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Four faces of content

New content, new ways of finding it, new ways of making money from it, and new threats to it: this month's issue of *Digital TV Europe* looks at four key aspects of the emerging content distribution universe.

First, the content that is being distributed is changing. Pay TV operators and broadcasters are desperate to win over younger audiences that are in danger of becoming disengaged from traditional TV. One of the emerging genres that seems to appeal to at least a significant sub-section of this generation is eSports, which has grown massively in terms of its audience and appeal over the last couple of years, to the point where media companies such as Modern Times Group see it as central to their future, and service providers such as Telefónica are investing in their own gaming teams and platforms. In this issue, we speak to the key players and assess their future prospects and likely evolution.

Second, sources of available content are proliferating and pay TV platforms are increasingly embracing OTT TV services from third parties, but viewers still complain that they can't find content that they want to watch. To help cut through the complexity of navigating through multiple menus, voice control has now arrived, boosted by the popularity of digital assistants such as Amazon Echo. Also in this issue of *Digital TV Europe*, we look at how effective voice will be as a content discovery tool and as a way for platforms to differentiate their offerings.

Third, the proliferation of available content sources also raises the challenge of how to make a business case for service providers and content suppliers alike. With audiences fragmenting, and the traditional advertising model now facing a long-term decline, we look at the promise of big data and the ways in which more sophisticated use of the data available could enable TV operators and channel providers to improve marketing, reduce churn and build a sustainable business model.

Fourth, the industry's move to IP and OTT platforms means that new security threats are emerging. On top of traditional content security concerns, TV operators and broadcasters are increasingly the target of cybercriminals. In this issue we look at the nature of emerging threats not only to the intellectual property rights of operators and broadcasters, but to the personal lives of their subscribers.

Finally, we take a look at some of the technologies at this year's IBC show and provide our usual digest of all the latest industry, technology and people news. ●

Stuart Thomson, Editor
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WHAT DO YOU MEAN I CAN'T WATCH IT LIVE!?

Visit CSG at IBC - Hall 14, Booth M24.

News digest

Deutsche Telekom taps Netflix, Fox+ and UFA for EntertainTV

By Andy McDonald >

Deutsche Telekom is adding Ultra HD support and direct access to Netflix to its EntertainTV offering, along with a raft of new content from the likes of Fox.

Deutsche Telekom's new Ultra HD-ready MR 401 media receiver will provide EntertainTV customers with direct access to Netflix following its launch this autumn, with the release accompanying a major content push by the firm.

For the first time the operator, which already boasts exclusive sports rights, has taken German premiere rights to three major new TV series – dystopian drama *The Handmaid's Tale,* Canadian crime series *Cardinal* and comedy *Better Things.*

Deutsche Telekom has also secured the German launch rights to Fox Networks Group Europe and Africa's on-demand service, Fox+, giving EntertainTV viewers access to more than 50 seasons of shows like *The Walking Dead* and *24.*

On top of this, a new partnership with German film and television production company UFA adds a wide selection of German movies and made-for-TV films to the service.

"Deutsche Telekom sees itself as an aggregator on the media market – we bring together the best content on our TV platform so that we can offer our customers the best package," said Deutsche Telekom's head of consumer, Michael Hagspihl.

"Combining superior technology, strong partners and exclusive content is crucial to achieving that aim. With television in Ultra High Definition, Netflix and Fox as well as our exclusive top series, we are taking the next step and underline our leadership in the German TV market."

The launch of the new MR 401 set-top box means that, aloingside Netflix, Ultra HD content from other content providers like Videoland, YouTube,

Sky and Insight TV will also be available through EntertainTV.

The Fox+ deal establishes Deutsche Telekom as the first German partner to launch the non-linear service, which is already available in France, Sweden, Norway, Denmark, Finland and Greece – with more launches due to follow before the end of the year.

"As we bring Fox+ to another key territory, the results we are seeing from the product are surpassing our expectations, and we're thrilled to be partnering with Deutsche Telekom, the leading telco in the region, for our debut in Germany," said Diego Londono, chief operating officer, Fox Networks Group Europe and Africa.

MGM-produced *The Handmaid's Tale,* Sienna Films and eOne Entertainment's *Cardinal,* and FX Productions, Pig Newton and 3 Arts Entertainment co-produced *Better Things* will be available on EntertainTV starting October 4.The Fox+ catalogue will launch at the same time.

