line broadband connections.

UK

PROG> BBC voice first

The BBC has launched its first voice experience for children, allowing kids to play along with their favourite characters via Amazon Echo smart speakers. The BBC Kids Skill has launched with three games featuring CBeebies characters – Little Monster's Hide and Seek, Andy's Adventure Dance Party and Go Jetter's Glitchy Facts. Children and adults can access the content by asking their smart speaker to "open CBeebies" and then selecting which game they want to play.

CAB> STV Player on Virgin

Virgin Media will launch Scottish commercial broadcaster STV's on-demand service, STV Player, on its set-top boxes for the first time as part of a new deal with Scottish broadcaster. The four-year partnership will also give Scottish Virgin TV customers access to fully regionalised versions of STV in high definition. Virgin Media will broadcast STV in HD in all cabled STV regions – Glasgow, Edinburgh and Dundee – on channel slot 103 of the electronic programme guide.

OTT> BrewDog taps SVOD

Scottish craft brewery BrewDog, has launched The BrewDog Network, a curated SVOD service celebrating beer. The service will be available worldwide for US$4.99 (€4.30) per month, kicking off with 100 hours worth of content. The service is set to launch 14 original series including *The BrewDog Show*, *Are You Smarter Than a Drunk Person*, and a game show hosted by actress and comedian Alison Becker.

RTL continues VOD and drama focus, rules out Endemol deal

By Andy McDonald and Kaltrina Bylykbashi >

RTL announced strong Q2 and H1 results as it focuses on its two main growth initiatives – building mass-audience VOD services and expanding FremantleMedia's drama output.

Speaking after the company's quarterly results, CEO Bert Habets revealed to Reuters that RTL has dropped out of the race to purchase Endemol Shine, commenting that "we stepped out of the process."

"At Fremantle, we focus on expanding our scripted output – and we are very successful in doing so," he said. "We aim to grow the business going forward in the scripted and unscripted domain by small-and medium-sized acquisitions."

Habets stated in RTL's earnings announcement that FremantleMedia is seeking funding for "at least 35 scripted series ideas" and estimated that international drama productions will generate more than 20% of FremantleMedia's total revenue in 2019.

The German broadcaster continued its business development and 'Total Video' strategy in the first half of the year. In a rapidly changing video industry, it said growth is mainly coming from non-linear or streaming services.

"We will further increase investments in our video-on-demand services, with a clear focus on local, exclusive content, and gradually adopt a hybrid model – combining a free, advertising-financed service with a premium pay product," said Habets.

"First examples of our building strong local streaming champions are the upcoming massive expansion of TV Now in Germany and Videoland in the Netherlands."

For the second quarter, RTL Group's revenue was up by 3.6% year-on-year to €1.63 billion, mainly driven by digital and FremantleMedia.

Reported EBITDA was up 4.7% to €379 million, driven by RTL Nederland and Groupe M6. Meanwhile, net profit attributable to RTL Group shareholders was €207 million, up from €183 million a year earlier.

For the first half of the year, group revenue was up 2.3% to a record €3.05 billion while reported EBITDA was up by 1.9% to €638 million.

RTL announced in June that it would significantly expand TV Now by offering additional local and exclusive content. It said that paid subscriber numbers grew 43.5% year-on-year at the end of Q2.

In April RTL Nederland also unveiled plans to merge its ad-funded platform RTL XL and its subscription VOD service, Videoland, into a single platform.

Endemol Shine owners Apollo Global and Twenty-First Century Fox put the Big Brother creator up for sale in July for €2.5-4 billion. Press reports from earlier this year suggested other interested parties could include ITV, Liberty Global and Vivendi.


See us at
IBC
September 14-18, 2018
Amsterdam
Hall 1, Booth C65
Our beams cover billions of viewers.
Our focus is only on you.

Q&A: Kris Warreyn, Alpha Networks

Alpha Networks' CEO Kris Warreyn talks about the Hubee acquisition, the smart TV market and the key challenges faced by service providers.

Why did Alpha Networks acquire Hubee earlier this year?

The acquisition of Hubee complements our value proposition and helps us to better address the new needs and challenges of network operators and media companies worldwide. Hubee components will be integrated within our portfolio of products to be showcased during IBC. This acquisition is also strengthening our video expertise and is complementing our monetisation solutions by adding the advertisement driven component to our portfolio. Last but not least, this acquisition is increasing and diversifying our customer base.

How far does this acquisition signal a change in strategy for Alpha Networks, and what market need does this reflect?

The acquisition accelerates our strategy and allows us to offer an integrated TV platform, combining the strengths of Alpha Networks' back-end tucano with the user experience skills and solutions of Hubee. This new smart TV platform is broadening our addressable market to broadcasters, channels and other content owners. Being an end-to-end platform, it is the perfect solution for operators who want to launch a cost-effective and reliable video service fast.

How significant is the opportunity in the smart TV market and what is driving growth?

In the pay TV and OTT market, traditional TV remains the dominant screen to access content, even though user engagement is increasingly realised through other devices. The approach of service providers is now becoming more comprehensive and oriented to market standards such as Android TV. This change is accelerating the improvement of user interfaces and user experience on these devices, and we see more and more viewers switching to connected TVs as they become more popular in the home. Operators can benefit of this trend as it lowers their expenditure.

What are the key challenges service providers face and how is this shaping their technology choices?

One of their main challenges is probably how to cope with the OTT platforms such as Netflix and Amazon. They can either chose to compete with them, or aggregate that content within their overall offering. In the first instance, they will focus on specific content and user experience to differentiate themselves. In the second instance, they will be able to aggregate the different content sources and become the main hub for the viewers to access any content. The latter can also be an advantage for the different OTT platform providers as it increases their potential subscriber base.

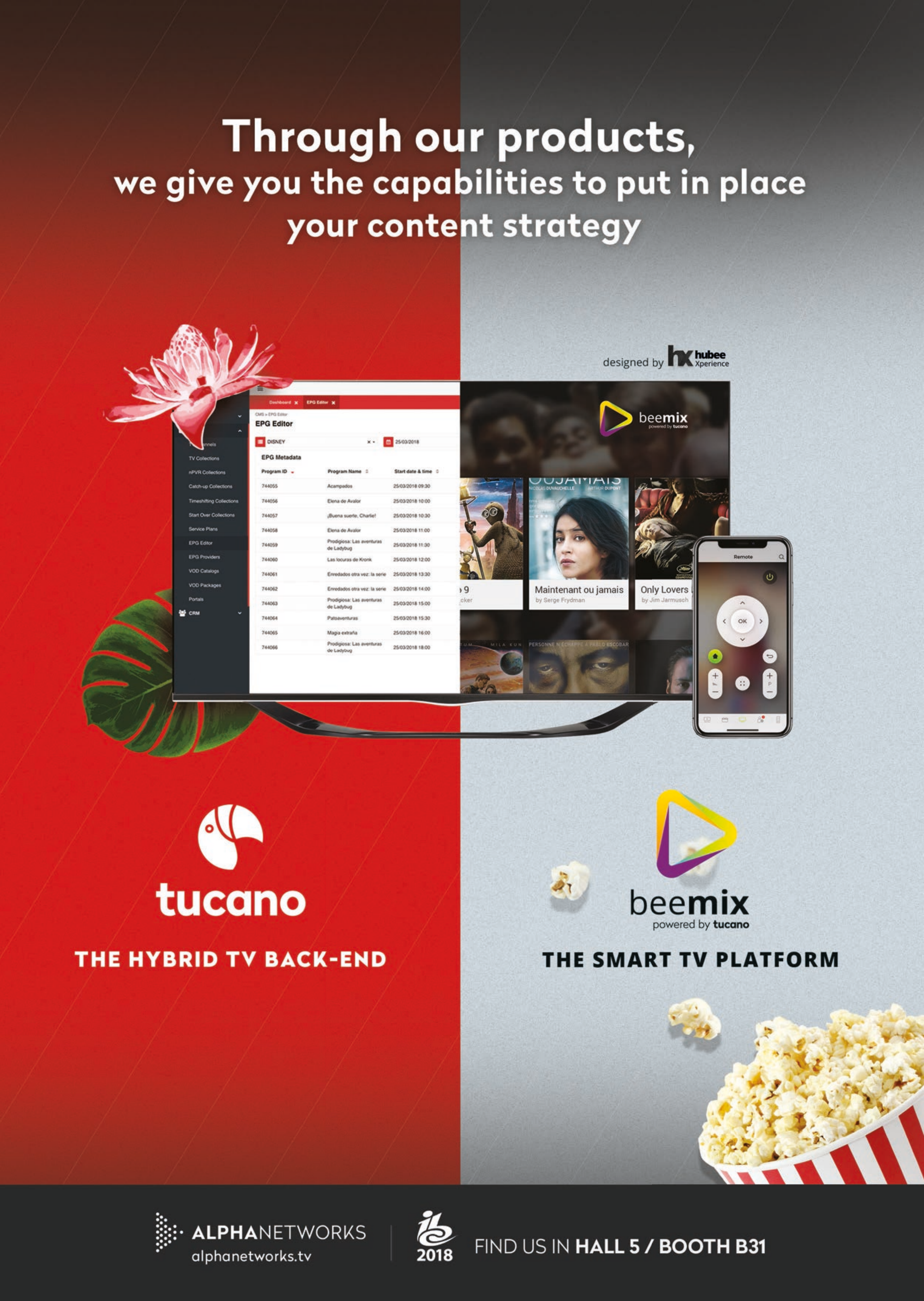
If service providers choose to compete with OTT platforms, they will need technology partners with a strong UX expertise, flexible enough to anticipate new watching behaviours and capable of delivering new features fast.

If service providers choose to aggregate content from OTT platforms, they will need a TV platform that is network and device agnostic, able to integrate any type of content source or metadata, and display different content in a unified way.

What other plans and priorities do you have for the near future?

We will integrate Hubee team and products into Alpha Networks so that we can deliver a unique value proposition to each of our customers. These solutions will integrate our core competences: combining content data and viewer behaviour information in a convergent platform, allowing our customers to offer a personalised user experience to their different subscribers. And we will keep our focus on what gives us added value: our innovative product roadmap, the quality of our services and our short time to market strategy.

Come and meet Alpha Networks at IBC on stand H5.B31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Broadcasting in the age of AI

Artificial intelligence is already having a profound effect on the media and TV space, but what applications hold most promise and what challenges need to be overcome? Andy McDonald reports.

Artificial intelligence (AI) and machine learning (ML) will have a profound impact on businesses and working practices n the coming years, with the TV and broadcasting space no exception.

The technology is already being used to analyse and understand video content in an automated and efficient way. While this can help speed up processes like searching for content, putting together video clips, and distributing it to the right places, how far this will encroach into the creative process of making programming and content is still to be seen.

AI can also help operators and broadcasters to gain a deeper understanding of their audiences, which can bring a range of benefits – from personalised recommendations and targeted offers to emotional response measurement.

We talked to some of the leading technology providers in this space and look at how AI and ML is being deployed and look at the limitations that must be overcome for the technology to continue to evolve.

Data crunching

IBM has a series of products and services that are designed to understand and learn what is contained inside a video. IBM Watson Media brings IBM's artificial intelligence offering to the media and entertainment industry and is designed to support content owners across the content lifecycle.

"Artificial intelligence is a game changer for the broadcasting industry," says David Kulczar, senior offering manager, IBM Watson Media. "In a few short years, we've seen innovation across use cases like content creation, closed captioning, advanced metadata, and cognitive highlight clipping. As AI and machine-learning models continue to be refined, we'll see more companies turn to AI as a foundational technology for their daily operations."

IBM Watson Media's core offering is Video Enrichment, which automatically identifies complex content within a video to generate new, advanced metadata. This makes it easier for content owners to search their video libraries, deciding which content to match with advertisers, and reduces the time it takes to create highlights clips. The company recently partnered with Fox Sports to provide an AI-powered highlight experience for the 2018 World Cup and earlier this year created an interactive, AI-powered viewer experience for the 2018 Grammy awards.

IBM also recently launched Watson

Captioning, a service that automatically captions live video programming like weather reports and breaking news, as well as on-demand content. This can be trained with location-specific data sets to make sure local language nuances like landmarks, sports teams and politicians are accurately captioned.

"IBM Watson Media's biggest priority is enabling our customers to stay competitive in an increasingly crowded and fragmented media landscape," says Kulczar. "We provide our partners with the tools they need to increase workflow efficiencies and enhance the viewer experience, all of which impact the bottom line."

UK-based Media Distillery uses AI to analyse video for what it terms 'deep content understanding'. Its technology is used by TV operators such as Telenet in Belgium and helps them to optimise the user experience in their replay environments. They can use Media Distillery to find out what is in their video content, who is on screen and when, what a programme is about, or when a programme started and ended.

"Our technology identifies a number of visual and audial aspects from video, such as speech, faces and objects. By combining these aspects, our technology even identifies the topic of the content," says Media Distillery CEO, Roland Sars. "TV operators currently use our technology to solve the most pressing consumer frustrations in relation to watching television programs in a replay environment. These frustrations include missing out on the first couple of minutes of a programme because they were not recorded or having to sit through a few minutes of television advertisements before the programme finally starts because it started later than scheduled."

Piksel's vice-president of engineering Gerald Chao believes that there are unexplored search and discovery experiences that deep metadata can enable, "such as via facial recognition, emotional context, and plot analysis, to enhance how media would be discovered and consumed in the future".

The company currently provides tech solutions to big-name companies like Liberty Global, Sky, OSN and Channel 4, and its AI and ML tools help editors to do their jobs more efficiently – for example by identifying duplicate records, erroneous data or metadata inconsistencies. Its AI can also extract deep metadata from assets that would traditionally require manual review and data entry.

Chao believes there is "plenty of headroom" for AI and ML to be used to improve operational efficiencies – like business intelligence, forecasting and cost modelling – and sees the opportunity for ML to optimise decision planning.

Content creation and distribution

Using AI to understand content is a powerful use of the technology, but machine learning also has the power to create and then distribute video to the end-viewer. "Currently, the video industry is experiencing its own sea change in the way video content is produced, distributed and consumed," says TVU Networks CEO Paul Shen, who refers to the shift as 'media 4.0' – analogous with AI-led 'industry 4.0'.

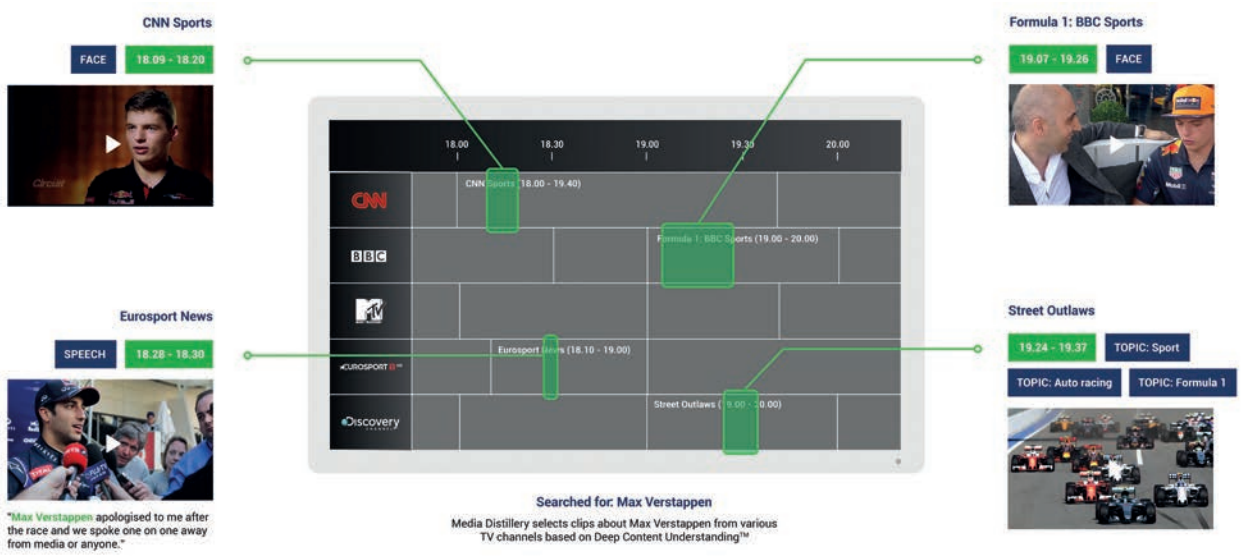
TVU's MediaMind suite of solutions delivers its media 4.0 vision, and includes AI engines that recognise video content and automates its creation and distribution to specific platforms and devices – like smartphones, TVs and social media. In this process, TVU indexes video using metadata generated by MediaMind's AI engine, while TVU Producer creates content for different platforms or audience groups.

"Media 4.0 is about enabling the mass production of content for individual audiences through the automation of video production and distribution. This helps media companies looking to produce more content without increasing their expenditures," says Shen. He claims that TVU Mediamind "creates a new story-centric workflow, as opposed to a programme-centric one" and "opens the floodgates for how programs are produced and distributed".

Over in Tel Aviv, a company called Minute has developed a video optimisation technology that automatically generates highlights from full-length videos. The company's 'smart video previews' product generates what company CEO Amit Golan describes as "the most effective five to seven-second teasers of the most interesting portion of a video," which replaces the traditionally static thumbnail that usually acts as a placeholder for a video.

"These highlights lead to increased click-through rates by an average of 300% and help

Media Distillery's technology is used by operators like Telenet in Belguim.



to drive consumer engagement for publishers, which leads to additional advertising dollars," claims Golan. He adds that during the World Cup this summer the technology was used by a partner to generate teasers and highlights in real time and resulted in "an increase of 13% of new users to the live stream".

Wibbitz is an AI-powered video creation platform that uses patented technology to analyse and summarise text-based information into video storyboards. The company's tech selects relevant media, including videos, images, GIFs and soundtracks from its licensed media library to match the main idea of the text, adding text styles, transitions, and branded elements to each scene of the video.

"Once our technology takes care of the heavy lifting in the video creation process, our users are able to add their own creative touch and get their video out into the world in just a couple of minutes," says Wibbitz CEO Zohar Dayan. Although AI often carries the negative stigma that it could one day replace humans altogether, Dayan believes that the technology will be a complement rather than a replacement to content creators and storytellers.

Founded in 2011 with offices in NYC, Tel Aviv, and Paris, the company supports video creation for more than 400 publishers and brands, helping them to increase audience engagement and ad revenues across desktop, mobile, and social media. Its partners include Reuters, Forbes, Bloomberg, and The Weather Channel.

"By partnering with Wibbitz, The Weather Channel has been able to pair their hyper-localisation capabilities with our video creation technology, and redefine this experience on a digital screen through digital media network LocalNow," says Dayan.

Elsewhere, Make.TV is integrating AI into its Live Video Cloud solution, which it will debut at IBC this year. The offering is designed to let broadcasters and publishers acquire, curate, route and distribute local live video sources from and to any destination. However, acquiring content is only the first step and Make.TV is also trying to help broadcasters and production teams identify the right feeds for their segments.

Make.TV CEO Andreas Jacobi says that in the near future he expects workflows to be able to integrate face and object recognition, enabling operators to automatically trigger graphics or switch between content – for example to follow a specific cyclist or car in a race, or automatically transfer segments to a different server.

In the longer-term, once AI and machine learning algorithms are properly trained, he says: "We imagine whole live streams being automatically generated based on pre-configured rules – the operator becomes the teacher, the AI/ML algorithm becomes the new operator." Like Dayan he believes that AI will still need the guidance of a trained team to be able to work efficiently.

Know your audience

For the viewer, recommendations are a prominent example of AI in action. Underpinning this are broader efforts to understand viewer sentiment – something that a host of companies are helping operators and content providers with.

"As AI and ML models continue to be refined, we'll see more companies turn to AI as a foundational technology for their daily operations."

David Kulczar, IBM Watson Media

ThinkAnalytics has a background in personalised recommendations and uses AI and machine learning to power services like this and natural language voice discovery. AI is at the heart of ThinkAnalytics' big data analytics platform for the TV space, which lets its clients analyse data in real time to help them boost engagement or drive decisions about content buying, pricing, and promotions.

ThinkAnalytics' customer base includes the BBC, Liberty Global, Proximus, Cox, Rogers, Sky, and Swisscom. Earlier this year it also partnered with Indian pay TV and OTT provider Tata Sky to power personalised content recommendations across connected devices – initially on Tata Sky's mobile and PC applications.

"We predict AI will have a huge impact on many various parts of the broadcast chain, including: natural language processing for voice and speech; content understanding on audio, video and subtitle processing; advertising placement; discovery and recommendations; and personalisation," says ThinkAnalytics founder and CTO, Peter Docherty.

"The key priorities are expanding the product portfolio with further enhancements to our viewer analytics and audience insight solutions. These are two areas that complement our strong content discovery heritage and help customers to become more agile and better drive their business forward."

Payments expert Paywizard recently launched an artificial intelligence-driven subscriber intelligence platform. Paywizard Singula is designed to let pay TV operators and OTT providers take a more data-driven approach to customer engagement by using subscriber insights and AI to reduce churn, grow average revenue per user and acquire new customers.

"The notion is that you can harness data to predict how likely a subscriber is to churn or how great their propensity to purchase a package is, but what makes Paywizard Singula so unique and powerful is that it allows operators to accurately identify the best action to take next in real time – in other words, determine what activity or interaction will work to keep that customer happy, on-board and positive about their experience," says Paywizard CEO, Bhavesh Vaghela. "This action could be to offer a timely promotion, an informative communication, or even the decision to do nothing, depending on the recommendations provided within the Paywizard Singula platform."