Deutsche Telekom said that all EntertainTV customers will be able to access UHD content on demand, but only customers with a MagentaZuhause L rate plan and download speeds of up to 100 Mbps will be able to watch UHD live.

Deutsche Telekom announced the news at the IFA technology trade show in Berlin. Entertain TV is an IP-delivered multiscreen TV service from Deutsche Telekom, which offers content live and on-demand and to the TV through a set-top box.

The company had 3.02 million German TV customers at the end of June, up 8.9% year-on-year.

Congo

PROG > TracePlay launch

Modern Times Group (MTG)-owned music and urban lifestyle broadcaster Trace has struck an agreement to launch its subscription video-on-demand service TracePlay in the Democratic Republic of Congo with local mobile player Africell. Under the deal between the pair, Africell will launch TracePlay by the end of this year, targeting its 3G mobile subscribers and data users. The agreement for Congo will also see Trace take control of Africa Media-owned FM radio station AfriRadio, by November.

Denmark

OTT > Paramount+ launch

Viacom Media Networks International is joining the race among major international content players to develop their own subscription video-on-demand services with the launch of Paramount+ in the Nordic region. The new service will hold the rights to the first pay TV window for paramount Pictures' new movie releases, along with a range of catalogue films and over 800 episodes of MTV and Comedy Central shows. Paramount+ will launch in the Nordic region on October 1. However, Viacom is making the service available via distribution partners only, unlike other SVOD services available across the region such as HBO and Netflix. Paramount+ will be available to premium subscribers of Danish cable and telecom group YouSee/TDC Group's TV service and TDC Group's Norwegian unit Get, Telenor-owned pan-regional pay TV operator Canal Digital in Norway and Sweden, and Swedish cable operator Com Hem.

Estonia

IPTV > Tele2 and Viasat

Mobile telecom operator Tele2 Estonia has teamed up with local pay TV operator Viasat to launch a joint TV and internet offering across the country. Tele2 and Viasat will offer two combination packages. A Silver package priced at €25 a month will include unlimited internet with speeds of up to 30Mbps downstream and 10Mbps upstream, 25 Estonian television channels, and international lifestyle, news, kids and factual services. A Gold package for €28 will also include movies, sports and Russian TV channels. Modern Times Group announced in March that it was selling its Baltic operations to Providence Equity Partners, including the Viasat pay TV service.

France

CAB > SFR delist plan

Altice has filed its planned buyout offer for the remaining shares of French subsidiary SFR with the French markets authority, the AMF. Altice has filed a buyout offer to be followed by a squeeze-out, offering €34.50 a share. Following completion, SFR will be delisted form the Euronext Paris exchange, probably early in the fourth quarter. The transaction has yet to be approved by the AMF. Altice previously attempted to acquire the shares in SFR that it did not already own last year, then amounting to 22.25% of the company's stock. However, the AMF rejected the bid on the grounds that Altice had not provided sufficient information to shareholders.

IPTV > Canal+ on Bouygues

Canal+ has teamed up with service provider Bouygues Telecom to launch a new offering, Start by Canal, that will be available via Bouygues' set-top boxes. The offering, which includes thematic channels and unlimited access to the Canalplay video-on-demand service, will make films, series, animated content and entertainment shows available live and via catch-up and is aimed at a family audience. Start will initially be offered to subscribers who have signed up for Bouygues Telecom's Bbox Miami+ offering, at no extra charge. Bouygues customers with a standard Bbox will be able to sign up for the service for a monthly fee of €9.99. Start by Canal will also enable Bouygues subscribers to view content on multiple screens via the myCanal offering.

LG sees upside from 'fragmented' OTT market

By Andy McDonald >

Liberty Global is benefitting from a fragmented, and in some cases still underdeveloped, OTT market in Europe according to CEO Mike Fries.

Speaking on Liberty's second quarter earnings call, Fries described the "steady improvement in the video business" as one of Liberty's "untold stories". He said that a number of factors are contributing to the improved performance of video, including "slower-than-anticipated adoption" of OTT services in Europe.

"That's a positive for us due to a fragmented content market, the strength of broadcast networks and a very inexpensive cable or pay TV video offering when you compare it to the US," said Fries.

Asked whether Liberty's strong video performance was

Fries: steady improvement in video is one of Liberty's untold stories.

due to the company taking a "more open content approach", Fries said: "I think it's partially the fact that we do provide in almost every market all of the content that could be, and is, desired by customers. That's a positive. You don't have to give up or sacrifice anything."

This, he said, worked in the company's favour in combination with low video ARPU compared to the US, targeted and cost-efficient investments in sports, and an "OTT picture that is both fragmented and I think, depending on the market, not gaining a whole lot of traction".

Liberty said that it added 302,000 next-gen TV subscribers in Q2 and now reaches 7.2 million customers across its Horizon TV, Horizon-Lite, TiVo, Virgin TV V6 and Yelo TV platforms.

For the first half of the year, Liberty lost 31,000 video customers, compared to 137,000 in the first half of 2016 and 171,000 in the first half of 2015, according to the presentation that it issued to accompany the earnings call.

"If you remove the small DTH business in Central and Eastern Europe, our video sub base was actually flat year-over-year," said Fries.

Liberty's total video base stood at 18.55 million in Q2. This breaks down to 14.26 million in Western Europe and 4.28 million in Central and Eastern Europe and was up 0.4% compared to Q1.

Events

IBC 2017
Date: 14 - 19 September
Venue: Rai, Amsterdam, The Netherlands
W: www.ibc.org

Digital TV Central & Eastern Europe
Date: 11 - 12 October
Venue: Kempinski Hotel, Budapest, Hungary
W: tmt.knect365.com/digital-tv-cee/

Content Innovation Awards
Date: 15 October
Venue: Carlton Hotel Grand Salon, Cannes, France
W: contentinnovationawards.com

MIPCOM
Date: 16 - 19 October
Venue: Palais des Festivals, Cannes, France
W: www.mipcom.com

Broadband World Forum
Date: 24 - 26 October
Venue: Messe, Berlin, Germany
W: tmt.knect365.com/bbwf

Discop Africa
Date: 25 - 27 October
Venue: Johannesburg, South Africa
W: 10times.com/discop-africa

TV Connect MENA
Date: 30 - 31 October
Venue: The Address, Dubai Marina, Dubai, UAE
W: tmt.knect365.com/tv-connect-mena/

TV Connect Africa
Date: 7 - 9 November
Venue: Cape Town International Convention Centre, Cape Town, South Africa
W: tmt.knect365.com/africacom/tv-connect-africa/

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Global Wrap

The number of North American SVOD subscriptions is due to grow by 53% between 2016 and 2022, according to **Digital TV Research.** The study claims that the number of people subscribing to TV and movie platforms will climb from 122 million in the region at the end of 2016, to 171 million by 2022. **Turner** is to launch a new stan-dalone premium sports stream-ing service in the US after acquiring European Champions League and Europa League football rights for the three seasons from 2018. The OTT sports service will launch next year, with European football as a key element in its offering. **The Walt Disney Company** is looking to cut around 10% of annual costs at its **Disney-ABC Television** arm, potentially affecting 300 jobs. The ABC US broadcast network, production arm ABC Studios and ABC News are expected to take the biggest hits, with cable chan-nels ABC News, Freeform and Disney Channel also affected. Australia's leading pay TV platform, **Foxtel,** is merging with its News Corp cousin **Fox Sports Australia** to create a new regional powerhouse. The move will see Rupert Murdoch's **News Corp** becoming 65% majority shareholder of the new business, with Australia telecommunications business retaining the other 35%. **PCCW Media** has raised US$110 million (€92 million) from Hony Capi-tal, Foxconn and Temasek, who become investors in its interna-tional OTT services, including Viu. The investment hands the investors around 18% of shares in PPC unit PCCW OTT, which will use the cash on production of content and technology.