The Paywizard Singula launch comes shortly after the company partnered with the EPCC data science unit at the University of Edinburgh to develop advanced predictive models of consumer behaviour and automated processes, a move that will help develop Paywizard's AI-driven capabilities. The initial project will see a team of data scientists working alongside Paywizard's internal business intelligence team to deliver the new enhanced functionalities, with Paywizard looking to expand its internal team with University of Edinburgh graduates.

With a focus purely on sentiment, New York-based Canvs claims to be the industry standard

Q&A: Andy Shenkler, Deluxe

Andy Shenkler, Chief Product Officer at Deluxe, talks about the challenges faced by media companies in managing the content supply chain and the benefits of using a cloud-based platform.

What are the main challenges faced by media companies in managing the content supply chain?

The biggest challenge is standardised information: with the growing number of content creators, there is less consistency with how content, and its related data, is represented or shared between entities. Even something as simple as a basic title hierarchy to describe a piece of content can change materially between organisations. It can be challenging to have to support so many different "standards". The goal is to create an orthogonal dataset (a structure that will allow everyone to describe their data in their own way) that will also allow for frictionless distribution and a consistent user experience across platforms.

Why is this so critical? Because when content is organised it can be automated, ultimately leading to a faster time to market and the ability to monetise content in new ways, which becomes even more important as broadcasters compete for audiences everywhere at an increasing speed.

What is Deluxe One and how can it aid content companies to meet their needs?

Deluxe One is a cloud-based platform that brings together our Hollywood-tested, end-to-end products and services - from content acquisition and title and asset management, to localisation, distribution, and through to consumer experiences of OTT / linear playout.

Deluxe One organises your content and connects it, unifying a traditionally fragmented content supply chain. A window into your content, Deluxe One provides interconnectivity and transparency to manage assets, process orders, orchestrate workflows, and connect to an ecosystem of content creators, distributors, and vendors.

What are the main benefits of using a cloud-based platform in delivering a unified supply chain?

As new technologies continue to emerge, and with the pace of consumer demand not slowing, the cloud allows us to constantly upgrade our tech and also scale up and down as capacity needs change. By shifting away from on-premise infrastructure, we're able to invest in the future of the industry versus just meeting today's current demands.

The cloud not only helps decrease time to market, but also allows us to offer our customers flexible and more predictable cost models. We're no longer held captive to long lead times of infrastructure acquisition or capacity constraints. We're able to rapidly scale up infrastructure in order to support our clients' peaks, as well as increase capacity for managing new and emerging large format files like UHD and 4K. What once took days or weeks to procure can now emerge in a matter of minutes. As more and more of our customers and partners continue to migrate their operations to the cloud, we're seeing a rapid increase in efficiency and reliability.

What is the target market for this technology and what are its key differentiators?

Our goal was to create a platform that creators and distributors of all sizes could use. It's flexible and modular so that a customer can use one piece of it and leave the rest, or take advantage of the full end-to-end ecosystem. But, the real power lies in the fact that every aspect of the platform is integrated, so the more aspects you leverage the easier it gets to use.

There are a lot of companies leveraging the cloud, but Deluxe One is unique in that it's built on the back of the largest content supply chain in the world. Deluxe is the only provider with a true end-to-end capability from lens to living room, and now we've made that capability more accessible and scalable than ever before.

In contrast to a traditional MAM or DAM system, Deluxe One enables an entire ecosystem from creation to consumption. Leveraging deep system logic on the backend, Deluxe One creates clean set of assets upstream with robust metadata speeding up the creation of downstream deliverables by reducing redundancy and wasted resources.

What use case can you highlight to illustrate Deluxe One's benefits?

We've found that one of the most exciting things about Deluxe One is its ability to allow for easy global expansion into new markets. When moving into a new territory with legal requirements, Deluxe One can take on the burden of distribution agreements and eliminate the need for a large operations team to sort through the various requirements.

After syncing with their library, OTTs find that Deluxe One can manage all their assets and provide distribution services directly in-app, simplifying localization, packaging and delivery while providing title tracking to coordinate release windows across different markets and devices to maximise monetisation.

For MVPDs, Deluxe One can help reduce the time and costs associated with content management. MVPDs work with hundreds of different content owners and providers, seemingly countless files, and processing those files individually can be an expensive process. Deluxe One can ingest assets from all your content providers and provide a view into everything at once through our title library, with automated processing, and provide visibility into where everything is at any given time.

Come and visit Deluxe at IBC on stand H7.C49

Wibbitz's technology is designed to take the heavy lifting out of video creation.

for emotion measurement. The company uses patented semantic AI and machine learning systems to understand how people feel, why they feel that way, and the business impact that creates for brands, agencies, and media companies.

Canvs' clients include Comcast, Fox, Turner and Netflix, and earlier this year NBCUniversal signed up to use the Canvs Surveys product to get a consistent and accurate read on open-ended survey responses. The NBC research department also uses Canvs for pilot testing. Canvs CEO Jared Feldman claims that it helped to cut the time it takes NBC to sort out survey responses from 16-hours to one, while providing "never-before-seen normative insights across pilots".

"Ninety percent of human decisions are based on emotion, and there is no trusted standard in quantifying emotional response at scale. Canvs is able to use its patented semantic AI to decode the unnatural language phenomenon," says Feldman. "Put simply, Canvs uses AI to provide immediate emotional and topical analysis of words expressed online, via surveys, anywhere."

Discussing the company's main priorities, Feldman says that he wants to help ensure that Canvs' broadcast partners use it daily to create research efficiencies, unlock marketing opportunities and increase revenue. "Our biggest challenge is where to focus because Canvs is applicable to so many markets beyond media," he says. "If Canvs can continue to be the enabling agent that transforms emotion insights into business-critical media decisions, the sky is the limit for our growth".

In April of this year, US social entertainment company Fullscreen acquired influencer marketing platform Reelio in a move designed to make the influencer marketing process "automated, scalable, and streamlined from start to finish".

Reelio's AI platform identifies which creators would work well with brands based on the audiences that they share and the relevance of content to the advertiser. It also predicts the return on investment a brand might see when working with influencers across a set of social media platforms and formats and suggests how to optimally allocate budgets.

"Consumers have had a very tenuous relationship with advertising over the last few decades, to put it mildly," says Reelio CEO Pete Borum. "Our mission is to transition the world away from advertising that is interruptive and annoying, to unintrusive branded content that entertains, educates and inspires – all while driving real and measurable ROI to advertisers."

Learnings and limitations

While the existing benefits and the further potential of AI and ML for the broadcast and media industries seem clear, there are still challenges that must be overcome.

Shen at TVU argues that the greatest of these is the perception that AI-led solutions will be much more powerful in a year from now, meaning that AI is "pretty much only deployed today if it's both the only solution for a task and that task absolutely needs to be accomplished." However, he believes that the time when AI will be the first-choice solution is "quite some time in the future – but probably not as far away as most people think."

Docherty at ThinkAnalytics describes the biggest issues surrounding AI as not the technology itself, but making sure that you have good data to work from. He says that it is easy to waste too much time getting data out of silos – data that must then be cleaned and transformed to avoid suffering 'garbage in, garbage out'. At the same time, hiring skilled people to do such work presents another challenge.

The scope and scale of datasets is also cited as a challenge by Borum at Reelio. "Pre-acquisition, Reelio relied on a combination of very large, publicly available datasets, as well as smaller, proprietary datasets," he explains. "Combining those two and leveraging them to train AI in a way that is unique and valuable is quite challenging. Now that we're part of Fullscreen, the scale of the data we have access to is significantly larger and significantly more varied. This solves many of our previous challenges and simultaneously creates new ones."

Minute's CEO Amit Golan says that AI needs a defined question to get the right answer. If the question is vague or subjective, the insight gained might not be appropriate. Data sets also need to be big enough to yield good results, with a large amount of data or content on the same topic required for 100% accuracy.

Kulczar at IBM says that video is a complex medium with nuances that AI technology needs to be trained to understand – for example, crowd noise at a golf tournament will be very different to that at a football match, but both in their own context can indicate excitement levels.

"One aspect of the technology that is often overlooked is training. AI is only as good as the dataset it is trained on and creating an intelligent system requires the right information," he says. "While the past two years have been critical for AI innovation, and the technology has proven to be a gamechanger for media, we are still in the early days of artificial intelligence."

While predictions for an AI-powered 'fourth industrial revolution' seem to fall anywhere from automated disruption to full robot apocalypse, for the media industry there are certainly promising signs that AI will both help companies assemble and sort content and viewers consume it. How big a step-change this will create in the long-term for the TV sector is yet to be seen, or determined by an algorithm.

Q&A: Peter Cossack, Irdeto

Peter Cossack, vice-president, cybersecurity services, Irdeto, talks about emerging threats to revenue security and the role of watermarking in protecting high-value content.

What are the key emerging threats to revenue security for video service providers?

Piracy continues to be the biggest threat to existing business models in the pay TV industry, with a report from Digital TV Research last year estimating that lost revenue due to piracy will reach US$52 billion by 2022. Emerging threats over recent years have included OTT credentials theft, and the threat from peer-to-peer (P2P) piracy is also not going away. However, recent technology advances have seen the rapid growth of content redistribution piracy, which is now a global problem for content owners and rights holders.

With the latest technology, it is much easier for pirates to steal content and, with UHD and HDR, the quality of that content is much higher. Social media streaming capabilities and the pirate plugins that are enabling illegal viewing through Kodi, for instance, have lowered the threshold for piracy. As a result, the need for robust protection and tracking of high value content is even more important and this is the main driver for watermarking.

How can watermarking help video service providers secure their content?

Watermarking is a proven, crucial tool in the fight against content redistribution piracy. The invisible, unique mark provides the forensic capability to track and trace, helping you identify the source of leaked content. It also complements other content protection technology such as DRM and Conditional Access. In addition, the forensic information that can be provided by watermarking is the key to unlocking business value. This intelligence enables you to protect your content and current revenue through enforcing contractual compliance.

Watermarking technology is one of many powerful tools that puts the control in the hands of the operator. Using watermarking in conjunction with monitoring will allow the operator to see tangible benefit. Embedding the watermark into your digital content is only part of the overall process however. To ensure revenue and copyright protection, watermarking must be combined with proactive online detection and enforcement services.

Why is watermarking so crucial to protecting 4K UHD content in particular?

There are a variety of use cases for watermarking, from broadcast, to video-on-demand to live OTT streaming, but the watershed moment for watermarking has undoubtedly come with the rapid growth of 4K UHD content. This higher quality content requires increased investment from content owners and rights holders, but its greater availability is also driving the increase in the illegal supply of premium content.

MovieLabs' Enhanced Content Protection (ECP) specification has also set a new bar for what operators must do to get this kind of premium content. It ranges from ensuring renewability in CA and DRM, to locking down consumer devices, to end-to-end breach response. Watermarking is a key part of this and for on-demand content such as movies and TV shows, server-based watermarking offers the robustness required for this content which does not have a limited vulnerability window. However, for live events and sports, a client-based watermarking approach should be the focus.

How useful is watermarking in protecting live content and what are the challenges in applying watermarking in this environment?

When it comes to live content such as sports, speed is the name of the game. It's critical that the pirate streams are shut down as quickly as possible as the value of the content is at its highest whilst it is being broadcast live.

The challenge is to process thousands of streams very quickly, scale up detection, find the pirate streams, and identify the watermark in as short a time as possible. A combination of an automated platform with human verification is the most ideal approach to this. This means that the service swiftly identifies infringing content. The discovered URL's are run through the detector then analysed and validated if not watermarked, with evidence captured for inclusion in the chosen enforcement approach. Having the ability to submit URLs instead of having to create files for detection allows us to do detection in minutes to speed up enforcement. Relationships with ISPs and a strong network of partners also play an important role in the process to ensure the speed of takedown of live streams.

How widespread do you believe the use of watermarking will become over the coming year and what are the main factors driving uptake?

The threat to revenues and high-quality content from piracy is not going away and this will see content owners and rights holders push themselves even harder to battle piracy. The next year will see content owners, and sports rights owners in particular, increasingly mandating watermarking and other anti-piracy requirements in their licensing contracts. This will drive uptake across the industry to ensure content investments are as well protected as possible. We are also seeing that the data is giving the companies that have implemented watermarking unique insights that are very useful when making business decisions.

However, pirates are always adapting their approach and it is only through a 360-degree approach to security that operators can best protect themselves. This means a combination of state-of-the-art anti-piracy technology, proactive services delivered by experienced investigators and analysts, and comprehensive cybercrime business intelligence services.

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The age of Android

From being an also-ran in the TV operating system space, Google's Android TV could be set to sweep all before it, following the introduction of the service provider-friendly Operator Tier. Stuart Thomson reports.

There are many reasons to believe that rumours of the death of TV are greatly exaggerated. One such reason is that global technology giants such as Google and Apple have long coveted TV as an untapped market and have made a number of attempts to gain a foothold in it, both in services and in technology to enable those services.

For Google, which has made a number of attempts to position Android TV as an entry point into the TV service provider market with limited success, the last year has seen a major breakthrough. Its technology has made phenomenal progress as the platform of choice for service providers. The trigger was the introduction of the Android TV Operator Tier, which finally laid to rest many of the fears and concerns operators had about getting up close and personal with Google.

Operator Tier

The introduction of the Operator Tier gave life to Google's strategy of trying to penetrate the service provider market, something that its previous efforts had largely failed to achieve. Hitherto, operators had the choice of surrendering their independence by adopting Google's TV platform wholesale – effectively giving the tech giant control of their customer data as well as the look and feel of their service and reducing their own presence to that of an app on Google's service – or by opting for the Android Open Source Project, the initiative whereby Google made most – but not all – of the elements of the Android source code available royalty-free to third parties to develop their own proprietary devices and services.

"Originally the Android Open Source Project was a technical platform used by Swisscom but it took a huge effort to build something," says Kai Christian Borchers, CEO of 3Screen Solutions, one of the leading providers of Android Operator Tier launchers for service providers. "No other operators were willing to play [with Android TV] and lose complete control over their set-top box and customer experience."

Adopting Android TV meant giving Google complete control of customer data and having the final word over the line-up of channels as well as taking charge of search results.

Having failed to make much headway with this less than enticing prospect, Google undertook a rethink and ultimately came up with the Android TV Operator Tier. The main staging post was enabling custom launchers that gave operators control of their own user interface. Canal Digital in Norway was among the first operators to build its own custom launcher for the platform, ultimately transitioning to the full-fledged Operator Tier along with fellow Swedish service provider and leading cable operator Com Hem.

Whereas previously operators' services would simply be one app among many, with the Operator Tier they can control the experience from the home screen.

"From the operator's perspective there are more options to customise the user experience and to be able to brand it," says Shankar Nagarajan, vice-president of products at technology provider Seachange. "Having a custom launcher makes things really interesting for our customers."

The Operator Tier has fuelled an explosion in Android TV deployments globally, leading technology providers to focus efforts closely on the Android TV market. "The operator community has a large installed base of Linux set-top boxes out there and we continue to support those and innovate on them," says Chris Thun, vice-president of product management, TiVo. "But the Android TV space is where we see the bulk of the growth."

Reasons to be Android

Android TV has a strong appeal for operators for two key reasons. The primary one is that it opens out an almost infinite array of services for the operator to offer to its customers. The second is that Android TV provides a platform with the scale to deliver highly affordable set-tops and a big potential base of app developers to create new applications and services.

Com Hem chief technology officer Thomas Helbo says that changing consumer behaviour was the key reason the cable operator decided to adopt Android TV, along with the flexibility and fast time to market that the platform enables. While set-top upgrades in the past often took up to two or three years, operators are being faced with demands for more advanced services from customers used to seeing rapid changes in the user-experience associated with Netflix and other OTT companies. "We see ourselves as content aggregators," says Helbo, who adds that speed of development was another factor in leading it towards Android TV.

A third element, says Helbo, is "reputation". Cable operators are increasingly seen as somewhat old-fashioned incumbent players and Com Hem had an ambition to shed this perception. The Swedish operator also provides services over multiple networks – not just HFC cable – and adopting Android TV accommodated that.

"We needed something that could accommodate all the different platforms – cable, digital-terrestrial and multicast IP over open fibre networks – that we operate on," says Helbo. "Then you also have the growing attractiveness of OTT." He says that the operator needed "a Swiss knife" in the shape of a set-top that can cover all bases and handle the transition to non-linear, web-based content.

Helbo says that Com Hem looked at multiple options before taking a decision.

"From the operator's perspective there are more options to customise the user experience and to be able to brand it."

Shankar Nagarajan, Seachange

These included relying on a major turnkey technology provider, which offered a great degree of stability and in-depth knowledge of TV. However, for relatively small players, it is often difficult to command attention to meet the needs of local regulations and other requirements.

The second option was RDK, the cable-centric initiative to create an open source platform for operators on which service provider-specific implementations can be built. However, the platform requires operators to have signfiicant resources to accelerate the development of the complete user experience.

With Android TV Operator Tier, on the other hand, "you get the flexibility of integrating broadcast TV with all of the OTT TV services you need", he says. Operators like this, says Helbo, because they get "all the flexibility from integrating broadcast TV with OTT services and they see this as attractive because it is the closest they get to a standardised platform"'.

The introduction of the Operator Tier has gone a long way to mitigate service providers' fears about Google by giving operators access to a customised user interface, which has always been key for operators's brands, says Helbo.

"The Operator Tier gives you a customised UI and that has always been the strength of operators," he says.

Helbo admits that being tied to Google may carry some risk, but points out that operators always have the option of replacing it at some point in the future if the tech giant's policies change. In any case, he says, Google has shown itself keen to "make it a success for both parties" and is continuing to move in more operator-friendly direction rather than the opposite. By contrast, he says, the old Android Open Source Project was a more-or-less closed-off environment that did not offer support for next-generation technologies such as Google Assistant and future smart home functionality.

Confidence that Google will not change its policies in a way that alienates operators is broadly shared. TiVo's Thun says that it is still the case with Android TV Operator Tier that "the operators don't control the rule-book any more", unlike in the Linux world. It is possible that Google could change its priorities in the future. However, he says, Google is unlikely to do something that is against operators' interests because the tech giant wants a big slice of this pie and doesn't see it as in its interests to alienate a rapidly growing customer base.

Moreover, the likes of Com Hem's comfort with the platform signifies that its appeal is not limited to IPTV providers. Cable operators, traditionally more inclined to build something bespoke with the aid of trusted partners, are now also looking to Android TV as a solution, according to Seachange's Nagarajan.

Q&A: Simon Trudelle, NAGRA

Simon Trudelle, senior director of product marketing at NAGRA, talks about the changes driving take-up of OTT among consumers and how OTT TV technology can transform the TV experience

What are the key changes in consumer behaviour that are driving take up of OTT TV technology by service providers?

Our 2018 Pay-TV Innovation Forum research findings show consumers are clearly enjoying the new freedom that OTT TV gives them to consume the content they love, anytime and anywhere, on the screen of their choice. Yet one could argue that anytime TV – via the PVR – appeared two decades ago and anywhere TV with smartphones and Wi-Fi connections a decade later. So what has really changed? First, quality content: high-budget series are produced for on-demand consumption, and live TV events such as sports are also streamed in UHD. Second, Catch-up TV and other VOD content from the cloud are broadly available and monetised. Finally, publishing and accessing new content through apps has never been so easy. A growing share of consumers worldwide have tried and tested such services, and they appreciate this new model. However, as the NAGRA-sponsored TV Tribes research from Ampere Analysis highlighted, the pay-TV consumer market basically features five major audience segments with different content needs and consumption habits. The only thing we know for sure is that consumer behaviour will keep evolving quickly over the coming years. Pay-TV service providers – incumbent and new entrant telcos – need to keep innovating.

What advantages can OTT technology provide for pay TV operators and how can they adapt to the new market needs?

It's all about operational flexibility and feature agility. This goes from the frontend UI to the apps that are on-boarded, and the backend platform that powers and secures TV services. OTT offers potential, yet the underlying platform needs to address multiple use cases, both in terms of user experience and content protection expectations across all screens. This implies upgrading and moving key backend functions to the cloud – a move that large cablecos and telcos are acting on – while ensuring that the TV platform can be frequently and rapidly updated to address new opportunities, and leverage data analytics and AI to build intimate subscriber knowledge.

To what extent can OTT deliver a superior experience to that of traditional pay TV?

OTT content is often accessed through a very different customer journey compared to the traditional channel-based scheme that many TV viewers still appreciate as well. This means that service providers need to develop user interfaces that support and blend both navigation journeys and are consistent across multiple devices, providing a complete set of TV features, from linear to start-over, catch-up, flexible on-demand offerings, and seamless access to multiple content sources or apps. This is why at NAGRA we developed OpenTV Signature Edition, a multi-journey user interface and platform that enables service providers to address different viewers' needs. And, with support of STB platforms like Android TV, we ensure that viewers have optimised access to multiple sources of OTT video apps.

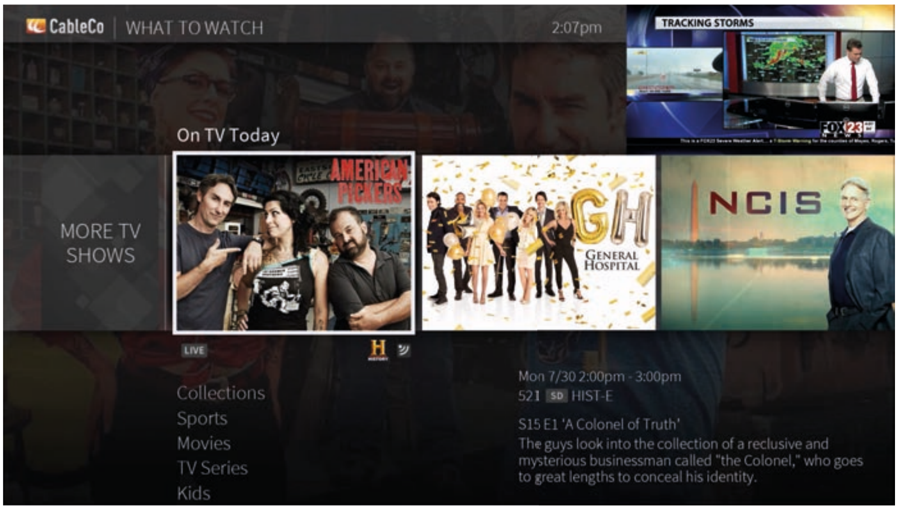
What impact has Android TV had on the market?

The market is split in two camps regarding Android TV. Large operators see a complex trade-off if they chose to do business with Google, which offers its Android TV software platform for free in exchange for access to highly valuable usage data. Conversely, smaller providers realise that Google's STB platform helps them reduce their overall TV solution costs, leapfrogging competition with apps and on-demand content. Giving up some control and value to strike a major partnership makes sense to them.

NAGRA's extensive product portfolio helps operators address these key requirements, both for large and small operators. For those wanting to capitalise on the Android TV opportunity, OpenTV Signature Edition covers all major end-to-end needs, enabling operators to quickly launch a fully-featured Android TV platform, addressing user experience, security, data analytics and hardware – while reaping the benefits it provides in terms of deployment speed, access to apps, and reduced complexity. This makes Android TV a viable monetisation option for their pay-TV services.

What are the challenges in providing an OTT TV experience that matches or exceeds that of pay TV and what solutions are available?

OTT TV and pay-TV are just the two sides of the same paid content coin and consumers don't care about the difference. As the recent World Cup showed, appetite for unicast streaming services is growing fast yet the scalability of multicast and broadcast solutions are still proving immensely valuable for high viewership events. While progress has been spectacular, we are working with industry leaders to overcome challenges to deliver the low latency experience that consumers expect. Meanwhile, service providers need to play smart and leverage their existing infrastructure while planning for seamless transition to OTT TV over time. At NAGRA, we have developed expertise and products to help our customers, large and small, just do that: evolve their business, secure their aggregator of choice position or enter new territory through partnerships.



Technology providers such as TiVo have joined the rush to support Android TV.

"There was reluctance in the cable space to 'look like everyone else' but the Operator Tier has unlocked this market. Operators can control the experience with the benefit that their customers can do cross-platform searches and so on," he says.

OTT TV services

There is broad consensus that the biggest element in the appeal of Android TV to operators is that it opens up quick and easy access to a vast array of OTT TV services via the Google Play store.

"The foremost reason that operators are looking at Android TV is the ease with which you can incorporate OTT services," says TiVo's Thun. "Google Play is priority number one."

3Screen TV's Borchers agrees. "We see that cable and IPTV customers want more than just TV. They want linear TV, video-on-demand and DVR but the main thing [they want] is integration of third-party services like Netflix and Amazon," he says. With the Operator Tier, service providers have immediate access to the Google Play store, giving access to a wide range of popular OTT TV services. Adopting the platform means that Netflix comes already integrated, something that can take additional work with alternative platforms such as RDK or the Android Open Source Project.

The other key advantage provided by the Android TV Operator Tier platform is that provides what technology providers describe as the closest the industry has achieved to a standardised set-top environment.

Borchers says that Android TV now has the support of around 40 operators including those in the pipeline to deploy it – not all of whom are Operator Tier adopters – compared with about 13 for its main rival, the cable-centric RDK. While many of the Android adopters are relatively small compared with, say, Liberty Global, the likely growth trajectory of these and other entrants will be "very hard to compete with", says Borchers.

That standardised environment includes the power of Google search and recommendation, enabling users to search across different content silos, according to Borchers, who adds that the introduction of the Operator Tier has enabled service providers to ensure that their own content is prioritised in search results.

The Android TV environment also enables operators to tap into the deep well of Android developers, rather than finding developers who can work with platforms with smaller footprint. "Even Android developers are hard to find because it is a high-demand market," says Borchers.

TiVo's Thun meanwhile highlights the ease of integration of the platform, pointing to the amount of work that needs to be done to build a service on Linux set-top boxes.

By comparison with Android TV, platforms such as the cable-centric RDK require possibly a greater effort on the part of operators.

Neverthelesss, some service providers may prefer to go their own way rather than hitch their wagon to Google's star, particularly if they are so reluctant to open up their platform completely to OTT TV services. "There are still customers out there who are not willing to open up their environment entirely to third-party apps," says Robert Rozycki, senior product manager at Seachange. "However, if an operator accepts that the most important thing is to keep the customer inside that environment, but with a greater choice, then Android is the one to go for."

Seachange's Nagarajan adds that large cable operators are more likely to be reluctant to offer a product provided by Google and more likely to want to fully control the user experience. However, while those players have the engineering resources in house to look to RDK or another solution, smaller players lack that luxury. They are more likely to find Android TV, which gives them voice-enabled search and recommendation as part of the package, for example, attractive.

Anthony Smith-Chaigneau, senior director of product marketing at TV technology outfit Nagra, says that some large operators are still likely to have concerns about control of data, which will be key to making revenue from advanced services in the future. "Not everyone wants to get into bed with Google. There's still a question over how much you might want to give up and how much you want full control over. A lot of people are still juggling with that and analysing the pros an cons."

For Smith-Chaigneau, the key advantage of opting for Android TV is less to do with the uniqueness of the technology, but about the Google ecosystem and what it can bring for operators. The scale provided by Google has driven down the cost of sophisticated high-specification set-top boxes, he adds.

"It has driven down the price significantly and for that you you get the high-powered set-top that Android TV needs," he says. There is now a homogenous set-top platform available supported by a wide array of suppliers, something that is relatively new to a market where set-top suppliers in the past typically focused on the platforms that were popular at a particular time.

TiVo's Thun agrees that the cost of set-top boxes is a key factor in calculating the merits of Android TV. "It gives you standardisation of the set-top requirements that drives the box cost down from about US$200 to about US$50-70. While the industry has seen that price point before, what we are talking about here is a full-powered set-top that can support all the streaming services out there," he says.

The Android TV ecosystem includes chipset, middleware and front-end user experience providers. The middleware needs to work

Q&A: Duncan Potter, ARRIS

Duncan Potter, Senior VP global marketing at ARRIS, talks about the findings of the ARRIS research, what consumers expect from their service providers and where their appetite lies in terms of services.

ARRIS recently conducted research into the importance people around the world now attach to always-on connectivity to the web. What are the key findings with relevance for service providers?

ARRIS surveyed 20,000 consumers from 20 countries across the globe to determine their attitudes toward constant connectivity. The findings point to key trends – and the evolution of consumer expectations – when it comes to where, when and from which device they want to be connected. It's valuable for service providers to understand these changing expectations to address consumer needs in their market. Some of the key findings show:

- More than 76% of households believe constant connectivity is changing their lives for the better
- Consumers have a strong preference for a single service provider and look to them to provide a seamless connectivity and entertainment experience
- Households with children and elite power users rate security/privacy more important than cost
- 61% of consumers believe "too many active devices" is their top Wi-Fi streaming/download issue. They fear that new technologies like IoT (38%) and virtual reality (29%) will cause further device congestion pointing to the need for better device management

To what extent are people prepared to pay more for always-on connectivity and how might this help shape what service providers offer to them?

The ARRIS research shows that more than 53% of consumers trust their Internet/TV service provider. On average, more than 46% say they are willing to pay more for a seamless experience. This number increases in India, where 74% of consumers are willing to pay more for a constant connectivity experience, while Swedish consumers are less likely at 28%.

For service providers, consumer priorities are consistency, convenience, and cost, which ties to their belief that they receive more value when services are bundled. The top four bundled services consumers value are the Internet (74%), subscription/paid TV (49%), mobile data (43%) and online security/privacy (36%).

From your research, what qualities do people value from their service providers and what should service providers prioritise based on these findings?

More than 76% of the surveyed consumers say that entertainment is more than just watching a screen. It's about new experiences and opportunities that they can access anywhere, anytime and in any format. In Brazil and Malaysia this figure climbs to 90%, but Germany says this least at 58%.

The findings point to the fact that service providers should keep an eye on the indoor/outdoor use-case, especially for households with children as 53% want their Internet service provider to deliver a seamless experience in and out of the home. Seventy percent expect outdoor connections to be the same quality as inside the home and that figure jumps to 77% for households with children. Respondents in EMEA (60%) and in US/Canada (62%) had a contrasting view of this when compared with respondents from APAC (74%) and CALA (85%).

How important is video streaming to users relative to other services and how is the pattern of consumer behaviour changing?

Consumers voice significant frustration when it comes to their ability to stream or download video content. Sixty-one percent attribute this frustration to having too many active devices functioning at once, while 51% point to the lack of Wi-Fi access in their home due to distance/range. A few European countries are among the least likely to say this, including Germany (50%), Spain (45%), and Sweden (53%). Only Japan (33%) and South Korea (45%) recorded lower percentages. These frustrations could get worse as more than 41% of consumers globally now pay for streaming video services, which is an increase from 27% just two years ago. Fortunately, many service providers are already turning to solutions like ARRIS HomeAssure™, which delivers reliable, high-bandwidth Wi-Fi to every corner of the home with a simple consumer experience

How significant is consumers' appetite for ultra-high-speed in-home Wi-Fi connectivity and what is the opportunity here for service providers?

Consumers want Gigabit Wi-Fi speeds. According to the ARRIS CEI survey, more than 75% of consumers believe that Gigabit speeds will transform their lives. An overwhelming 90% state that high-speed Wi-Fi Internet access is important in every room of their home. This figure escalates to 96% for power users.

Interestingly, consumers also shared what they would give up to have the perfect, constant connectivity Wi-Fi experience. Topping that list are alcohol (30 %), cinema/theatre (26%) and gym membership (25%). From a regional perspective, consumers in Malaysia are most likely to give something up (85%), while consumers in Germany are least likely (48%).

Service providers are an important link in delivering these services to ensure a constant connectivity experience that delivers unparalleled entertainment value to consumers.

Come and see ARRIS at IBC stand 1.B19

with the specific box chipsets and there are different types of chipsets for hybrid boxes that include tuners for broadcast channels as well as IP. A number of chipset providers are in the queue to be certified by Google. Among box manufacturers, Technicolor currently has the lion's share of the market, with Asian manufacturers trying to catch up.

Software provider 3Screen Solutions has provided the reference implementation of the platform through its 3Ready platform, and Borchers says that Google has asked his company to deliver more integrations with set-top middleware providers.

Borchers sees relatively little risk for operators. He points out that, in the past, service providers feared being too closely aligned with single set-top suppliers and an eight-year lifecycle for a particular generation of box. That equation has not fundamentally changed in the case of Android TV, he says.

"The Android TV Operator Tier gives you a customised UI and that has always been the strength of operators."

Thomas Helbo, Com Hem

Borchers goes to far as to argue that Android TV could effectively take poll position in the cable market as well as among telecom operators, pointing to the example of Com Hem, which has been among the pioneers of Android TV Operator Tier.

Android TV Operator Tier is also able to support hybrid deployments, combining legacy broadcast technology with streaming. Seachange's Rozycki says that Google "did not have a clear policy about hybrid", which has largely been left to software and hardware vendors. In addition to supporting the use of traditional broadcast infrastructure to deliver linear services, he says that there is potentially a significant market among operators with large populations of legacy devices in the field that they do want to swap out.

Software companies see plenty of opportunities around Android TV. "You can't deploy Android TV as it is," says Nagra's Smith-Chaigneau. "It needs to be part of a fuller ecosystem. It needs an operator back-end to deliver TV features such as linearised video-on-demand and a backwards EPG and security."

Smith-Chaigneau says that technology companies can play a role as system integrators. "Android TV makes things more plug-and-play, but the pay TV ecosystem is the sum of many parts that need to be knitted together," he says. "While deploying an Android TV solution, you are still looking at formats from UHD down to mobile TV and to distribute to iOS devices and Amazon Fire TV. You have to be open to a whole range of end devices with different operating systems. Android is not going to be the only flavour in the market."

Nagra also has a role to play in helping to secure a platform that some observers believe is open to potential attack. Hanno Impola, senior director of product marketing at Nagra, says that one key to providing enhanced security against "the large attack surface" of Android TV has been to separate the Trusted Execution Environment, which handles entitlements and licences and security-related actions, from the Rich Execution Environment, which runs all the third-party apps on the platform. "We can keep any malicious apps and hacking attempts in the Rich Execution Environment," he says. "We have build a virtual brick wall between the two that effectively blocks any attempt to access the Trusted Execution Environment via the Rich Execution Environment."

Future developments

Will Android TV sweep all before it thanks to the momentum behind the Android TV Operator Tier?

3Screen Solutions' Borchers goes so far as to say that his company has seen the market for Linux set-tops "completely dry up" and that he has encountered "no requests for Linux boxes" for the best part of a year. However, others make the case that Android's popularity does not mean that it will be the only game in town. TiVo's Thun argues that "innovation in this industry takes time" and that Linux-based platforms are not going to "disappear overnight" because of the "very large historical investment" that operators have made.

For some observers, the most significant rival platform is not one of the existing middleware providers or the RDK platform, or another global tech giant entering the market, but the 'bring your own device' strategy looked at by a number of operators that are happy to distribute their services via an app on a third-party device, at least to the growing device-savvy Millennial market. The appeal of this approach can be seen in decisions by Swiss operator Sunrise and France's Canal+ to supply Apple TV to their customers.

TiVo's Thun adds a note of caution, arguing that Android TV is really "in the middle of the spectrum" between Linux-based platform and the BYOD world, which he characterises as being at a relatively early stage of development. "There is a wide variety of things that operators need to be comfortable with before that becomes widespread," he says.

The proliferation of Android TV on the one hand, and BYOD on the other, does not close off the service provider market to other technology providers, and Thun makes the point that Android TV is not a technology cure-all for operators. "Android TV is often portrayed as a disruptor to the pay TV industry, but that is a misrepresentation," he says. "Android TV is a set-top box operating system. It does not provide everything an operator needs."

One of the main opportunities for software providers catering to the Android TV market now is to enable a seamless multiscreen experience, says Thun, who sees a role for his company as an enabler of a seamless user experience across multiple dimensions, including Android TV on the set-top, iOS in mobile and so on. "You don't want five different user experiences across those different devices," he says.

For operators including Sweden's Com Hem, meanwhile, integration of Google Assistant and smart home functionality in general is on the horizon. Helbo says that integration of Google Assistant, which has only just been launched in Sweden, "is definitely on the roadmap" along with smart home functionality more generally.

"The important thing for us is to see the TV box integrated as a communications device within the home and to make us the default choice for HDMI1," he says. "We should be the main communications and entertainment device for the family."

Agama TECHNOLOGIES

Q&A: Mikael Dahlgren, Agama Technologies

Mikael Dahlgren, CEO at Agama Technologies, talks about key developments in video distribution and ways to exceed customer expectations.

What key developments do you see taking place in the video distribution business?

In a market full of choices, it all comes down to exceeding customer expectations and enabling customer base expansions. This includes for example geographical coverage, ease of use, content, price, payment method and service quality. To succeed, video service providers constantly improve their video services to exceed the expectations of the consumer, all while delivering video services in the most cost-effective way.

Technologies like adaptive bitrate streaming are used in all forms of video delivery to enable service flexibility and coverage, for example in TV Everywhere extensions and virtual cable rollouts. For OTT services, securing premium and exclusive content is becoming more and more important.

Also, whilst a lot of OTT content is consumed on various devices, premium OTT content such as live sports is turning consumption to the main screen. OTT also drives the need for flexibility in deploying and running services in a virtualized, cloud or hybrid environment.

There are more simultaneous changes happening in the market than ever before in order to meet and exceed customer expectations.

How do these developments impact on the way operators handle quality assurance?

To manage this new and at times more complex service delivery environment, the need to rapidly gain the right insights is key. This is true not only when it comes to managing quality assurance, but also in agile service development and for a deepened customer understanding. To manage service quality and customer expectations, service providers need a complete and instant view into service performance for the complete delivery chain and subscriber usage. These insights are vital when developing new offerings and managing time critical premium services like live OTT, where proactivity and automation are key.

What do service providers need to think about when considering new business models such as the virtual cable operator model and live streaming of premium events?

When it comes to virtualized cable operations and premium OTT live streaming, viewers are starting to perceive theses services in a similar way as traditional premium TV services, with similar expectations on quality and overall experience. However, the underlying technology obviously differs and offers its own unique challenges. As live services affect every viewer in real-time, special focus must be placed on the early stages of the delivery chain and the real-time perspective.

Again, a deep understanding of the service delivery through the whole chain in real-time, from service creation all the way to the individual customer's app or device, is key to secure a growing customer base and is the core of the Agama 360 concept for analytics and visualization. Of course, the monitoring, assurance and analytics solution used by the service provider must also be able to function in a virtualized or cloud environment.

What other immediate business and regulatory challenges are operators facing, and what do you think they need to do to address these?

In Europe, this year's big regulatory issue has of course been GDPR. The leading suppliers in this industry have worked with privacy matters for years and have experience in supporting service providers in implementing processes and solutions.

Looking ahead, what do you identify as the main trends in this space?

Looking at the developments and challenges currently seen, there is a need for far more insights that will support service providers in maximizing customer satisfaction and creating great service offerings with must-see content. The winners in the video service market will be the ones who have access to the right type of high quality data and manage to draw the right conclusions from it – and in this, AI and automated analytics will be key to deliver the best customer experience possible as efficiently as possible.

As consumers fragment across platforms, how can advertisers be sure of the value of their investment? Adrian Pennington investigates.

Advances in advertising

Today's fragmented viewership is the biggest issue plaguing advertisers. Gone are the days when TV networks could rely on delivering a broadcast ad to the living room in primetime with the whole family gathered around. Today, advertisers have to navigate myriad devices, platforms and VOD in order to find their audience. However, many of those platforms are giving advertisers better opportunities to target specific audiences. Piecing all of it together is a significant challenge.

"Increased consumer awareness and cross-screen fragmentation means that the development of data-driven TV planning and buying is growing," says Ed Wale, managing director, UK and Spain, SpotX. "This creates an opportunity for publishers and broadcasters to capture incremental digital ad revenue when making their premium inventory available to brands and advertisers across screens."

He says this is particularly the case when partnered with granular data reporting that enables digital publishers to offer one-to-one audience measurement.

"The risk is that there are eyeballs that are not being counted and credited towards audience sizes when it occurs on a mobile device or outside of the same day, seven-day or even 30-day windows," adds Belsasar Lepe, co-founder and CTO, Ooyala.

Bridging the gap

Multiple efforts are underway to bridge the gap between the traditional sample-based methods for measuring broadcast audiences and new methods for measuring multiscreen viewing.

As Tim Jacks, principal, strategy at Cartesian underlines, sample-based methods, where data is gathered from representative panels of viewers, tells us something that data from most multiscreen services won't – who is watching the programme. "Is it someone watching by themselves, or a whole family? And it tells you what demographics those viewers come from."

By contrast, online multiscreen data tends to be about what is being viewed – a programme was watched for so long, at such a time, and was paused three times, for example – but doesn't tell us anything about how many people are watching, or what demographic they fall into. For SVOD services, that's not usually a problem, but for traditional commercial broadcasters it matters.

There are technical and business challenges to overcome. From a business point of view sign-off is required from a range of parties - publishers, aggregators, advertisers and vendors of audience measurement tools and the ad tech that sits in the middle.

"Each party has distinct business goals, which in turn means a unique set of incentives when designing a universal measurement system," says Aditya Ganjam, chief product officer at Conviva. "In addition, there is a broader shift from traditional direct buying, which has been a mainstay of TV advertising for many years, to more efficient programmatically enabled addressable advertising."

When you layer this technology shift on top of multiple stakeholders jockeying for position, it's easy to see why coming to an agreement on a single measurement system is a headache.

"The reality is that ad sales teams are to all intents and purposes still printing money – legally. There is not yet an overwhelming need to adopt standards that fundamentally change how business is done," says Lepe.

"An important difference from the current siloed currency systems, is that the most likely agreement will be for a cross-media planning currency," says Bas de Vos, global director of audience targeting and activation, Kantar. "Trading will remain as it currently operates; in TV with TV ratings; in online on agreed CPM prices defined via programmatic systems."

There are initiatives to at least have an agreement on the requirements for reporting specific metrics from the IAB and, in the US, the MRC (Media Ratings Council).

From a technical perspective, the issue is scale. Panel-based measurement starts to break down when you need to measure consumption of niche content on niche platforms.