Germany

CAB > Tele Columbus PŸUR

Cable operator Tele Columbus is to rebrand all its units under the name PŸUR in October. Tele Columbus said that the name was designed to convey its emergence from a collection of regional entities into a national TV enter-tainment, internet and telephony provider. The brand will be rolled out across the Tele Columbus and Primacom regions of northern, western and eastern Germany from October. The Pepcom Group, with its Cablesurf and KMS brands, present in southern and central Germany, will be rebadged from the first quarter of next year. Tele Columbus has reiterated its tar-gets for the end of this year after turning in solid first-half results, and has confirmed its plans to move ahead with a company-wide rebrand this quarter. The company posted revenues of €245.4 million for the first half, up 4%. Normal-ised EBITDA was €123.5 million, up 7%. The group added 14,000 internet revenue-generating units and 15,000 telephony RGUs in the second quarter. At the end of June, the company had 2.39 million ba-sic cable TV customers, including 430,000 premium TV RGUs. Timm Degenhardt, formerly the chief commercial officer of Switzerland's Sunrise, who it to take over as CEO next year from Ronny Verhelst, joined the company on August 14.

PROG > Pro7Sat.1 warning

Broadcaster ProSiebenSat.1 Group has warned that TV advertising revenues for the third quarter are likely to come in under previous estimates, and is looking at re-structuring its business, including combining its German broadcast and digital arms. It could seek investment partners or to spin off its production and commerce ac-tivities. The broadcaster said it had started a review to align its internal structure to the changes taking palce in the media landscape and to maximise shareholder value. One possibility is a combination of its German-language broadcasting activity with its digital entertain-ment segment. This would be expected to realise "meaningful cost synergies", the group said. ProSiebenSat.1 said it could look at options for its production and commerce units including third parties co-investing or combining businesses. It said it was also mulling potential future public listings for these units.

Disney strikes deal with Iflix after cutting Netflix

By Stuart Thomson >

Disney, fresh from pulling out of its distribution agreement with Netflix, has signed up to provide a branded channel on the streaming video outfit's Asian rival Iflix.

Disney has struck a wide-ranging deal with the Ma-laysia-based subscription vid-eo-on-demand company that will see it provide a branded channel on Iflix's platform fea-turing Marvel and Pixar movies as well as Disney shows.

Iflix said the deal would mark the debut of a new 'channels' feature on its service.

The agreement will initially bring Marvel Studios movies in-cluding *Guardians of the Galaxy, Captain America: The Winter Sol-dier, Thor: The Dark World* and *Iron Man 3*, Pixar Animation films such as *Monsters Inc, Mon-sters University, Up* and *Wall-E,* and Disney shows including *Frozen, Wreck-It Ralph, Cars, Lilo & Stitch, The Jungle Book* and *Cinderella* to Iflix users.
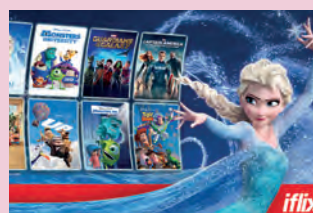
Further titles will arrive on the service next year, including *Star Wars: The Force Awakens, Captain America: Civil War, The Jungle Book, Tangled, Finding Dory, Finding Nemo* and *The In-credibles!*.

In addition to Disney kids content such as *Sofia the First* and *Star Wars Rebels*, the deal will also extend to ABC Studios shows such as *Scandal, Grey's Anatomy, Criminal Minds, Devi-ous Maids* and *Marvel Agents of S.H.I.E.L.D.*

Iflix's deal with Disney, in ad-dition to covering content distri-bution and early window movie rights, will also see the two com-panies collaborate around a pro-ject with Disney's multichannel network arm Maker Studios. This will revolve around the creation of new content to be released as an exclusive Iflix original.

The agreement with Iflix comes two weeks after Disney announced that it was pulling all its movies from streaming giant Netflix to launch its own branded SVOD service when the pair's agreement expires in 2019.

Disney said it would make its future theatrical releases, original and library program-ming available via a new, as yet unnamed service, initially to launch in the US alongside its planned branded ESPN sports subsription streaming service.