"The industry needs a clear, single, independent view," says Wale. This is beyond the ability of a single broadcaster, particularly when taking into account all the different devices TV is now viewed on. ITV Hub, for example, is available on 27 platforms alone.

"Since TV audiences are typically much larger than most online audiences, on a per programme basis, it follows that hardening audience measurement solutions that can accurately and reliably measure very large audiences that span multiple screens and the three-day, seven-day, 30-day, x-day windows will take time," says Lepe.

Kantar Media's Focal Meter tracks online/player activity on any device connected to the home network. Recently upgraded, it is currently in operation in Norway and Finland, while work on deployments is ongoing in Turkey and Hong Kong with tests being carried out in the UK and Switzerland.

A People Meter is also ready to go to market. The most fundamental redesign for 20 years, according to de Vos, it will incorporate real-time data collection to deliver real-time ratings for all TV viewed on the main screen – whether live, time-shifted or VOD.

Lack of transparency

If a universally recognised audience measurement covering multiscreen and time-shift is not reached, confidence in the medium could be destroyed. "The main danger is the perceived lack of transparency, which would result in missed opportunities for media publishers," says Jacks. "Last year we saw online brands take huge criticism from major advertisers such as P&G, which stated that it has deep concerns about lack of digital measurement standards and the fraud that comes along with it. If TV wants to take advantage of dynamically-inserted advertising, and the flexibility that comes with it, it needs to ensure that advertisers trust that they are getting what they pay for."

Ganjam also says there is a need for a single trusted third-party measurement tool to be agreed. "Brands will have to buy across multiple different platforms without a consistent mechanism for measuring performance. This will make designing attribution models more challenging. Furthermore, there will be a trust issue because it will be harder for brands to trust the data coming from individual platforms, publishers and aggregators."

The transition from sampled data to big data measurement of audiences is underway. Nielsen, comScore, and BARB all have offerings, but not all of these are trusted.

"We are in the 'hardening' phase of the lifecycle of these solutions and it is not clear how much longer we'll remain in this phase," says Lepe. "In that sense, we aren't at a place where there are good or best examples. There are a lot of works in progress."

One of them is Nielsen which rolled out a total audience measurement tool that combines panel and census data into a single measurement tool. However, during the initial rollout, some publishers pushed for a more limited release because they felt the data could be incomplete, and might offer misguided direction, according to Conviva. A single measurement tool still hasn't been agreed.

Another work in progress is Project Dovetail, which is expected to be delivered in September with the publication of multiple-screen viewing figures across TV sets, tablets and PCs. The UK's BARB has also started reporting TV set audiences for non-linear programming and reporting of dynamically-inserted advertising.

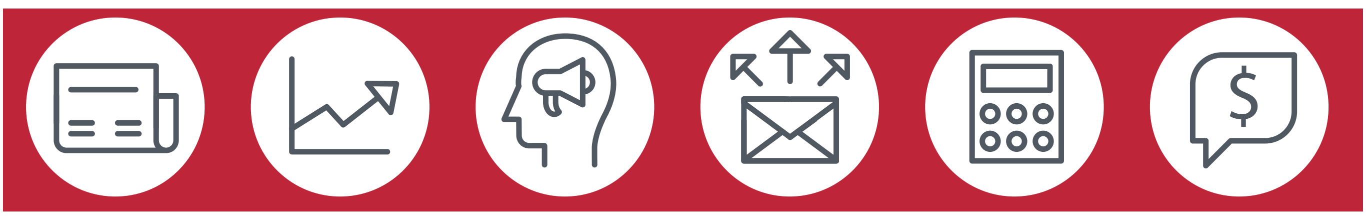
"Building on this, we are committed to delivering comprehensive reporting of TV set usage," explains Justin Sampson, chief executive of BARB. "Our third strategic priority is addressing the growth in unidentified viewing on TV sets – viewing more than 28 days after broadcast and non-broadcast viewing. This includes viewing to SVOD services, such as Netflix and Amazon. We can measure viewing to SVOD services in the same way that we report our panel members' viewing to non-linear programmes, but it requires the co-operation of the service providers."

BARB is also exploring how router meters could be deployed in panel homes to deliver an aggregate level of viewing to SVOD services without their cooperation. It is currently trialling two meters: one from Kantar in BARB's core panel and another from Nielsen in a specially-commissioned panel.

"Our ability to deliver comprehensive insight is improved with the cooperation of media channels and the platforms they are distributed through," says Sampson. "This is the principal challenge, as we have the techniques to measure new forms of viewing."

BARB believe a joint industry approach is key to providing equitable figures across all media companies. Its recently consulted a range of advertisers, agencies, broadcasters and social media platforms about their expectations for a cross-platform currency, from which two points emerged. First, the joint industry currency (JIC) principles that underpin BARB (independence, objectivity and transparency) should not be weakened or compromised. Second, the addition of any channels/platforms shouldn't impact on the integrity of data collection and reporting methodology.

In addition, the survey clarified three areas where advertisers and agencies expect any cross-



platform currency to delivery comparability: all reported viewing metrics should follow established TV conventions for duration, viewability and verification; advertisers and agencies expect advertising reach and frequency to be calculated for placements that meet industry-agreed standards for brand safety; and advertisers and agencies should be able to plan campaign reach and frequency into editorial environments classified by genre/programme and to verify campaign delivery.

Conviva calls for a census-based approach and points out it has the largest independent census data collection and measurement network in the world. This has been deployed, it says, on behalf of many live and VOD publishers and broadcasters "to measure QoE directly from the consumer in-screen experience as well as very detailed engagement data in a continuous, census-based approach."

Ganjam adds: "Most legacy-based approaches were discrete event-based web counting or statistical sampling-based audience surveys. Conviva's approach is real-time true viewer-level continuous measurement. It was purpose-built for video, and the sensor technology computes consistent and accurate metrics over a diverse set of streaming devices and application software frameworks."

Packaging for SVOD

Once you have a consistent cross-platform measurement tool, you can use data analytics to extract deep insights about customers' preferences, helping publishers identify the sub-genre of content to commission in order to appeal to valuable customers. The information could also be used to package and promote a SVOD service depending on the target market.

Netflix and Amazon both view data as encompassing more than just engagement data and collect data everywhere along the content lifecycle and user journey. This allows them a form of content ROI that no other players can match. Crucially, they also benefit from a closed ecosystem and significant investment in data analytics.

"With these insights, they not only know which assets to recommend to a given user from a given catalogue, but also what content to create and add to that catalogue in the first place," says Lepe. "This approach has fundamentally changed the nature of how you operate if you want to compete in SVOD."

Traditional pay TV operators have made progress in developing the use of analytics, driven by their increasing base of connected devices. Jacks at Cartesian says the company has worked with multiple operators to apply analytics to STB and device data "to develop a much more sophisticated understanding of their cost base – which content is delivering good value for money, which content is key to customer retention and so on."

around extensive, per-user data and behaviours like ad targeting. The new legislation means users have to give explicit consent for the PII (personal identifiable information) to be processed. This is particularly relevant within the digital sphere. "Strengthened privacy practices will reap long term benefits for the whole ecosystem," says Wale. "At the same time, privacy concerns could affect the ability of all parties to efficiently transact at scale."

"An important difference with the current siloed currency systems is that the most likely agreement will be a cross-media planning currency."

Bas de Vos, Kantar

Arguably the best method of quantifying how audiences are consuming video is simply to get the right information from users.

"Analytics benefits from audience measurement, not the other way around as the resulting data can then be run through algorithms to better market SVOD services," says Jacques-Edouard Guillemot, SVP, executive affairs, Nagra. "The operator wants to know which shows are being watched, when and on what device. This creates opportunities, for example, to cluster subscribers very precisely to recommend certain packages of content. If a user likes watching golf, the service provider can suggest and build packages that will appeal to this demographic."

This is core to Discovery's attempt to better segment Eurosport's fanbases. "Data analytics is already helping us deliver content and marketing in a more tailored and personal way to fans, with the goal of providing them with the ultimate experience around the sports they are passionate about," says the firm's head of international research, Vincent David.

The reality is that there are multiple 'standards' for online audience metrics and they are not always agreed on, nor controlled by the companies involved. De Vos believe this "always online" world will grow towards a set of metrics that the industry agrees on, but it will take time to build a system of agreed planning metrics and an agreed set of buying metrics. In online the two are not necessarily the same and that makes this even more complicated.

Much has been made of GDPR and how it will be the end of services and monetisation built

SpotX has developed 'Audience Lock' as a kind of 'data escrow' to conduct data-driven transactions so that buyers and sellers can maintain complete control of their data sets. According to Wale, this alleviates concerns by matching user IDs and audience segments in a controlled environment. It also ensures proprietary data is only available for the campaign at hand and can be configured to expire upon campaign completion.

"Measures like these can be valuable to the broadcaster who has a duty to keep its data safe before for legislative reasons, whilst also ensuring it maximises revenue," he says.

Ooyala predicts that over time these restrictions will encourage more transparency around how data is used.

"It is not hard to imagine a world where our personal data more explicitly becomes a currency that each of us uses to access 'free' services online and maybe even offline," says Lepe. "Does that mean a potentially smaller audience? Yes, potentially somewhat smaller as some – likely mostly older audience audiences – will opt out. But, I'd wager this won't be a materially large number."

Conviva similarly believes GDPR is good for the industry. "This additional layer of security will help engender trust among consumers, which has been challenged in the wake of data-privacy scandals," says Ganjam. "It doesn't prevent the collection of audience data, but ensures that consumers are fully aware of what data is being captured and how it is being used. Ultimately this will help weed out bad actors and should prove beneficial to the industry."

ruwido

Q&A: Ferdinand Maier, ruwido austria gmbh

Ferdinand Maier, CEO at ruwido, talks about short-term fashions and trends in technology, personalising the user experience and convenient interaction.

What are the key factors that enable you discern between what might be a short-term fashion in design and functionality and what is likely to be a long-term trend with wide market appeal?

Based on the findings of our scientific research we are constantly working to differentiate between technology that is a fashion and technology that is becoming a trend. For example using gesture-based interaction to control your TV was clearly a fashion, while the ability to (naturally) communicate and talk to others as well as to a system is a trend. It is the evaluation of consumer needs and user's values that enables us to understand the long-term impact of technology on media consumption and to consult our customers. Our scientific research also helps us to understand what technology to invest in and which not to focus on. Seven years ago we said using voice is a kernel behaviour and we believe in the potential of voice for search if you know what you want. Now almost all of our remote controls feature BLE with speech transmission in combination with other interaction mechanisms, a trend with a wide market appeal for different age groups, and with a wide field of use.

To what extent do you think voice will be the primary input mechanism of the future, and what other long-term trends or evolution do you foresee?

The key market opportunity will be providing the perfect alignment of content combined with seamless interaction supporting several modalities. This includes voice interaction and standard control as well as new technologies enabling identification of users in front of the TV.

To reach 'user experience excellence' it is essential to provide a personalised offer for TV consumers that goes beyond basic recommendation algorithms. We need to support 'convenience' for the user with an instant personal selection that is more than targeted advertising. What we are talking about is highly personalised information, transparent, understandable and clearly structured. With the integration of new technologies, the system knows who is in control as soon as the remote is picked up. As well as instantly knowing a user's preferred settings, completely personalised options for suggested content can be delivered. With the associated advantages for highly personalised information, the remote control will become a revenue generator for the operator.

Can you expand on the distinction you draw between the 'smart home' and the 'convenient home' when looking at the future evolution of in-home functionality? What kind of applications and services are consumers likely to be comfortable with?

With more homes becoming 'smart' the question is whether we really like the idea of a future living room anticipating what people want and machines adopting the behaviour and 'feelings' of humans. We strongly believe control is for humans not machines. People need to stay in control over their devices within the home environment, set the tone and remain master of the home. The living room is 'the campfire of the new age', a safe place, and we have to respect that.

So how can the demands of an increasing amount of 'smart' products be met and how can users be supported to reconnect with home appliances in a pleasant way?

What we are about to develop is the convenient home, not the automated home. The latest step in that direction is the enhancement of our TICTACTILE.system. The holistic approach brings together our knowledge of haptic, visual and voice for a remote and synchronised user interface designed to provide convenient interaction with a range of day-to day household needs, with no loss of control. Via the TV or specially designed screens, TICTACTILE. can control all TV functions, sound systems or lighting for example. TICTACTILE. is designed to remove the inconvenience of juggling different UIs across devices, because it uses the same stripped down 12 button structure. In order to make content or functions more easily accessible it is important to offer a holistic experience for the user, no matter which screen is used for access.

Remote controls have always been designed to manage and navigate content. Now they are also powerful enough to seamlessly merge different home appliances, with a consistent navigation paradigm. At IBC we will showcase how convenience can be supported, embedding the TV watching activities in the overall context of the home.

What are the major challenges you face in designing devices that delight consumers and how can these be overcome?

There is no major challenge, there are only customer requirements for more convenience. Technology is not the driver for the media and entertainment business, it is a natural interaction that will make the difference.

ruwido will be exhibiting at IBC, on stand 1.D69

Accenture: a four-point plan for media

Media and entertainment businesses face an unprecedented array of challenges as big tech companies move into content creation and distribution. To survive and prosper, established players need to guard their core business while forging a path to unlock new revenue streams through innovation, says Accenture's Gavin Mann.

"If we want everything to stay the way it is, everything must change." As Tancredi Falconeri tries to convince the old Sicilian aristocracy to adapt and take a hand in shaping the new Italy (from Giuseppe Tomasi di Lampedusa's The Leopard).

There is no doubt that the media and entertainment industry is experiencing a period of extraordinary revolutionary change. Internet companies have played the major role in driving this. New types of distributors have emerged and have empowered consumers to expect something different. On the demand side, the growing purchasing power of the 'digital native' generation – which looks to the internet to meet its entertainment needs – is adding to the pressure on big media.

Growth from established revenue streams of media and entertainment businesses has therefore stalled. While their digital revenues are increasing, this is still from a small base. And this is all happening at a time when new entrants such as Netflix and Amazon, and potentially Google, Facebook and Apple, are eating into their market share. Studios are no longer in a position to act as effective gatekeepers of their content, and networks are losing their brand power in an everything-on-demand world.

"You need whatever you provide to work as well as Amazon, as Uber, as Facebook."

Those new entrants are increasingly setting the benchmark against which consumers judge established companies' performance. The term Accenture uses is "liquid customer expectations" to describe the phenomenon whereby the best-in-class experience available on any device or type of service bleeds into consumer expectations across all service providers. If Netflix provides the best subscription video-on-demand experience, or Uber, the easiest to use mobile App, pay TV customers expect their provider to deliver something similar – in addition to the equivalent of the best-in-class linear channels experience and a best-in-class broadband and mobile phone service.

"You need whatever you provide to work as well as Amazon, as Uber, as Facebook," says Gavin Mann, managing director, global broadcast industry lead at Accenture, "Platforms with the biggest budgets continue to raise the bar. There is no finish line and service providers must get used to continual change. For organisations not used to this pace of change – meaning most businesses – that is disruptive."

With traditional distribution channels in decline, media and entertainment companies need to find the key to unlock the value of their content assets in the digital world.

However, unlike the new disruptors such as Netflix and Amazon, broadcasters and traditional media companies also have to maintain and nurture the steady reliable cash flow that comes from their legacy businesses and established customer bases.

"Media companies face a macro-level challenge and a macro-level opportunity. The difficult part is how to change their culture and operating model and embrace the change in the way that will be necessary over the coming decade while continuing to grow their legacy business, which remains very important and is in many cases still very strong and will be around for a significant period of time," says Mann.

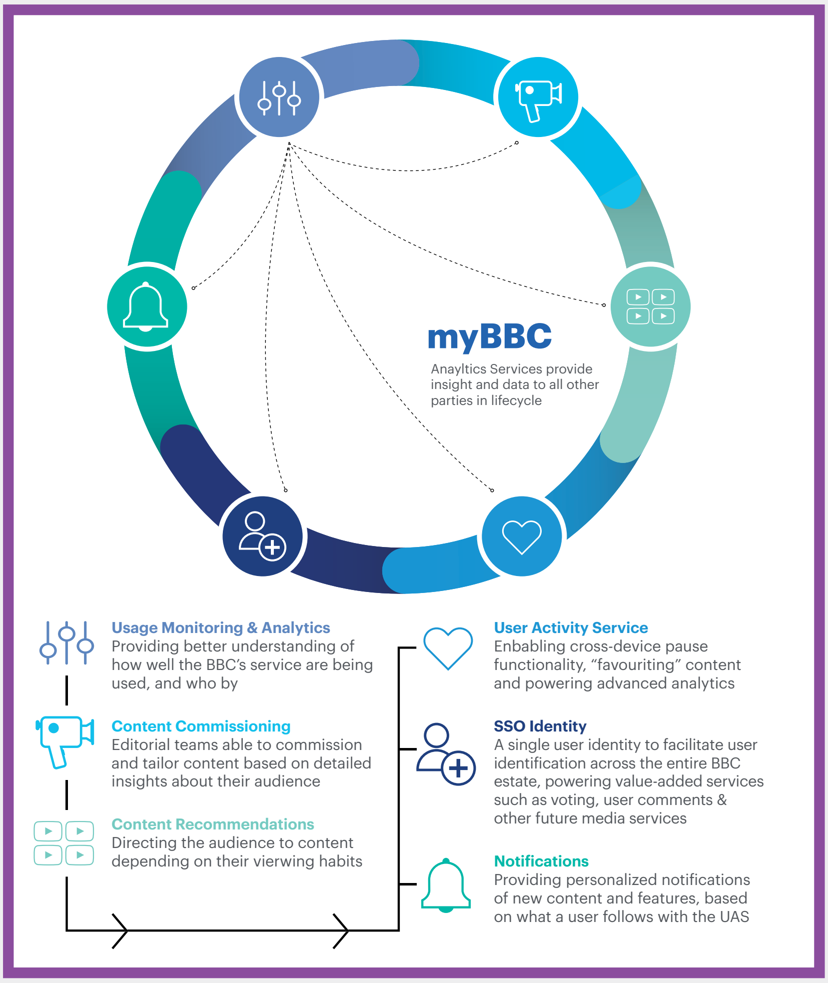
To address this, Accenture has proposed a four-step plan to enable media companies to evolve their core businesses while freeing up cash to invest in the new: transform the core; grow the core; scale the new; and finally, know when to make what the company describes as a 'wise pivot'.

Transforming and growing the core

For Mann, media companies must in the first instance work out how to take costs out of their core business and at the same time develop a clear understanding of how to grow revenue from linear distribution.

It is however vital for established players not to try to overreach themselves by dismantling their core business before they have fully built out a new one to put in its place.

"It is very important to decouple the new from your legacy business. We don't recommend overhauling that business. You can invest to take some cost out of it but putting the whole thing on a new platform is fraught with risk and very expensive," he says.



A far better approach, he says, is to make small-steps improvements to the core platform where the risk is relatively low and focus effort on innovation in new areas that can be built on independently of the existing business. "If the core platform is really complex, it may be possible to leave it in a black box and to innovate around that, but don't jump into performing open heart surgery on your core business," he cautions.

This advice extends to all aspects of organisational change and creating a workforce capable of taking on the challenges wrought by digital disruption.

"Again, you need to decouple the old from the new. There are some skills that will still be required for some time to come, but there is clearly a whole new need to create a culture that enables creative and constant innovation, including a need to be able to fail safely," says Mann.

Embracing data science – sometimes a challenging task in an industry led by creative people – along with diversity will also be key to getting the most out of the media and entertainment workforce, he suggests.

Broadcasters can start to grow by experimenting with new revenue-generating ideas that sit on top of their core linear business. "There are ways to extract even more value out of this very significant business," he says.

Above all this means gathering and making use of data. Enhancing existing linear revenues from advertising through the judicious application of data analytics will enable media companies to better understand their audience, placing them in an advantageous position relative to competitors.

"It is very important to decouple the new from your legacy business."

For Mann, "passion for the customer across the entire organisation" will be of crucial importance in delivering results. But delivering a best-in-class experience and being able to innovate in ways that delight customers will lean heavily, inevitably, on data.

Mastering the use of algorithms that help companies bring their audiences together with the content that pleases them will be one of the key survival skills for media companies in a fast-changing and increasingly globalised business. Mann cites UK broadcaster Channel 4 as an example of a company that has successfully adjusted to the growing centrality of data, while the BBC is praised for myBBC's long-term coherent vision of reinventing public service broadcasting through data, transforming its relationship with its audience by building one-to-one connections to deliver a more personalised experience.

Broadcasters with the courage to develop the habit of logging on among their audience base are building an asset for the future, says Mann.

There is no point in putting the future of the business in jeopardy because of an untested fear of alienating a section of the audience that is already inclined to complain about any change, he suggests.

Scaling the new

Developing this kind of flexible mindset and the ability to execute the necessary changes will not be enough on its own for broadcasters and media companies with geographically-defined markets and revenue streams that are being targeted by trillion-dollar internet giants with global reach. Media companies need to tack to adjust to the headwinds they face by making the most of their advantages to develop new business models alongside the core business.

"Global-scale platforms are extraordinarily difficult to compete with directly," says Mann. For this reason, he says, media companies will have to be more open to partnerships, and more creative about structuring those partnerships in ways that deliver value for the participants.

Such partnerships are likely to take the form of "loose couplings that enable participants to tap into another scale", says Mann. There is no one-size-fits-all formula for success. Media companies will have to be inventive in working out how to share data with third parties that do not compete directly in the same market, to the mutual advantage of all concerned.

He points to 'data cooperative' initiatives in the US and in Europe that seek to lay the groundwork for media companies to operate at greater scale by enabling cross-publisher audience targeting and independent posting for advanced audiences – meaning advertising buyers can consistently target market segments across participating television publishers – without the sellers having to pool their inventory.

Forging partnerships to deliver scale is only one part of the battle to fuel growth, however. Media companies must also prove they have an ability to innovate in new areas. Ultimately, they have to try out new revenue streams and figure out what works.

"Linear TV still has a long future ahead of it and there is uncertainty about how things will evolve."

"They need to demonstrate that they can deliver a good return on capital invested. Innovation is important for growth. Just being cost-efficient doesn't drive up the share price – but it can release necessary funding to fuel innovation and create a culture of innovation to deliver new revenues," says Mann.

Media companies' core revenues may be larger than digital revenues overall, but new revenues will grow faster. CEOs are becoming more proactive in tackling the disruptive forces that are changing their industry. But many still struggle to pivot their organisations to new opportunities decisively or sustainably. Some companies remain overly focused on their core business such that they are unable to pursue new opportunities. Others neglect their core business in a dash to the New, leaving them on thin ice or short of the investment capacity they need. Getting it right is a balancing act," says Mann. "Data can help you know if you are making the right moves. You can test and learn."

Wise pivot

Those new revenue streams are the acorns from which the oak trees of tomorrow will arise. Media companies that work through the trial and error stage of experimenting with different revenue-generating ideas will ultimately be better-placed to know when to make a 'wise pivot' away from the old core business and build on what was previously an experimental sideline to create a 'new core'.

Anticipating this point of inflection is a transformational journey that involves rethinking the operating model, skills, technologies and core KPIs. Mann believes that broadcasters and other established entertainment businesses run the risk of being complacent because of the inherent strength of their core business. After all, in video distribution, linear TV continues to deliver audiences and big recurring revenues. But for how much longer?

"I think, in relation to video, that people take comfort from their legacy business. Linear TV still has a long future ahead of it and there is uncertainty about how things will evolve," says Mann.

However, he adds, broadcasters also need to provide a plausible story to investors who are aware of the industry's direction of travel and know that developing a growth strategy requires a different mindset to protecting an existing cash-generative business. Convincing investors that they have a meaningful growth story is therefore crucial. Only companies that are in a position to invest for growth will be able to withstand the competitive onslaught of big tech on the sector.

"Companies without an innovation story that don't change their culture to be in a position to innovate will see shareholders lose confidence that they can continue to be high performers," he says. "You can't change overnight. While the bottom is not about to drop out of linear TV it may drop out from underneath those for whom the sole plan for the future is to stick with linear TV."

To prosper, businesses need to anticipate that tipping point in advance of it occurring and to make the necessary preparations.

The advice proffered by Tancredi Falconeri to his uncle holds good for media and entertainment companies addressing the challenges presented by the fast-evolving digital video ecosystem. To stay in place and preserve their legacy, they need not just to embrace change but to lead it.

"People overestimate the pace of change in the short term but highly underestimate it in the long term," says Mann. "Right now there is a healthy linear business, but in 10-15 years this could be an IP-only industry. At some point the broadcast signal will be switched off, and we're not talking about the distant future." ■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Experience counts

Keeping audiences engaged is key to any successful video service, but how are traditional content providers adapting to today's market? Anna Tobin reports.

With the exception of live reality shows and major sporting events, mass audience appointment TV is an experience few of our children may remember. In a matter of years, streaming services such as Netflix and Amazon Prime have rapidly encroached on the space that traditional linear broadcasters have owned for decades. These streamers have taken eyeballs away from trusted local and national broadcast TV schedules, and it's not purely due to the freedom offered by anytime, anywhere viewing. The recipe for their success is the creation of an engaging user experience. But what are the key ingredients for this and how can traditional content providers compete?

Crucially the SVOD giants notch up screen time without the audience realising how hard they are trying to keep them engaged. "The consumer experience or journey to the content they love should be as unobtrusive as possible," says Anthony Smith-Chaigneau, senior director of product marketing at Nagra. "Easy, intuitive and fast with a consistent journey are equally important elements as people consume media on a plethora of different devices throughout their day. Embracing data for deeper consumer insight and a journey to better personalisation with the notion or feeling that all the content they love is accessible in one place will make a holistic, engaging TV-user experience."

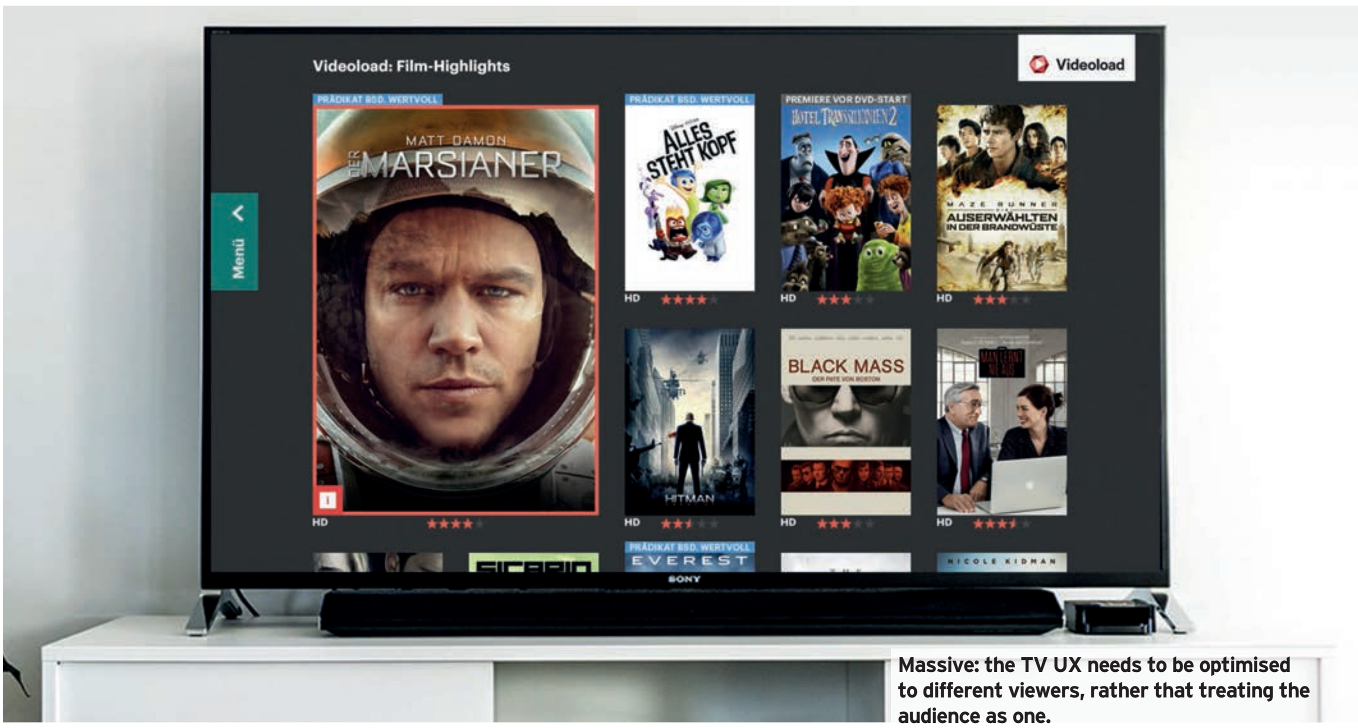
A seamless UX that allows the viewer to aggregate and access all their content from whichever device they are using, should also be clever enough to anticipate the user's needs and this is where the latest technology comes in.

"This type of interface relies on new technologies like hyper-personalised recommendations and the power of voice as an input method to rise above the experience of legacy systems," says Charles Dawes, senior director of international marketing at TiVo.

Broadcasters need to adapt the way that they interact with their audiences too, claims Neil Berry, chief revenue officer at Airbeem. "One thing TV does not do well, largely due to most of them relying on interaction via remote control, is complex navigation. As such, menus and layouts need to be clean and easily accessible, getting users to content in as few remote presses as possible," he explains. "Similarly, the large amount of screen real estate means that dynamic, interesting imagery should be used to create a visually interesting UI. This had been a challenge historically, due to many smart TVs not having the hardware capability to show off a lot of visually stimulating imagery within a reasonable amount of time, but thanks to technological advances in TV set design, there is no reason why TV UIs shouldn't aim to create the most visually compelling experiences available."

The TV remote was once a symbol of power both within the home and back at TV companies' headquarters. Whoever had control of it had ultimate control of viewing. This is no longer the case, says Dawes at TiVo.

"TV operators have for many years had control of the remote – their 'brand in the hand'



Massive: the TV UX needs to be optimised to different viewers, rather that treating the audience as one.

– for the whole viewing session. However, as new entrants have come to market, and most importantly have been easy to access on the best screen in the house – either directly through a smart TV or via a cheap streaming adapter – this position has been challenged. Once a user has strayed from your service it's hard to get them back," he explains.

"Therefore, having a user experience, like TiVo Experience 4, that can seamlessly integrate content from multiple sources becomes important for the operator in the retention battle. Having this kind of experience keeps the user within the pay TV world, allowing them to understand the value the service brings and ensure they are able to find what they want to watch at the time they want to watch it."

It also has to be remembered that there are now several distinct audiences for different content within a single household. In recognition of this, Ron Downey, CEO of Massive, says that the TV user experience needs to be optimised to different viewers, rather that treating the audience as one. "If a viewer isn't watching TV with others, why should they be offered the same viewing experience, content and promotions as everyone else?" he says. "Making this a reality is a bit more complicated than it sounds though. It depends on bringing three different areas together: the platform, the data, and the UI. Hitting this trifecta of video delivery is what's needed to offer a tailored user experience that can cater to different subsets of the audience and meet different tastes and preferences. It's a tried and tested route to make any pay TV or OTT service 'sticky', which naturally increases ARPU and reduces churn."

The decline of exclusivity

Exclusive content has always been the USP that linear providers have come to rely on, but all-rights deals are declining in importance now that so many TV platforms have added third-party services, including in some cases their old rival Netflix. Consequently, they've had to find new selling points and Smith-Chaigneau at Nagra reiterates that what will become increasingly important is being able to step seamlessly between different user interfaces.

"As it stands in the OTT landscape, consumers are having to step in and out of different interfaces, through apps on different devices. This is not how content consumption is best served to the consumer," he says. "A non-siloed approach that provides consumers with access to all content in one place with a global and unified search capability that makes for a seamless experience is what should be delivered."

Linear broadcasters' main advantage over their OTT counterparts is that they have full control of their signal. Content may not be as exclusive as it once was, but the quality and desirability of that content can differentiate one pay TV operator from another, points out Håkan Tranvik, co-founder of Magine.

"Content is still king and even though you could say exclusive content deals have a declining value for pay TV platforms, it is still quality content that a consumer pays for and it is important to have prime content available in the service – sports, TVOD, latest TV series whether it is in own packaging or from a third-party service.

"A reliable video signal, whether it is SD, HD or 4K, is also part of a general user experience, and from that point of view the pay TV platforms still have an advantage. OTT services can seldom fully control their signal end-to-end as they need to rely on the broadband delivery from another party."

Quality of service is what sets linear operators apart from OTT providers, agrees Isla Sutherland, head of product at Freesat. "A key differentiator for us is the amazing reliability of satellite," she says. "There's a good level of tolerance around the on-demand viewing for content buffering, but when streaming live TV over IP introduces a few seconds lag, moments such as the penalty shoot outs at the FIFA World Cup and hearing neighbours celebrate a few seconds before you, have shown us that 'not quite live' experience isn't always good enough."

Ease of content discovery is another way that TV operators can differentiate themselves from the competition. If the EPG allows the viewer to clearly see both the operator's content and third-party content, viewers will be less likely to look elsewhere. Creating a consistent user experience, however, is complicated by the fact that many people in a single household consume TV content from a single entry point on many devices.

"Creating a consistent user experience that can deliver 'multiple access points' e.g. via a simple menu, an advanced EPG, app store or recommendations portal and other journeys to content like voice search, caters for the spectrum of tastes and age groups that want to use the TV 'their way'. Allowing for multiple journeys means users get the feeling that the experience is personally designed for them," says Smith-Chaigneau at Nagra.

With competition for audiences now so fierce, it's tempting to want to constantly tinker with your user experience. However, 'if it's not broke don't try to fix it' is a valuable rule to keep in mind too says Sutherland at Freesat. "While we'll always want to take advantage of new trends and technologies, being innovative for the sake of it is not going to make a great TV user experience. Some parts of the UX are almost best left alone. For example, a TV guide [EPG] that has worked well for decades. Even though we now have the ability to implement image-rich navigation, this is probably best left for on-demand box sets and movies, rather than live TV."

"The consumer experience or journey to the content they love should be as unobtrusive as possible."

Anthony Smith-Chaigneau, Nagra

UI's impact on marketing

By the time anyone is using a TV operator's service, they're normally a paid up subscriber, but that doesn't mean that the marketing team has done its job and can move on to the next potential customer. "While it's by no means the lead part of any strategy, the UX of a service does play a prominent role in marketing a service, given how it is the way that potential customers will first perceive the service," says Berry at Airbeem.

"It serves as a representation for the brand, and it becomes one of the most powerful pieces of marketing a service has. It doesn't matter

Akim Benamara, Head of Marketing and Communication at ABOX42 talks about why service providers are ideally placed to tap into the growing market for smart home functionality by offering simple-to-use services

How operators can drive new revenue by launching smart home services

In the service provider market, revenue margins are declining. According to Digital TV Research, pay-TV revenues will fall in North America by $12 billion, $566 million in Western Europe, and $28 million in Eastern Europe by the year 2022. Facing declining profit margins, service providers need innovative ways to increase their revenue streams, reduce churn, and attract new customers. Recently, smart home and smart living subscription services have emerged as a solution that can drive new revenue with minimal risk.

Relying on technology such as gateways and sensors, smart home services allow end-users to remotely monitor and control household systems. Through smart home services, consumers can check doors and windows, motion in the house, water leakage in the laundry room or near fish tanks, the temperature, and monitor the entire home through cameras.

There are several reasons why operators are in an excellent position to offer smart home services. They've already built up a significant subscriber base for other services, such as television, mobile, phone services and broadband internet, which means there is a group of paying customers to target. Furthermore, operators have established sales, installation and support teams, as well as a provisioning and billing relationship with subscribers. Smart home services can easily be added and managed under the same system. What's even better: Operators' existing presence in the living rooms of their customers means that they have built up credibility and trust.

The challenge is finding the best solution for profitability. Service providers need a smart home service solution that is affordable and can easily be bundled into their customers' subscription offering. The smart home service needs to be easy to sell, understand, install, and support, with a focus on minimizing service issues requiring customer care. Moreover, it's important that the smart home service solution is subscriber-friendly. It needs to provide a seamless, trouble-free installation process for end-users. Operators should also make sure that their customers can effortlessly subscribe to and use the smart home service.

Perhaps one of the biggest requirements is that the smart home service solution has proven business cases. Smart home services are still a relatively new concept to most operators. Partnering with an operator smart home service solutions provider with easy-to-understand value propositions and real-world use cases will help operators gain a greater understanding of how they can be profitable in the smart home services environment.

Get your individual Quick Look of ABOX42´s Operator Smart Home Solution and its business model from one of our experts and meet us at IBC 2018 in Hall 14, Stand G04. Make your appointment today at www.abox42.com

For its pay TV partners, Magine uses the same framework for IPTV boxes and mobiles.

how many slogans are deployed or however much is written about a service, users will make their judgement based on what they see of it way before they read and digest any text."

If you get the user experience wrong, churn will rise and the poor customer service will become a talking point – not just through word of mouth, but through social media where it could easily go viral. Bundling OTT content with regular linear content can also be used as a selling point by marketeers, who can demonstrate to the user the benefits of having all your content accessible from one central point. Crucially, linear TV operators need to be flexible so that marketeers can implement new user-experience strategies quickly.

"Newer user experience and content management platforms make it possible for small teams of schedulers and marketers to test, adapt, and evolve the front-end without needing to involve the engineering department at all," says Downey at Massive.

"It's a way to redesign the UX, introduce new content layouts, rebrand the service, and even completely flip the business model in response to changing demands. Marketers can also use platforms like this to push promotional up-sell campaigns to specific audience segments without needing to update the service via the set-top box or connected device," he says. "Underpinning all of this is a need to tap into usage data from subscribers. This supercharges personalisation efforts, making it possible to roll out real-time UX alterations based on what the audience wants to see. It's an approach that can also be used for identifying a segment of users that are likely to churn and tailoring promotions to prevent this, or increasing customer loyalty through more targeted content offerings."

What now for legacy boxes?

Many established TV operators have numerous legacy set-top-boxes deployed across their subscriber bases that don't have the capabilities of more advanced devices – a handicap in this competitive market.

"Tech development moves fast and it's not easy to stay competitive with old installed bases of legacy set-top-boxes. And, it is hard to create a comparable seamless media experience for set-top-boxes and TV-everywhere devices in parallel," says Tranvik at Magine "Magine Pro's experience from our pay TV operator partners is that the best insurance for the future is to build everything in the same framework for both IPTV boxes – with Android TV – and mobile devices. Then you have the ability to maintain feature parity on different devices and platforms and rollout of features would be cross device and platform, meaning all features will look and feel the same, regardless if it is a set-top-box or other devices."

If legacy boxes are up to date enough to work with cloud-based software, they will also be in a better position to compete with other operators, says Smith-Chaigneau at Nagra.

"Many of today's services are delivered in the cloud and are server-side bound. We have taken the PVR out of the STB and moved to nPVR. Other advanced services, such as catch-up, start-over and playback trick-modes are all now server-side based. The embedded software specialists once worked hard to ensure that low-power set-tops with little memory were able to function well. They created efficient software to allow for service overhead in the devices, but it was always a challenge for resources. However, the heavy-lifting that a set-top used to have to do is no longer the case, which makes many legacy in-the-field boxes able to be used for more advanced services."

Investing in advanced operator-controlled set-top-boxes should give operators more control over their Quality of Service and Quality of Experience and increase the longevity of the box, so it could pay off in the long term. Combined with a more complex remote control, a managed STB will provide much more functionality than a simple OTT device. Some operators are using the introduction of 4K to upgrade their whole service, points out Dawes at TiVo, and some are even letting customers use their own devices.

"Many operators have recently or are going through deployments of 4K television so they have the opportunity to roll out new hardware SKUs," he says, referring to Stock Keeping Units – the serial numbers that uniquely identify a product. "Some have chosen to remain with a more expensive box, but many are looking to take on the OTT players at their own game and either deploy cheaper hardware using new platforms like Android TV or moving to a model where the customer can bring their own device."

Get the user experience right and viewers will be automatically loyal to their box and the TV operator's service and one thing that viewers like about their box is its record function.

"The ability to record live TV has sat with traditional set-top-boxes and this functionality continues to resonate with users. Users want to record more programmes at once and to watch them back on any device, says Sutherland at Freesat. "Amazon's Frank DVR could potentially present a threat to this, though details on the exact experience are limited at this stage. And let's not forget the household without super-fast internet. This may sound a bit conservative, but all we need to do is wait for the internet to go down or find ourselves in an area with limited internet access or speed and we quickly realise the value of live TV," she says. "Yes, the reliability of broadband is increasing, but we'd be kidding ourselves if we said it was as reliable as satellite. This is simply something OTT players cannot offer at this stage."

Control the signal, provide the right content and make it easy to access anytime anywhere and 'traditional' TV providers should always be able to trump OTT. If they slip up on any one of these they will find their viewers looking elsewhere. ●

Q&A: Charles Dawes, TiVo

Charles Dawes, senior director, international marketing at TiVo, talks about voice control, Android TV and the importance of metadata for content discovery.

What features and functionality does TiVo's Experience 4 and its Next-Generation platform bring to the market and how do these address the evolving needs of pay TV operators?

Experience 4 is the latest iteration of the award-winning TiVo user experience that is used by millions of customers around the globe. In fact, this version has recently been honoured by ITVT as the Most Innovative User Interface for 2018. Along with natural conversational voice control and hyper-personalisation for faster content discovery, it provides the unified customer experience that today's pay-TV subscriber is looking for, bringing together their key entertainment sources from broadcast, DVR, VOD and OTT together in one consistent interface that is simple, elegant and a pleasure to use. It is powered by TiVo's Next-Generation Platform, a flexible, diversified portfolio of products supported by a cloud-based, scalable backend that allows the operator to make the transition from a legacy broadcast model to a hybrid model and on to a full IPTV deployment.

What is the appeal of Android TV as an operating system for pay TV operators and how significant a presence do you believe Android will have in the market?

Google has been continuously listening to operators and, with Android TV's Operator Tier, it has addressed concerns around security and control. Android TV is highly attractive to operators for a number of reasons. In addition to being able to address a wide range of devices that consumers can access content on, the OTT ecosystem available through Google Play brings together thousands of apps that operators can instantly tie into. These, together with a more cost-effective set of hardware and developments from Google to make Android TV Operator Tier more in tune with the user experience ownership requirements of many operators, means that Android will, in TiVo's view, form a key platform in the pay TV ecosystem for many years.