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PROG > Digital boosts RTL

Digital revenues boosted RTL's revenue performance in the second half, with the broadcaster also seeing solid growth from production arm FremantleMedia and its German and French broadcasting operations. However, RTL's EBITDA was pushed down by the phasing out of M6's mobile contract in France and lower advertising revenue in the Dutch market. Digital revenue grew by 47.4% year-on-year to €389 million, driven by organic growth at MCNs BroadbandTV and StyleHaul, the sale of its series *American Gods* to streaming service Amazon Prime Video and the first-time full con-

solidation of ad technology units Smartclip and Divimove. Production arm FremantleMedia performed well, delivering a €30 million uplift in revenues year-on-year despite the absence of *American Idol* in the first half. *American Gods* helped provide a boost for RTL in the second quarter, with the group's revenue growing by 8.8% in the three months to June. RTL Deutschland saw revenues rise by €36 million in the first half, while M6's revenues grew by €16 million. Platform revenue grew by 18.7% to €159 million. Reported EBITDA was down 7.4% to €362 million. Adjusted EBITDA was up 4%.

Spain

OTT > Telefónica plan

Telefónica is mulling the launch of a Netflix-like OTT TV service to target an international audience, according to a report in *El País* newspaper. According to *El País*, Telefónica is looking at taking its content to subscribers in countries such as the UK and Germany where its Movistar+ pay TV service is not available. The group is looking at offering a streaming SVOD service similar to Netflix or HBO Now, providing unlimited access to content at a competitive price. The offering

could be provided direct-to-consumer or via agreements with service providers, according to the paper's sources. Telefónica has existing operations in the UK and Germany that it could use to test out the concept. The service would reportedly only be available in Europe and be populated with Movistar's own productions – principally, though not exclusively, those being made in Spain. The project would however be developed by Telefónica as a global entity rather than its Spanish unit, and could include content created by its Latin American subsidiaries, such as shows and series being developed in Peru.

Canal+ needs level playing field, says Vivendi chief

By Stuart Thomson >

De Puyfontaine: Canal+ in urgent need of a revision of the rules.

Canal+ needs a level playing field to compete with the likes of Altice as well as Netflix and other international players, including the right to retain exclusive rights, according to Vivendi CEO Arnaud de Puyfontaine.

Speaking to analysts after Vivendi turned in solid first-half results, boosted by a strong performance by Universal Music as well as signs of a slowing down in the decline of Canal+, De Puyfontaine said Canal+ had to compete with "a local telco that wants to control both telecommunications and content and is launching a movie channel from Luxembourg", and that it was necessary that "everybody gets to benefit from the same rules" regarding the right to strike exclusive content deals.

France's competition watchdog relaxed a number of restrictions on Canal+ in June, allowing it to strike exclusive premium channel deals with the likes of BeIN Sports and to retain exclusivity of series that it pre-finances. However, Ca-

nal+ remains obliged to make any service with which it has an exclusive deal available to a third-party provider that wants to include it in its offering.

De Puyfontaine said that in an industry that is "highly disrupted", there was an "urgent need" for a revision of the rules. However, he said Vivendi had hoped for "a greater release of constraints" than the Autorité de la Concurrence had granted.

The "local telco" De Puyfontaine referred to was Altice, which recently launched movies and series channel Altice Studio, available on SFR.

Vivendi's second quarter and first half results were strongly boosted by the performance of Universal Music, which grew its revenues for the first six months of the year by 14% in constant currency terms.

Canal+'s revenues declined by 2.4% during the first half, an improvement compared with the 5.5% drop in the first half of 2016. The pay TV operator's improvement was more marked in the second quarter, with a drop of 1.3% compared with a drop of 3.5% in the first quarter.

Canal+'s revenues for the first half of the year amounted to €2.568 billion.

The pay TV outfit's individual subscriber base increased by 2.8 million year-on-year to 14 million, thanks to continued international growth and the group's new distribution deals with Orange and Free.

The international subscriber total grew by 309,000 year-on-year in the first half, contributing to a 6.6% increase in revenues in constant currency.

Revenues from pay TV in France dropped by 5.3%, taken lower by the reduced free-to-air window on the Canal+ channel and a drop in domestic subscriber revenues. Advertising revenue also fell, due in part to a sanction imposed by media watchdog the CSA on the

C8 channel. Production outfit Studiocanal's revenues also dropped year-on-year.

Canal+'s EBITA for the first half amounted to €171 million, down from €288 million year-on-year, but with a stronger performance in the second half, which saw EBITA double compared with the first three months of the year.

Separately, De Puyfontaine said that Vivendi is committed to help build Telecom Italia into a quad-play leader and lead it to "long-term and sustainable growth". He said that TIM was committed to deliver large-scale investment in broadband.