How can technology companies such as TiVo add value to the Android TV ecosystem?

TiVo can bring its expertise, continuous innovation and rich heritage of providing comprehensive pay TV solutions to help operators deploy future-proof systems that utilise Android TV as the operating system on their set-top box. As content choices grow, so does the need for a superior, differentiated and consistent user experience flowing across all client platforms. TiVo's cloud based, agile service provides built-in metadata across content, industry-leading search and recommendations including spot-on predictions across content sources and clients, as well as end-to-end service management and control tools for provisioning, diagnostics and analytics. The TiVo service is pre-integrated with VOD, DRM systems, OSS/BSS back-office and Network DVR systems and provides common APIs across clients, thereby making it easy for pay TV operators to manage the key aspects of their ecosystem and ensure that their deployment of Android is kept up-to-date as Google releases feature and security updates.

How much growth are you seeing in the use of voice as an interaction mechanism and how is TiVo's voice discovery solution evolving?

As we had always believed, voice is becoming a large part of the daily life of consumers in many markets. At TiVo, we have continued to develop our roadmap, adding new languages, including German, Italian and Portuguese, this year alone to support customer launches and needs. In TiVo's most recent Quarterly Survey[1], it has seen respondents report that they use a true conversational voice interface such as TiVo's over 24 percent more than more basic systems. It has also seen customers such as Sky make voice control a standard part of their premium Sky Q platform in 2.7 million homes across the UK[2], signalling an opportunity for rapid growth.

How is the generation and use of metadata evolving in order to deliver better content discovery?

Metadata continues to be the fuel of the content discovery engine and, as we see increasing adoption of systems that utilise voice as an input, we are seeing a continued demand for ever richer information about entertainment content. A good metaphor for this is an iceberg. There is a small, but important, amount of information above the waterline that is seen by the end user, however there is a much larger set of information that is not seen by the customer but is crucial for the advanced search and recommendation systems in use today. Much of this information is now created by using Machine Learning and Artificial Intelligence based systems like TiVo's entertainment technology graph as the scale of the task can be too much for human editors to undertake in a cost-effective model. TiVo is a leading supplier in this area, uniquely combining human expertise (i.e, on nuance) and machine speed and automation to provide this information to its customers at the scale they need to power their entertainment systems.

[1] TiVo Quarterly Pay TV Survey – Q4, 2017

[2] Sky Q4 17/18 Results Press Release

Visit TiVo at IBC – Hall 5 Stand A31

Facebook Watch faces stiff competition. On the one hand, there is the high-end and highly bingeable fare found on Netflix. On the other, YouTube is already home to a new generation of social superstars and is also investing in content for its YouTube Premium service.

Facebook Watch goes global

Facebook rolled out its Watch platform globally at the end of August, stepping up its efforts in an increasingly competitive online video space. But how hard will it be for the social media giant to compete against its FAANG peers like Netflix, YouTube and Amazon?

Since Facebook launched Watch in the US a year ago, it has stressed that the platform is as much about interacting with friends and fans as it is about discovering video content.

"Over the past year, we've made the experience more social – like making it easier to see which videos your friends have liked or shared, creating shows that have audience participation at their core, and opening Watch to videos from Pages," said Facebook's head of video, Fidji Simo.

This is part of Facebook's broader efforts keep users engaged. In January the social network announced a "major change" to its news feed, placing more focus on personal connections and de-prioritising posts from businesses, brands and the media.

Speaking on the company's first quarter earnings call in April, CEO Mark Zuckerberg explained that the move was a deliberate effort to steer users away from "passive consumption to encouraging meaningful interactions" – even when watching video.

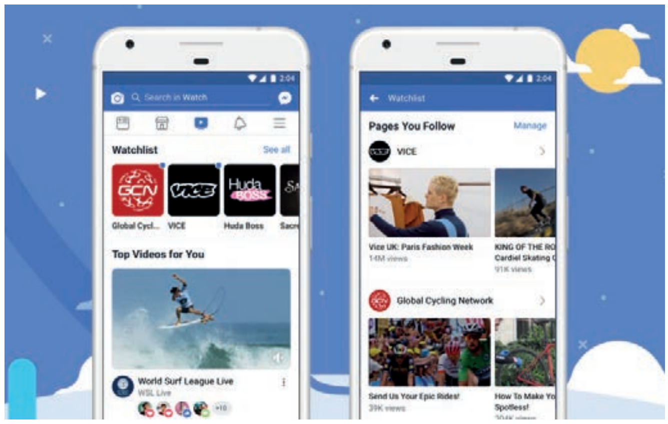
This year the company has launched interactive video features like Watch Party, which lets users view videos with their friends. Meanwhile, Facebook Watch's aim has always been to provide a space for users to connect with people that have similar interests.

Last year Facebook CFO David Whener said on a company earnings call that Facebook is "investing aggressively" in video content to support its Watch tab, while Zuckerberg elaborated that this spend will go towards 'lighthouse content' that is "centred around things that people want to talk and connect around, that give people sense of pride and bring people together."

Among the already popular Watch content that Facebook highlighted for the global rollout was: Jada Pinkett Smith talk show, *Red Table Talk*; beauty mogul Huda Kattan's behind-the-scenes show *Huda Boss*; and live Major League Baseball games.

Sport is a key focus area for Facebook and has ready-made fandom that it can tap into. Earlier this year it appointed Eurosport CEO Peter Hutton to help secure live sports rights and in August it landed free-to-air rights for UEFA Champions League live matches across Spanish-speaking territories in Latin America from 2018-2021.

However, sports is an area where other online giants are also starting to play, with Amazon recently taking some Premier League and US Open Tennis Championships rights, and YouTube doing a US deal with the Los Angeles Football Club to broadcast the team's locally televised matches via YouTube TV.



On the entertainment front, Facebook hired the former head of BuzzFeed Studio, Matthew Henick, in March to lead global video content strategy and planning. The company said this week that it is also expanding its 'ad breaks' programme so that more partners can make money from their videos.

While this will be tempting to content creators interested in using the Watch platform, whether it will be enough to tempt them away from YouTube, where many careers have been made, is yet to be seen. The same question hovers over IGTV, Facebook-owned Instagram's long-form, vertical video service that went live in June.

"Every month, more than 50 million people in the US come to watch videos for at least a minute in Watch – and total time spent watching videos in Watch has increased by 14-times since the start of 2018," said Simo of Facebook.

However an independent study released by The Diffusion Group in August claimed that Facebook Watch "continues to face significant challenges regarding feature awareness and use," with 50% of polled US Facebook users having never heard of Facebook Watch and a further 24% saying they had heard of it but never used it.

Facebook Watch faces stiff competition. On the one hand, there is the high-end and highly bingeable fare found on Netflix. On the other, YouTube is already home to a new generation of social superstars and is also investing in content for its YouTube Premium service, which it launched in 17 countries across the Americas, Europe and Asia in June.

What Facebook does have on its side is enormous scale and considerable resource. The social network currently has 2.23 billion monthly active users and in its most recent quarter generated revenue of US$13.2 billion (€11.4 billion) and net income of US$5.1 billion. If anyone can make a go of a new social video platform, it's Facebook. ●

Q&A: Hermann Riedl, WIND Hellas & Patrick Vos, Zappware

WIND Hellas Chief Strategy and Digital transformation Officer Hermann Riedl and Zappware CEO Patrick Vos talk about the development of WIND's innovative new hybrid IP and DTT, Android TV-based TV service

What was WIND Hellas aiming to achieve by developing its TV service?

HR WIND is one of the biggest fixed-line operators in the Greek market and had so far been the only one without a pay TV service. We needed a service that would differentiate us. We saw that providing an advanced user experience and meaningful integration with OTT TV services presented a key opportunity. Zappware proposed the best solution to meet these needs within a very aggressive timeline. We knew that the opportunity would not last forever. We launched WIND VISION with the latest digital TV features such as catch-up TV and multiscreen, and were also the first to integrate Netflix. We are the first Greek operator to have Android TV with a huge wealth of functionality for our customers including voice search, Chromecast integration, Bluetooth and a gaming console, and tons of apps, all at zero cost to us. It is a world apart from what the legacy platforms have to offer.

What were the key challenges in delivering the service?

PV Most Android deployments are pure OTT services. This service is a hybrid DVB-T and OTT offering. What WIND understood from day one is the need for the aggregation of content and functionality across devices, all based on a single, seamless UX. Viewers want to be able to see all content on HDMI1. In implementing this we provided our back office running on Amazon Web Services, and our new Nexx4.0 user interface running on Android TV on a hybrid set-top box. We got the green light to go ahead with the project last March and the first boxes for user trial and testing were available in January, so that means we had nine months from scratch to test and build a headend, dishes, the back-office in the cloud and set-top boxes ahead of a full trial in January leading to a commercial launch at the end of April.

HR We had some changes during the project. We didn't know initially if we would launch with Netflix. We acquired sports rights that come with special conditions in terms of rights management and concurrency in the CDN. We deployed lots of new technologies. Only 10 or 11 operators have launched Android TV in Europe before us, and even fewer have deployed a hybrid solution. The ABR unicast system is very future-proof and safe but not many people have delivered ABR unicast live streams to the set-top box. Our WiFi deployment is very successful. More than half our boxes are being connected to WiFi and it works. That is the power of a unicast solution. We are really using the latest technology to make an impact.

What benefits did Android TV provide for WIND?

HR The UI embodies our proposition of combining all free-to-air channels with Netflix, YouTube and Google Movies, all as one experience. WIND VISION customers have all the Android apps available at the touch of a button. We didn't even need do our own transactional VOD offering. On Android TV users have Google Play movies without need to provide minimum guarantees but with the advantage of carrier billing. It is an advanced service with features that we would never have developed on our own. I have access to the best SVOD service in the world and TVOD as well. On the other hand we also have unique content with Greek channels that are not offered by any of the pure OTT players, and pay TV channels, all delivered via one EPG. The overall technology solution was provided end-to-end by Zappware – and the outcome is excellent.

What did providing an end-to-end solution mean for Zappware?

PV It was very advantageous for us because we could make the best vendor selection to meet a very aggressive timeline. Normally we provide the complete UX from device to billing, but in this case we provided all the logistics of video delivery end-to-end. That gave us the opportunity to manage the whole ecosystem and that deliver a great UX. We chose Android TV from day one and moved the back office into the cloud based on AWS with micro-services to add new modules. In this fast evolving market, if you need to add features to the UX, you need a dynamic back office. Basing this in the cloud provided scalability and ease of operation and deployment of new features. The result is a very nice product as it stands, but the foundation is also there to keep up with fast-evolving trends in the future. Taking on this responsibility was also a journey that brought additional value to our proposition in the market.

What has the service been received in the Greek market?

HR WIND VISION is the talk of the town in Greece at the moment. As WIND was the coming in as the number four player in the pay TV market, people had not expected something like the experience we provide, including Netflix and an iconic set-top box design, with WiFi as an option and everything else. We organized a huge launch event and showed we were producing something that would disrupt the market. WIND VISION has made a big impact and has been a game-changer for our whole brand.

IBC 2018: the preview

This year's IBC exhibition will take place at Amsterdam's RAI from September 15-19. *Digital TV Europe* takes a look at some this year's technologies.

Accedo

STAND 14.E10

WHAT'S NEW?

Accedo Service Management Solution; Accedo Data-Driven Video Solution

WHAT DO THEY DO?

The Accedo Service Management Solution, comprises a set of defined packages addressing specific needs, such as platform refresh, service migration, and service launch, all supported with a global SLA. The Accedo Data-Driven Video Solution enables video service providers to present viewers with a personalised video experience through the analysis of their preferences and viewing habits. The solution is powered by the Accedo On video experience platform and the business analytics solution from technology partner Jump. Accedo and Jump have launched the first set of Data-Driven Video Solution packages, focusing on issues such as customer churn and content performance. Accedo is also demonstrating a proof of concept to improve the VOD on-the-go user experience. The new video UI has been designed for one-handed use, suitable for viewing content on the train or in other on-the-go scenarios.

CONTACT

www.accedo.tv

Broadpeak

STAND 5.B78

WHAT'S NEW?

nanoCDN Multicast ABR Solution; Cloud PVR

WHAT DO THEY DO?

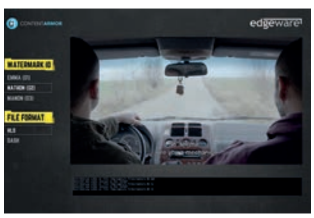
Broadpeak says its nanoCDN Multicast ABR Solution boosts QoE, minimises bandwidth, and decreases latency. At IBC, the company will demonstrate its nanoCDN multicast ABR solution, which makes live HTTP video delivery to any device scalable by turning broadband gateways, cable modems, Wi-Fi routers, and STBs into active components of an operator's content delivery infrastructure. Leveraging home networks, operators can manage the consumption peaks of live multiscreen services for millions of simultaneous viewers using only a few Mbps from their network. Broadpeak will demonstrate innovative new features for nanoCDN, such as Common Media File Format (CMAF) and chunked transfer encoding support to further decrease latency for OTT live streaming. Following a record year of deployments worldwide, including several tier-one operators, the Cloud PVR from Broadpeak will be a key highlight at IBC. Providing operators with a solution for delivering time-shifted TV services, Broadpeak's solution enables subscribers to launch multiple recordings on various channels simultaneously without any constraint on the available bandwidth or the number of tuners on the reception device, the company says. With Cloud PVR, service providers can deliver start-over and catch-up TV, as well as impulsive recording, using a shared or private copy model. The recorded content can be processed on the fly to be viewed on any device type. At IBC, Broadpeak will also introduce new features of its nanoCDN solution for satellite, which allows operators to deliver a true OTT experience while preserving the quality of traditional satellite distribution. The company will also demonstrate its origin packager complemented with video delivery analytics, which enables content providers to deliver secure live, time-shift TV, and VOD services to any device.

CONTACT

www.broadpeak.tv

Edgeware

STAND 14.F20



WHAT'S NEW?

OTT ad personalisation; forensic watermarking

WHAT DO THEY DO?

Edgeware will be presenting its Ad Enabler solution which allows for the personalisation of ads during live OTT, live-to-VOD and time-shift TV services. It supports HLS, for delivery to Apple devices, and MPEG-DASH for Android devices – making Edgeware one of the first to support live server-side, OTT ad insertion to the operating system, according to the company. Ad Enabler uses frame-accurate segmentation to pinpoint moments within TV programming. Edgeware's ad stitching solution detects these markers and through an integration with Yospace and a VAST-compatible ad decision server, fetches the personalised ad and stitches it into the content stream. The TV programming and the ad is then streamed from Edgeware's TV server to viewers. Deploying this server-side solution creates ad insertion for a more personalised viewing experience for audiences. Also on the stand, Edgeware's TV Watermarker will show content distributors how they can protect their programming. TV Watermarker uses a bitstream-based solution which can be used on-the-fly by Edgeware's TV servers as they stream content. The demonstration will show how the solution encodes a visual code into the programme's image which is unique to each viewer and much harder for pirates to identify or change than other manifest-based solutions. If a stream is illegally redistributed by an unauthorised source, TV Watermarker can identify the pirate within 15 seconds. These technology demos are part of the beyond broadcast experience that Edgeware is presenting at IBC. With more people than ever choosing non-broadcast ser-

The role of pay TV as the traditional aggregator of content is under pressure and there is plenty of evidence of the inevitable re-aggregation of content under different banners; Apple, Amazon, Netflix et al. However, consumer habits are changing and, enriched by the diversity of fragmented offerings, disaggregation may yet have a significant impact, says Joe Foster, CEO and co-founder of Easel TV.

Why social media may be OTT's best friend

In June 2012, not long after we started building what we saw as white-labelled online cloud TV and entertainment services; better known these days simply as OTT services, I was sat in our offices with Tom Rogers, the then CEO of TiVo.

Tom was fascinated at the All3Media direct-to-consumer service we had just released to the market on Samsung smart TVs in the US and the UK. We had also just done Spotify on TiVo in both the US and for Virgin Media in the UK.

Tom got what we were doing, but at the time he wasn't convinced. His point was that consumers ultimately decide because they are the arbiter of business case success and would not condone regression; as he saw it a then independent British TV production house going direct-to-market broke with benefits of one simple holistic journey within a common UI.

The All3Media app involved content fragmentation in both the service offering and user journey. In his view, it introduced the painful concept of searching for apps for individual pieces of content. Furthermore, it seemed logical that the economies of scale would dictate that packaged bundles would remain better value than individual subscriptions or app purchases.

But now, cord-cutting has already challenged the bundle, and social media means content discovery and app adoption is no barrier; the world has changed.

Generation Z and the trouble with packages.

You can't argue with Tom's first point – the consumer is indeed the arbiter of business case success. But the problem with packages is that while they give you what you want, they also give you a lot of what you don't want.

The current Virgin Media-UKTV dispute is perhaps a case in point. Where once broadcast – free or pay – was the only source of content, whether you wanted it or not, now we have OTT.

UKTV Play is not only a fully branded standalone source of all 10 UKTV channels' content, it offers the consumer the benefit of anytime viewing, box-set binging, watching shows before they are broadcast and personalisation through a playlist of 'my shows' and sharing your experience on social media. And it's free on a multitude of devices.

TV packages matter when entertainment is based on channel brand, but not when it is based on content; e.g. film, series, lifestyle, etc.

Generation Z get this. They share content, not channels. They adopt apps via a click from a social media recommendation. They time-shift common experiences through viral trending timelines that play to on-demand formats. And most of all, they decide what is a success by collective adoption – they are they arbiters of sustainable business.

YouTube to YourTube

YouTube channels can spring up overnight. They are global and, through social media, attract big audiences. They offer free global hosting of HD video, good analytics, advertising and subscription tools.

Perhaps YouTube – and Netflix, Apple and Amazon – will become Tom's holistic unified UI channel aggregator of the future. But I don't think so – at least not as it stands. Whilst the latter seek to corner OTT mainstream viewing, YouTube targets OTT's long-tail, but has its limitations. YouTube (Facebook, Twitter) are not a natural home for long-form content. They also have content protection, brand ownership and positioning issues, and what earning potential there is drains off into Google's coffers. There is too much loss of control of data, brand dilution, and too much revenue being demanded. Too much of the ownership of product and consumer is being lost.

It makes more sense to use YouTube and social media platforms as generators of *audience*, leading to OTT destinations that convert them to *customers* where income can be derived in multiple ways without restriction – subscription, in-app purchases, advertising and sponsorship. Within these destinations, the proposition can be developed via the operator's own brand journey, with rich menus, collections, and playlists driven by their own editorial and scheduling objectives.

Successful disaggregation

My view of the consumer as arbitrator of entertainment success is that they will also pick and choose what they want to pay for – sports fans, people with a lifestyle compulsion, those interested in food, fashion, festivals, and so on. And if the content owners, from studios and production houses down to individual celebrities and chefs, can make more money and create brand communities, then disaggregation and fragmentation may win out.

However, disaggregated services aren't just about building a website or an app. That's a long way from creating an OTT service that is administered via cloud systems that allow full editorial, scheduling and publishing of the OTT channel across all devices, taking payment, inserting video and banner adverts, registering users, presenting detailed analytics spanning top grossing sales and individual consumer views, and reconciling wholesale billing of acquired content.

And of all the facets of a good OTT service, the most imperative is to enable the publishing and sharing of content on social platforms, provide marketing tools for promoting the content as a destination and measure audience response to optimise marketing spend and enhance audience value in order to reduce churn.

vices for reasons of convenience or higher-quality, content owners and distributors need to deploy a distribution workflow that enables them to take advantage of internet-delivered means to deliver an experience that surpasses traditional broadcast, according to the company.

CONTACT
www.edgeware.com

Globecast
STAND A.129

WHAT'S NEW?
Globecast Digital Media Hub for sports and live events

WHAT DOES IT DO?
Globecast is launching its new Digital Media Hub suite of services for sports and live events. By aggregating multiple virtualised technologies into a single ecosystem, the Digital Media Hub allows a live feed to be treated in multiple ways to create content suitable for cross-platform use, in both real-time or for use at a later date. The live feed can be used for linear playout or to stream to live platforms of the rights holder's choice, including social media or websites. Using the same live feed, content can be manually or automatically clipped, edited, metadata attached and shared, either short or long-form. For example, highlights clips can be shared on social media or packages created for OTT platforms. All the clipped content is then made available via a Marketplace Platform in multiple formats/different sizes – including at broadcast quality – and branded using customers' guidelines.
This platform facilitates content exchange between relevant parties. Digital Media Hub has been developed in conjunction with a number of rights holders with services already having been used by them, according to the company.
Globecast will also be showing its newly enhanced, fast set-up content distribution solution over public internet technology, GCXN.
In the latest version, Globecast has expanded the flexibility of the service via additional customer premise connectivity options. Customers can use Globecast-supplied Net Insight technology, or they can now use OEM alternatives. In addition, operators can now access GCXN via the cloud using a virtual internet transport application.
GXCN has also been updated with new multi-acquisition capability, allowing customer connection via two ISPs concurrently, providing an enhanced level of redundancy.

CONTACT
www.globecast.com

Limelight Networks
STAND 5.B52

WHAT'S NEW?
Real-time streaming solution

WHAT DOES IT DO?
Limelight will carry out live demonstrations of its new WebRTC-based real-time streaming solution that lets content providers deliver interactive live broadcast-quality streaming experiences from anywhere in the world, to anywhere in the world, with less than one second of latency, according to the company.
Limelight says that its edge cloud platform provides a combination of global private infrastructure, intelligent software, and support services to enable current and future workflows. The company will also highlight enhancements to its online video platform, including a powerful new user interface and simplified media management capabilities, and integrated on-the-fly Digital Rights Management that it says simplifies the encryption and delivery of content in all popular DRM formats.

CONTACT
www.limelight.com

Make.TV
STAND

WHAT'S NEW?
A new version of Live Video Cloud,

WHAT DOES IT DO?
Make.TV says it will demonstrate its complete solution for broadcasters and publishers of all sizes to acquire, curate, route and distribute hyper-local live video sources from anywhere in the world to any destination. Make.TV's technology is used by news, sport, entertainment and eSports providers including Major League Baseball, ESL Gaming, Fox Sports, NBC Universal, MTV/Viacom and Warner Bros. The Live Video Cloud opens pathways for video to be shared between content creators, producers, programmers and advertisers with scale, speed and relevance previously not possible. It makes it easy to get breaking news content quickly, handle remote production and deliver localised content across broadcast, online and social media networks.

CONTACT
www.make.tv

Piksel
STAND 5.C80

WHAT'S NEW?
Fuse Metadata Manager updates

WHAT DOES IT DO?
Piksel has announced updates to Fuse Metadata Manager to allow customers to leverage metadata across their entire ecosystem, according to the company. Piksel says that Fuse Metadata Manager puts metadata at the heart of the business to address issues caused by legacy systems. By improving integration of broadcast and linear workflows, reducing reliance on manual process and avoiding duplication, businesses can better organise their back office to improve agility and deliver better services, says the company. Updates to Fuse Metadata Manager include: federation of multiple sources of metadata to visualise metadata in a single place; improved search, validation and conformance; increased quality and depth to unlock the potential of archived content; Machine Learning (ML) capabilities to enrich metadata intelligently and at scale. This update follows the recent announcement of the Piksel metadata ecosystem, bringing together a range of vendors across Europe to deliver advanced recommendations and content discovery functionalities to customers.

CONTACT
www.piksel.com

Verimatrix
STAND

WHAT'S NEW?
RightsConnex; StreamMark Live; Verspective Intelligence; Verspective RT; Veriteem; Vtegrity

WHAT DO THEY DO?
Verimatrix will be showcasing its newly renamed RightsConnex workflow solution (formerly known as Federated Rights Management) for distributing OTT content between content owners and video service providers. It is a secure, hierarchical distribution method that features a single point of integration for operators and content owners, according to the company, that streamlines

Magine

Q&A: Matthew Wilkinson, Magine Pro

Matthew Wilkinson, general manager at Magine Pro, talks about opportunities and challenges facing new entrants in the OTT TV market.

How much opportunity is there for new entrants in the OTT TV market and what are the key things that operators need to focus on in order to succeed?

We now see consumers subscribing to three or more OTT services, and although they are the smallest, they are also one of the fastest growing segments in the market. For new OTT service entrants, it's a great opportunity to grab the number three or even four spot next to the OTT streaming incumbents such as Netflix, HBO, and Hulu.

Content is arguably the driving force behind this growth. Original content, in particular, that's not readily available elsewhere, is one of the key reasons consumers sign up to more than one service. New OTT service entrants don't necessarily need to produce original content to attract subscribers though. They could explore securing rights for local or regional content that is often overlooked or not being widely distributed.

It's also important they carefully consider their monetisation model and whether it's suitable for their content and target audience. To build a sustainable OTT business, you need a clear strategy with prudent expectations of consumer pricing acceptance and service uptake.

What are some examples of potential new OTT TV markets that are currently underserved?

As viewers consume more and the move away from traditional viewing habits to OTT services, content owners have a golden opportunity to capture dark & niche markets.

Consumers are being offered a barrage of generic services that target mass audiences and offer broad programming type. However, there are niche segments that have appeal across global markets, populations and cultures. Lower tier sports leagues like American College Football, for example, typically have a wider and more loyal following, which are willing to pay a premium if it's not carried by legacy broadcasters or media distributors.

Content owners are also not limited to maximising the value of their content through distribution on traditional channels (local TV and satellite etc). They can expand their footprint and explore untapped markets by taking their content direct to consumer with their own OTT service. A significant dark market is local content for overseas expats & diaspora, where access to content via transitional means is either illegal and of low quality, or just not available.

What are the key features and functionality that OTT TV services need to succeed, from Magine's own experience of operating services?

Magine have over seven years experience operating direct-to-consumer services in Scandinavia and Germany. We leverage our experience and understanding of good UX/UI to build platforms that fulfill our B2B partner's needs, and provide exceptional experiences for their customers.

We believe a user-friendly service that heroes content and aids discovery is key to attracting and retaining users. Our templated solutions can be independently curated and managed by our partners, giving them full control over what, where and how their content is featured.

The user experience should also be seamless. Regardless of where or what device they watch on, subscribers should be able to enjoy high-quality streams without buffering or downtime issues. And local payment solutions that enable users to pay fees easily are also essential if you're operating a global service, and especially in emerging markets.

What challenges do operators face in breaking into the OTT TV market and what solutions are available?

To avoid getting lost in the crowd, new OTT entrants need a clear differentiator and value proposition. Trying to cater to all consumers can result in you catering to none.

We are starting to see a rise in niche OTT services for this reason. Our partners PassionFlix and True Royalty, for example, offer niche content that appeals to a smaller subscriber base, which is more loyal and dedicated than the general consumer crowd. And as they are able to target a very specific audience, their marketing efforts are much more effective.

Getting a new OTT service up and running takes time and can come at a considerable cost. At Magine Pro we help our partners overcome these barriers and provide a proof-of-concept Pioneer solution, alongside a full end-to-end Premium service that is proven, cost-efficient and ensures a quick time to market.

What business models make the most sense for operators looking to build a sustainable service offering?

Subscription-Video-On-Demand (SVOD) remains one of the most popular monetisation models for OTT services, as it ensures a steady recurring revenue and has a lock-in effect on users. At Magine Pro, we also promote hybrid models that blend SVOD/TVOD and/or AVOD to ensure no money is left on the table.

Monetising through Ads means OTT services can offer limited free content to users that are hesitant to pay a Subscription or Transaction fee upfront. Through upsell activities, these free users can convert to paying subscribers, increasing average revenue per user (ARPU) and the customer lifetime value.

security workflows with persistent encryption, policy definition and enforcement, and automates the consumption reporting process. Content providers can standardise distribution of valuable content with little incremental effort, and bypass the friction and inefficiencies that exist in today's workflows. StreamMark is a server-side watermarking service for premium over-the-top video services. Hosted in the Verimatrix Secure Cloud, StreamMark is inherently DRM-agnostic and is designed for adaptive bitrate streaming (ABR) protocols such as HTTP Live Streaming (HLS) and standard MPEG-DASH. StreamMark is available as stand-alone watermarking service, independent of CAS/DRM systems. For the first time, Verimatrix will also be showcasing its StreamMark Live solution, which is a real-time watermark designed for fast extraction during live events, such as sports. As the latest enhancement to the Verspective Analytics suite, Verspective Intelligence provides a 360° view across different network and device types to find patterns and anomalies that help service providers make more informed decisions about their audiences, content, consumption, and overall performance. Essentially, this is a more precise method of segmenting the subscriber audience based on how they engage with the service enables operators to better address potential problems and uncover upsell opportunities, supported by off-the-shelf and customisable reporting tools, says the company. Verspective RT is a real-time device-level analytics solution collects in-depth information about the subscriber experience and service perception on both managed and unmanaged networks. Verspective RT also supports real-time data export to third-party tools and in-house systems. Recently made available to the public, Veriteem is a distributed ledger technology that addresses security gaps in blockchain technology. The company developed the open source technology to build internet of things (IoT) applications that require a dedicated blockchain that features public access to data, yet securely manages contributions in order to prevent malicious behaviour. Veriteem is a building block upon which the Verimatrix Vtegrity IoT security solution can be applied to secure the services and associated revenue streams for the entire lifecycle of a device and application. Verimatrix will also be unveiling a new connected content marketplace model where content owners and service providers converge around a common cloud platform to efficiently and accountably exchange content.

CONTACT
www.verimatrix.com

Viaccess Orca

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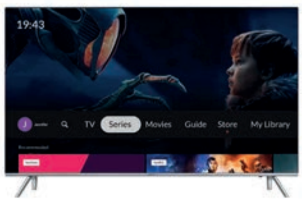
WHAT'S NEW?
TVaaS

WHAT DOES IT DO?
VO will showcase its end-to-end, cloud-based TV Platform as a Service (TVaaS), which is based on user interface from VO partners. TVaaS provides OTT and pay TV operators with a one-stop solution to deliver multiscreen services across any network, according to the company. The solution includes: a service delivery platform, the VO secure video player, a multi-platform player integrated with major DRMs for premium VOD and live content to enable a compelling viewing experience, apps, advanced analytics dashboards, a search-analysis tool and advanced advertising functionality. VO and its partners, SoftAtHome and Viznet, are also working together to offer an end-to-end addressable TV solution natively compatible with the various EU specificities, such as, integrating privacy and security by design under GDPR. A demo at IBC will feature VO's audience management capabilities, and in particular the ability to help operators monetise their TV data. VO is also bringing its next-generation suite of anti-piracy protection services to IBC, which the company says is designed to empower operators to combat illegal streaming on the web and collect legally relevant documentation to fight piracy.

CONTACT
www.viaccess-orca.com

Zenterio

STAND 5.C53



WHAT'S NEW?
Zenterio TV

WHAT DOES IT DO?
Zenterio will introduce Zenterio TV, described by the company as a one-stop-shop TV entertainment experience platform comprised of client software, UI, and cloud components. Offering pre-integrated, premium OTT content and apps, including YouTube, Netflix, and others, combined with support for DVB and IPTV, Zenterio TV includes cloud-based tools that are designed to make the client independent from the backend, allowing quick customisation and optimisation of content layout, UI, and content presentation, says Zenterio. Operators can create a tailor-made experience for viewers using the platform's content layout and editorial content tools. As an HTML and native application platform, Zenterio TV is designed for integration on high-end 4K and legacy customer premise equipment. Zenterio TV is pitched as an open alternative to Android TV but is also compatible with Android TV, as it can be delivered as an app. Zenterio will also demonstrate the various capabilities of its Zenterio Cloud solution, including content aggregation, business intelligence, and home automation. With Zenterio Cloud, operators can manage more content, digitise their TV business, and expand into home automation to improve ARPU, according to the company. Using Zenterio Cloud for content aggregation and presentation, operators gain the ability to provide unified search across all content, expand their content portfolio, gather user behaviour analytics, and control content presentation across screens. For business insights, Zenterio Cloud helps deliver higher ARPU through benchmarking, enabling operators to compare and improve user satisfaction and engagement over time, says the company. Pre-integrated with home automation systems, Zenterio Cloud enhances the user experience with voice search. Finally, Zenterio will showcase the advanced advertising tools developed by its subsidiary company, AdScribe. AdScribe works with Zenterio customers, other pay TV operators, and media companies to monetise platforms through the introduction of targeted advertising and content promotion. AdScribe gives its partners the capability to reach specific audience segments with new advertising inventory to drive new revenue streams and deliver incremental ARPU, according to Zenterio. AdScribe's toolsets and technologies are widely deployed and ship pre-integrated with Zenterio TV and Zenterio Cloud, according to the company.

CONTACT
www.zenterio.com

Q&A: Pablo Hesse, Teltoo

Pablo Hesse, CEO of Teltoo, talks about the rise of live-streaming and the challenges of delivering mass-audience events over the internet.

What major changes in consumption of TV do you believe will have the biggest impact on the business in the next couple of years?

We will see the biggest impact in live TV. Right now, it is the fastest growing market segment, and it's full of opportunities. Online TV started as a VOD format because it helped to break an old paradigm: TV schedules. The same way MP3 and playlists changed the way we listen to music, VOD and streaming changed the way we watched TV. It created a revolutionary way of consuming content. Today we see how people watch VOD content on the go as if it was normal, when five years ago that sounded crazy. Now that VOD is mature, the entire industry is moving to an online TV experience that includes live content.

Live content represents a bigger challenge than VOD, but also new opportunities. We can now enjoy live events that were hard to watch before, and that allows us to satisfy an increasing consumer base all over the world. Sporting events, music festivals, industry events, education... we can reproduce all those experiences live, everywhere – and that is why live TV will be the biggest revolution in the next few years.

To what extent do you see live TV switching from broadcast to streaming?

TV will become a complete streaming experience. We have already changed the way we consume content. The internet redefined the rules, and now we want content immediately, everywhere and on all devices. Live content is one of the most demanded video formats, and it will be integrated into this new TV experience.

So, rather than thinking if that will happen or not, as industry leaders, we need to think how we are going to complete the move quickly while giving consumers a wonderful experience. Technology and infrastructure are always running behind demand and trying to meet it. It's time to get ahead and control this demand through innovative and scalable ways to give people the content they deserve in the way they demand it.

What are the key challenges in delivering live-streamed coverage of mass-audience sports events?

If you look at the live video streaming process chain there are several factors to take care of: capturing, encoding/transcoding, encryption, breaking down the files, caching, delivery – all in real-time. It's very challenging. But, preparing to meet mass audience levels is even more complex. Live streaming is relatively new, and there is still little data, so most companies over-provision their network, through multi-CDN strategies, to create enough capacity in case something unexpected happens. That strategy is not wrong, but shouldn't we be able to stream with the certainty that everything is going to work and scale when needed?

What needs to be done to overcome these challenges?

We must think differently. Go backwards and modify what has been used in the past. The internet was never designed to distribute video, so why not stop, take a moment to think, and try different ways of doing things? We have been using standard technologies for a long time, but isn't it time to move forward and embrace new ideas? It is challenging to innovate in an industry where millions of viewers expect the highest quality, but precisely because of that, we need to be ahead of the demand, instead of always trying to meet it.

Most of the companies we have the pleasure to talk with now have innovation teams tasked with creating a new way of thinking and doing things. A new way of defining what should be done. This is what we need in our industry to overcome these challenges.

What do you see as Teltoo's role in this environment and what are the key elements of your technology?

Teltoo is a new way of distributing content. It challenges the current way of thinking, and uses technologies that are completely reliable and, even better, completely scalable. Teltoo maximizes the current infrastructure that is in place, which means a benefit for all the stakeholders involved: consumers – better content; content owners – efficient delivery; and operators – network optimization.

The key element of Teltoo is how it complements the other technologies used in the video streaming chain, and how it enhances the whole viewer experience by reorganizing the way video is distributed. Teltoo provides full control, enormous flexibility, and will soon become an essential element in the video streaming toolbox.

Technology in focus

Infrastructure equipment and product news for digital media distribution

In Brief

LG expands webOS beyond the TV

LG has announced plans to expand its webOS platform beyond smart TVs, introducing it to new industries for the first time. Announcing the news at IFA in Berlin, LG said it has partnered with IT service provider Luxoft Holding to create the next generation of webOS. With the move it is targeting the automotive, robotics and smart home sectors. LG has deployed webOS in more than 60 million LG smart TVs and digital sign displays to date.

Roku signs up JVC to TV licensing programme

JVC will be the latest TV brand to use the Roku operating system, with high definition JVC Roku TVs due to launch in the US later this year. Shenzhen MTC joined the Roku TV licensing program, agreeing to build smart TVs under the JVC brand that use TV hardware reference designs and the Roku OS.

PlayStation VR sales reach three million

Sony Interactive Entertainment has sold more than three million PlayStation VR (PS VR) systems worldwide, according to official company stats. Sony announced the milestone figure along with the news that it has also sold 21.9 million PS VR games and experiences.

Panasonic and Samsung deploy HDR10+ firmware

Panasonic and Samsung are among the first manufacturers to support HDR10+ after the companies announced that they are deploying firmware for select 2018 TV models.

HDR10+ Technologies announced the news ahead of IFA. The joint venture company – set up by 20th Century Fox, Panasonic Corporation and Samsung Electronics – is responsible for licensing the technology and said that more than 80 companies have already applied or completed the licence programme.

The application process is available to content companies, display manufacturers, Blu-ray makers, set-top box manufacturers, and system-on-a-chip vendors.

The licence is royalty-free but a nominal administrative fee is applied.

"Panasonic is happy to announce that through the deployment of a firmware update, the majority of our 2018 4K models are now HDR10+ certified meaning that our viewers will be able to enjoy content even closer to the intentions of the filmmakers," said Toshiharu Tsutsui, director of Panasonic's TV business division.

Samsung Research America's vice-president of industry relations, Bill Mandel, said: "We are thrilled that the majority of our 2018 lineup will be fully certified for HDR10+."

"A standardised licensing process has allowed partners, including content creators, television and device manufacturers, to easily incorporate HDR10+ technology," said 20th Century Fox executive vice-president and managing director of the Fox Innovation Lab, Danny Kaye.

"We're encouraged by the interest of early adopters and an expanded HDR10+ ecosystem that will improve the viewing experiences for all audiences."

HDR10+ is an upgraded version of the HDR10 format that adds dynamic metadata to each frame of video. The HDR10+ licensing programme and logo are designed to ensure that HDR10+ compliant products meet high standards for picture quality within defined parameters.

Facebook acquires video start-up Vidpresso

Facebook has acquired Utah-based Vidpresso, an interactive live-video start-up focused on Facebook Live streaming.

While terms of the deal were not disclosed, the US tech press described the deal as an 'acqui-hire' that will see Vidpresso's small team move over to the social media giant.

In a blog post, Vidpresso founder Randall Bennett confirmed that the company will be joining Facebook effective immediately and said that Vidpresso will continue to serve its existing customers.

The company helps creators, publishers, and broadcasters create "great live experiences" with custom graphics, live polling and other features. Its partners include BuzzFeed, Turner Sports, TED and NBC.

"This gives us the best opportunity to accelerate our vision and offer a simple way for creators, publishers, and broadcasters to use social media in live video at a high-quality level," said Bennett.

"We've always wanted to build tools for everyone to create interactive live video experiences. By joining Facebook we'll be able to offer our tools to a much broader audience than just our A-list publishing partners. Eventually, it will allow us to put these tools in the hands of creators, so they can focus on their content, and have it look great, without spending lots of time or money to do so."

Vidpresso was founded in 2012 and has had, by Bennett's own admission, "a lot of false starts along the way".

Before focusing on social media broadcasts, the company first offered tools to help synchronise presentations with slides, then tools to help broadcasters put social media on TV.

Bennett said that the company's initial mission was to make video easier to author, easier to change, and customised per person, and claimed "we still haven't realised the full vision yet".

TiVo rules out major acquisition in strategy review

TiVo has said it is not looking to make a major acquisition as part of its ongoing strategic review, and instead highlighted the value of its product and IP licensing businesses.

Speaking on the company's second quarter earnings call, interim president and CEO Raghavendra Rau said that "while we're always open to strategic acquisitions that can deliver stockholder value, we do not believe, at this time, that utilising our capital for a significant acquisition would be the best way to deliver value for shareholders."

Instead Rau stressed the financial operations of TiVo's products and IP businesses and said that the company remains committed to developing "compelling and relevant solutions that can deliver value to our customers".

"With respect to the product business, it appears clear that there is a real opportunity in the marketplace for a well-scaled next-generation video products business, with good growth potential that revolutionises how we watch TV and effectively enables monetisation of the experience," said Rau.

TiVo currently has an installed base of around 22 million households and Rau said the company has a "great brand and platform" to power next generation entertainment experiences.

"Further, with one of the leading portfolios of intellectual property in the linear TV and OTT markets, TiVo also believes there are strategic opportunities for the IP business that will enable

the business to grow profitably in both existing and adjacent markets."

For the quarter to June 30, TiVo reported a 17% year-on-year decrease in revenues at US$172.8 million (€149 million). Adjusted EBITDA was down 36% to US$51.9 million.

TiVo announced in February that it had started to evaluate a "wide range of strategic alternatives" in an effort to achieve long-term value for shareholders. The firm said that "TiVo's stock price is at a level that the company and its board do not believe reflects the true value of the business".

In Brief

ProSiebenSat.1 revamps red button offering

ProSiebenSat.1 has rolled out a new red button offering for smart TVs in Germany, based on the HbbTV standard. The new portal offers full TV episodes and content, with the media library organised by topic into playlists. Smart TV users can access entertainment from the ProSieben, Sat.1, Kabel Eins, Sixx, ProSieben Maxx, Sat.1 Gold, and Kabel Eins Doku brands. Viewers of ProSiebenSat.1 services can also press the red button to access an entertainment feed of digital news and entertainment information while watching TV, with 'dual consumption' a focus of the new offering.

In Brief

Altice Portugal renews licence with TiVo

Pay TV service provider Altice Portugal has renewed its IP licence with technology outfit TiVo. Altice Portugal's Meo platform deployed Microsoft Mediaroom – subsequently sold to Ericsson – to power its IPTV service. TiVo became involved in a legal dispute with the Portuguese operator last year, alleging it had failed to pay certain licensing fees related to its interactive programme guide after Microsoft sold its TV unit.

Arqiva taps AWS for virtualised services

Arqiva has announced its first suite of virtualised media management services, covering playout, OTT managed head-end, and video-on-demand processing. Arqiva is using Amazon Web Services (AWS) to power the services, which are designed to let customers quickly trial, adopt and integrate new services on a short- and long-term basis depending on market demands.

ITV partners with Accedo for AI artwork project

UK commercial broadcaster ITV has partnered with technology outfit Accedo on a project that will see the video user experience company automatically generate targeted cover artwork for ITV. The project follows on from an Accedo prototype, which was developed using the Amazon Web Services cloud platform. Personalised thumbnails for content will be tested on a focus group of ITV viewers in a bid to increase engagement and stimulate consumption of ITV's content.

Virgin Media introduces download on TV Go app

Liberty Global-owned Virgin Media has introduced a new download feature to its Virgin TV Go app.

Users of the app will have the ability to download about 2,000 episodes of catch-up and on-demand box-sets from content providers including Fox, ABC and Comedy Central, as well as Virgin TV's collection of exclusive box-sets such as *Kingdom*, *Ash Vs Evil Dead*, *Magic City*, *Chaussée D'Amour*, *Good Behavior*, *Will* and *Imposters*.

The download feature will enable Virgin Media's Full House and VIP customers to watch shows on the go, following the update to the app.

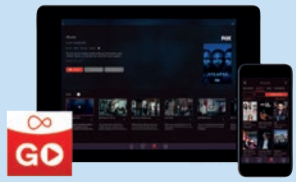
Customers can download shows over WiFi, 4G or 3G in the UK or countries in the EU. Any programme downloaded prior to leaving the UK or EU can be watched anywhere else in the world offline within 48 hours.

Other channels for which the download capability is available are Cartoon Network, Crime + Investigation, Food Network, History, Lifetime, Nickelodeon, Travel Channel, Nat Geo and Syfy.

Download capability is also available for the Virgin TV Kids app. Aimed at children aged three to seven, this enables users to download shows such as *Peppa Pig* and *Paw Patrol*, as well as books and games.

Both the Virgin TV Go and Virgin TV Kids apps are available for iOS and Android.

David Bouchier, Virgin Media's chief digital entertainment officer, said: "Whether it's bingeing on a box set on the beach or catching up on a comedy on a plane or train, our customers can download the best entertainment



on the box direct to their phones or tablets with the Virgin TV Go app."

Separately, Virgin Media in Ireland is due to launch its new Virgin Media Sport channel on September 18.

The channel, dubbed by the pay TV provider as 'Ireland's new home of European football' will broadcast Irish-produced coverage of the UEFA Champions League and UEFA Europa League.

Virgin Media Sport will be available to all Virgin Media TV customers at no extra cost and is due to air more than 400 live European matches this season.

BBC R&D looks to AI to help programme makers

UK public broadcaster the BBC's research and development department (BBC R&D) is developing Artificial Intelligence to help programme makers and schedulers unlock valuable resources from its extensive library.

The news arrived ahead of BBC 4.1 Artificial Intelligence TV bringing two nights of experiential programming including a series part-made by AI on September 4 and 5.

This line-up included new and classic programmes exploring AI, including *Made by Machine: When AI met the archive*, and *The Joy of AI*, which is partly made by it.

AI was also used to help discover a selection of hidden footage from the BBC's vast archive to be shown as part of BBC 4.1 AI TV.

The AI learnt what BBC audiences might like, based on the

channel's previous schedules and programme attributes, and then ranked programmes it thought were most relevant.

Doing this manually would be impractical as it would take hundreds of hours, but the AI gave BBC Four a more manageable selection in a fraction of the time.

This enabled researchers and schedulers to uncover programmes they may never have been able to find, and will broadcast a selection that haven't been seen in years.

As the BBC becomes more digitised, this is something BBC R&D is developing for across its content. Relevant clips retrieved by AI can be used to enrich news and factual programmes, for example.

Cassian Harrison, channel editor at BBC Four, said: "AI and Machine Learning sit at the centre of a huge ongoing debate. With its brief to experiment, BBC Four is grasping the nettle by the hand with this bold experiment to investigate just how AI might open up new creative opportunities. In collaboration with the BBC's world-beating R&D department, AI TV will explore the cutting edge of this new technology and demonstrate just how AI and Machine Learning might inform and influence programme-making and scheduling, while also resurfacing some gems from the BBC Four archive along the way. It's telly Jim, but not as we know it."

Kudelski sells STB and CAM businesses to Neotion

Content security firm Kudelski has agreed to sell its SmarDTV conditional access module (CAM) and set-top box businesses to Neotion for a cash consideration of US$20 million (€17 million).

The businesses will be transferred to SmarDTV Global, a new entity set-up by Neotion, when the deal closes – which is expected to be at the end of the month.

Kudelski retained its offices in La Ciotat, France and Steeton, UK, and all patents. Additional earn-out payments may be owed based on CAM and set-top box sales volumes in the period up to the end of 2021.

"This transfer of assets to a well-established player is part of the Kudelski Group's strategy to focus on core activities in which it has or will reach critical mass and profitability to fund on-going growth initiatives," said Kudelski chairman and CEO, André Kudelski.

"In this transaction, we are placing a lot of attention on preserving our customers' interests and ensuring their full satisfaction over time."

Neotion CEO Lionel Boissier said: "Neotion is strongly committed to ensure the continuity and the further development of both SmarDTV Global's CAM and set-top box businesses, including the further development of an innovative product portfolio for the benefit of SmarDTV Global's customers."

Kudelski's operating entities, Nagra and Conax, will continue to manage the commercial relationships with their customers for CAMs and will market and sell SmarDTV Global's CAMs in their respective markets.

A month before the deal was agreed, Kudelski announced it was opening a new Zurich office to meet demand for cybersecurity services and solutions on the German, Austrian and Swiss markets. The expanded staff includes professionals in security consulting, engineering, sales and marketing.

Since 2016, Kudelski Security has experienced solid growth in this region, adding clients and launching new managed security services, including Managed Endpoint Detection and Response and Managed Attacker Deception, which are delivered from the company's Cyber Fusion Center in Cheseaux-sur-Lausanne, Switzerland. Kudelski Security's expanded team in Zurich will provide German-speaking support in proximity to clients in the region.

InterDigital acquires Technicolor patent licensing

Mobile technology research and development company InterDigital has completed its acquisition of Technicolor's patent licensing business.

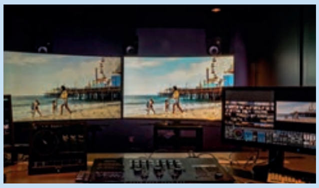
InterDigital paid Technicolor US$150 million (€130 million) in cash and under the terms of the deal Technicolor will receive 42.5% of future cash receipts, after operating expenses, from InterDigital's patent licensing in the consumer electronics field.

There is no revenue sharing associated with licensing to the mobile industry, though InterDigital will also grant back to Technicolor a perpetual licence for patents acquired in the transaction.

InterDigital has acquired approximately 18,000 patents across a range of technologies – including some 3,000 worldwide video coding patents and applications.

The portfolio will also be supplemented by a jointly-funded R&D collaboration, which will bring together the efforts of hundreds of engineers in InterDigital Labs and Technicolor Research and Innovation. Members of Technicolor's licensing, legal and other support teams in offices in France, New Jersey, and other locations join InterDigital's team of more than 300 R&D and other staff in eleven locations around the world.

"During the months that have followed the initial announcement, we've had the opportunity to meet and appreciate the tremendous capabilities of Technicolor's team and gain additional insight into the strength of the portfolio, which



strengthens our licensing efforts in the mobile field while opening new markets for InterDigital," said William Merritt, president and CEO of InterDigital.

"We've also been able to gauge the tremendous capabilities of Technicolor's Research and Innovation team, and the alignment between their research initiatives and our own in the video field."

Technicolor announced in March that it had agreed to sell the business to InterDigita for US$475 million.

In Brief

Kaltura launches targeted TV solution

Video technology provider Kaltura has launched a new Targeted TV solution that uses AI and machine learning to extend the capabilities of its Cloud TV platform. Kaltura Targeted TV uses artificial intelligence to segment TV audiences and offer tailored experiences that are designed to increase content usage reduce churn. The offering is aimed at pay TV operators, telcos, media companies and broadcasters using the Kaltura TV Platform.

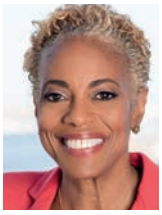
HTC set to launch wireless adapter for Vive headset

HTC is due to launch the Vive Wireless Adapter in the US in September, which will allow users to experience Vive virtual reality experiences without being tethered to a PC. The adapter is compatible with both Vive and Vive Pro headsets, though Vive Pro owners will need an additional compatibility pack with a connection cable, as well as foam padding and an attachment device.

Paywizard launches AI subscriber intelligenc

Pay TV-focused billing and customer relationship company Paywizard has launched an artificial intelligence-driven subscriber intelligence platform called Paywizard Singula. Singula is designed to let pay TV operators and OTT providers take a more data-driven approach to customer engagement by givng operators a view of subscribers at different stages of the customer journey to identify a 'next best action' to strengthen the customer relationship.

On the move

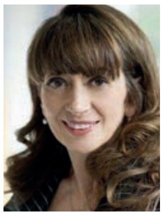


Netflix has hired an inclusion strategy expert to help eradicate barriers based on race at the company. **Verna Myers** has been named vice president of inclusion strategy. The news arrives after Netflix's former PR chief, **Jonathan Friedland**, was fired for making "insensitive" remarks in June. In the newly-created role, Myers will help create strategies that integrate cultural diversity, inclusion and equity into all aspects of Netflix's operations worldwide. For the past two decades, through The Verna Myers Company, she has consulted with a wide range of major corporations on how to help eradicate barriers based on race, ethnicity, gender, sexual orientation and other differences. Netflix has also appointed Facebook's vice-president of communications, **Rachel Whetstone**, as its new chief communications officer. Before joining Facebook last year, Whetstone was senior vice president of communications and public policy at Uber for two years from 2015. Prior to that she held the same role at Google from 2010 to 2015, having first joined the search giant in London in 2005. Finally, Netflix's chief financial officer **David Wells** is to step down after helping the company choose his successor. Wells joined Netflix in 2004 and has served as CFO since 2010. He explained in a statement that in the future he would like to focus on philanthropy and take on a "big challenge" but is not yet clear on what the future will hold.

Discovery has appointed Amazon executive **Peter Faricy** to the newly created role of chief executive officer, global direct-to-consumer. Faricy will oversee Discovery's global digital and direct-to-consumer businesses, which includes Discovery's GO TV Everywhere products, Motor Trend, Eurosport Player, Discovery Kids, Dplay and its forthcoming PGA Tour-branded OTT golf service. Reporting directly to Discovery president and CEO David Zaslav, Faricy will work with Discovery Networks International president and CEO JB Perrette on direct-to-consumer product rollouts across international markets. He is due to take up his new post on September 17, following a 12-year stint at Amazon, latterly as vice president for Amazon Marketplace. Before this he led Amazon's music and movies categories.

Viacom International Media Networks (VIMN) has promoted **Jesper Dahl** to general manager, vice-president for VIMN in the Nordics. Dahl, who first joined Viacom in 2005, is due to take up his new role on October 1, reporting to James Currell, president of VIMN in the UK, Northern and Eastern Europe. He replaces **Andrea Sahlgren**, who is leaving Viacom after 12 years to take a post at Nordic Entertainment Group (NENT Group), MTG's newly separated entertainment and studios business.

Liberty Latin America, the cable and telecom operator that split off from Liberty Global and which provides services across Latin America and the Caribbean, has named **Vivek Khemka** as its new chief technology officer. Khemka, whose full title will be SVP and chief technology and product offer, was previously EVP and chief technology officer for US pay TV outfit DISH Network. Liberty Latin America said that Khemka would lead its technology and innovation team across the regions in which it operates. The new unit has been tasked with driving IT, product development and network platforms across the 40 countries in which the company provides services to about 2.7 million customers.



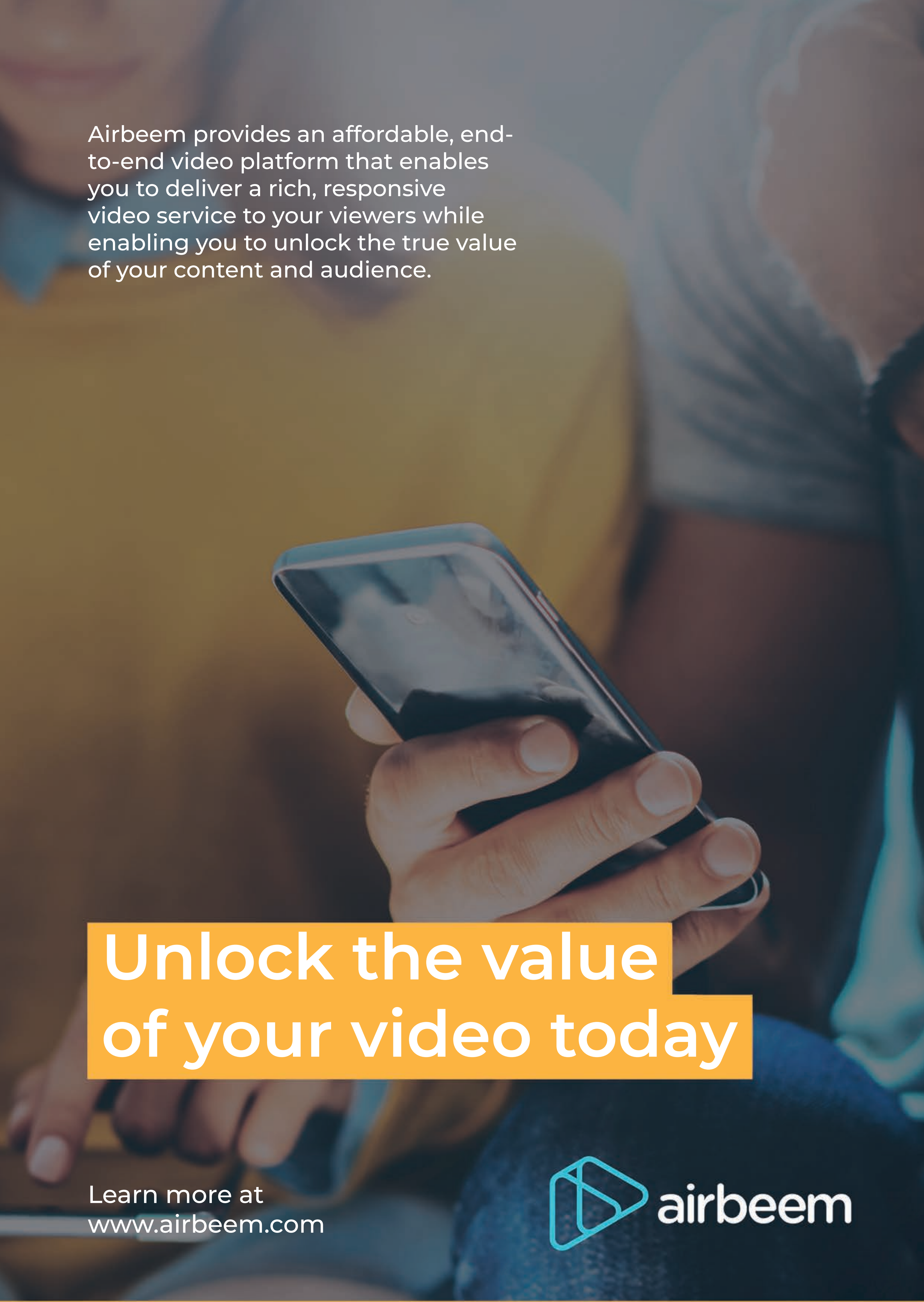
UK media and telecom regulator Ofcom has named **Luisa Affuso** as its new chief economist. Affuso joins the regulator from PricewaterhouseCoopers, where she is a director in the economics group leading the competition economics team. She has advised on a number of high-profile competition policy matters, covering UK and international markets and including cases relevant to the sectors Ofcom regulates, according to the watchdog. Prior to joining PwC, she consulted for organisations including the World Bank and European Bank of Reconstruction and Development, and worked as an academic at the University of Cambridge and London Business School. She will take up her post on October 8, replacing current chief economist **Peter Culham**, who is retiring.

Naspers has appointed the managing director of Ericsson's Nuvu on-demand service, **Niclas Ekdahl**, as the CEO of its recently formed connected video unit. Ekdahl is due to take up his new role on September 10, heading up the unit that runs the Showmax and DStv Now internet TV services in Africa and developing new over-the-top services for the MultiChoice group. He brings more than 19 years of experience to the role, including a number of years spent at MTG, latterly as CEO of Viaplay.

Telemundo president, **Luis Silberwasser**, is to depart the company after four years with the US Hispanic broadcaster. Silberwasser will stay with the company through to October 1 to help with the transition. During his tenure at Telemundo, Silberwasser helped change the programming strategy and the positioning of the network. He bet on new genres and formats, and focused on meeting the evolving tastes and demands of the new Hispanic consumer.

German cable operator Tele Columbus – which now operates under the PŸUR brand – has named **Dietmar Pöltl** as chief technology officer, following the decision of **Ludwig Modra** to leave the group. Pöltl comes to Tele Columbus from Germany's largest cable operator, Vodafone Deutschland, where he has served as vice-president of the service assurance centre with responsibility for mobile, fixed and cable networks since 2016. He was previously vice-president of central network and assurance management at Kabel Deutschland, subsequently acquired by Vodafone.

Please email contributions to: stuart.thomson@knect365.com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"Getting the scale and mix of businesses right-sized is the key to the re-invention of the media and telco business in the age of global platforms. Part and parcel with this is understanding and using data better."

The new media giants

We're currently in the middle of the latest round of media consolidation. It's a time when broadcasting and telco executives are sharpening their pencils and figuring out how much they can spend to buy the companies they need to stay in the media game.

There's a lot of talk about synergy and how scale is the best hope for legacy players like Disney, Comcast and AT&T to take on – and perhaps even topple – the tech giants. It's all because of consumption shifts with new technology, growing consumer choice and the move by Facebook, Amazon, Apple, Netflix and Google (the FAANGs) into video. All this is not so new, but the pressure has increased. Commissioning original content looks like an arms race, and it's not just the FAANGs that the traditional players are worried about.

The latest group of aggressive digital giants is from China and they are also coming to eat the lunch of traditional media players and telcos alike. The Chinese version of the Silicon Valley giants are Baidu, Alibaba and Tencent (the BATs). Together this trio has search, video, messaging and ecommerce pretty well wrapped up in China. Now they are starting to flex their muscles outside as well. For example, search giant Baidu owns nearly 70% of the Chinese version of Netflix, video platform iQIYI, which itself raised US$2.25 billion (€1.94 billion) in an initial public share offering in the US this past March and is now worth about US$20 billion.

Netflix's service is not allowed into China but on September 14 the video streaming giant will debut a 70-episode, Mandarin-language series in many countries outside of China. Co-produced with a group of Chinese companies including iQIYI, the series is called *The Rise of the Phoenixes* and is described by Netflix as a story of power, desire, lust and love among people from different kingdoms in ancient China, "all with the desire of rising to become The Great Phoenix". Sounds like a pretty good metaphor for the media business these days.

If the fightback by legacy media and telcos is all about synergy, then what exactly are we talking about here? Two areas really stand out. The first is winning or at least competing in the content arms race. If you own the IP, you can exploit it across whatever platform you want. The second is having a direct route to the consumer. As consumers move from big bundles of channels to taking a collection of apps, the power is with the brands that are relevant and responsive to their customers.

What is blaringly clear is that the traditional media model is under pressure. The days of selling territory to territory and relying on the broadcasters in any one country to fund a significant proportion of a series are harder and harder to find. Broadcasters and local pay TV operators want more rights for longer periods, including catch-up VOD and boxset rights. Yet often they cannot compete with the global tech giants who are able to pay much more for global rights in perpetuity.

Because of this, even some of the biggest producers are having to re-think how they do business. Endemol Shine and Fremantle have made their fortunes by coming up with format shows like *The Voice* and *Big Brother* that are re-tooled for different markets. But, with the growth of the FAANGs, this model looks, at best, less lucrative. Indies big and small are having to spend more to attract the right talent – both on screen and behind the camera – and they are also having to become more savvy about leveraging data as well as finding new ways of attracting money, including more directly from sponsors and advertisers.

Meanwhile the digital giants are only getting bigger and hungrier for original content and the growth area is content from outside of the US. According to Ampere Analysis, in 2016 some 23% of Netflix originals came from outside the US, while this year the figure is set to be as high as 45%. Similarly, Amazon's comparative number for non-US originated commissions went from 3% in 2016 to a predicted 11% in 2018.

Getting the scale and mix of businesses right-sized is the key to the re-invention of the media and telco business in the age of global platforms. Part and parcel with this is understanding and using data better. The FAANGs and the BATs are all born data-driven while legacy media companies and even telcos are still learning about data. From commissioning to better selling of advertising to better marketing, data is pivotal.

At the end of the day, the consequences and advantages of shared data could be transformative. There is no question that playing in the media game is high stakes. Commissioning original content is an arms race not for the faint hearted. Figuring out direct-to-consumer offers that resonate with customers is going to be challenging. It's about taking on the advantages that the FAANGs and BATs have and leveraging them to create new and more robust business models. It's about being one of the Phoenixes. ●

**Kate Bulkley is a journalist specialising in media and telecommunications.
tellkatenow@aol.com**