De Puyfontaine said that TIM had "once upon a time" been a "best-of-breed player in the European telco business" but had unfortunately been allowed to go into decline, with the company more recently seen as a "prey rather than a hunter".

He said Vivendi's objective now was to "make Telecom Italia great again for the benefit of Italy and Italian customers, and perfectly aligned with the plan of the [Italian] government".

Q&A: Dr Neale Foster, ACCESS Europe

Dr Neale Foster, Managing Director and COO, ACCESS Europe talks about the challenges of delivering a consistent user experience and his company's work with Reliance Jio Infocomm

What are the main client-side technology requirements to support a consistent user experience across multiple screens both inside and outside the home?

For a consistent user experience on the client side, operators need technologies able to provide the same functionality, layout and experience on radically different devices, regardless of the connectivity used. This goal is currently achieved by the NetFront browser family of ACCESS, which provides a series of browser models supporting all different kinds of screens - from small IoT devices, set top boxes and smart TVs up to fully featured mobile devices or even computers. The standards-based, HTML5 compliant browsers allow for a seamless user experience to combine responsive, intuitive design with support for the latest industry standards like HbbTV and FreeView Play, as well as video playback up to 4K and 8K.

What are the challenges faced by service providers in integrating delivery of video services across multiple devices and platforms and what technology solutions are available?

Besides the client side diversity, operators also have to meet all back-end video delivery challenges across multiple devices and platforms. There are a lot of different device classes on the market, each of them requiring specific technology. In general, they differ in three domains: applicable AV codecs, supported streaming protocols, and Conditional Access/Digital Rights Management solutions.

To solve these challenges seamlessly requires a centralised user management system including single-sign-on, a sophisticated encoder and streaming server infrastructure and so-called multi-DRM solutions, which can serve all necessary protection technologies. Although still fairly uncommon, this approach allows end devices to interact which each other seamlessly, including place-shifting of protected premium content across all different device classes. Here ACCESS Twine helps operators to solve the "last step" fragmentation issue by detecting the device's capabilities and brokering the right content from the service, to support the standards-based place-shifting feature. For protected content, we support content rights management through the Verimatrix VCAS and ViewRight technologies. This eases up the development of new extended business models by the service providers – effectively, protected content is no longer limited to one device or proprietary solutions for each device class – while maintaining the end-to-end encryption requested by content owners.

What were the main objectives set by India's Reliance Jio Infocomm in creating its 'digital lifestyle' experience?

Reliance Jio Infocomm provides a wide variety of media offerings within its 'digital lifestyle' experience, such as regional premium video content, e-magazines and more. The service also provides access to YouTube and social media content, and supports media sharing and the consumption of private content from Dropbox, Google Drive, Jio Drive and more over the Jio User Interface. Reliance Jio Infocomm wanted to seamlessly integrate all the different content sources and combine this feature with the ability to place-shift content across all registered devices. In addition, due to the sheer geographical distances in India, the service provider wanted to ensure that it offered its subscribers the possibility to upload private content to the Jio Drive and share it seamlessly with friends and loved ones who were unable to attend a social occasion. This includes the seamless support for remote access to all content on the go, enabling consumers to access all their content whenever and wherever they want, and on their preferred devices. This was achieved through ACCESS Twine, which enabled Jio to increase stickiness to its service by integrating all requested features and providing the full access to the Jio media offering.

What do you consider to be Reliance Jio Infocomm's most innovative applications and what were the main challenges faced in implementing these?

The idea behind the Reliance's 'digital lifestyle' experience was to offer a one-stop shop for all media content, be it public, private or premium. This new trend echoes consumers' media consumption, which consists in multiple different content sources accessed via a wide range of platforms and devices - be it set top boxes, smart TVs, mobile devices, computers or any other device used on the go, such as the connected car, handheld game consoles or IoT enabled devices.

Through the use of ACCESS Twine, Reliance was able to leverage its Ipv6 network servicing over 100 million consumers with a service combining the cloud with remote access functionality.

How important are cloud-based technologies in delivering a next-generation TV experience and what elements require device-based technologies?

The combination of cloud-based and device-based technologies is the best way to simplify the delivery of complex next-generation TV experiences. At present, the cloud is the only way of providing every subscriber with high performance aggregated search on all internal and external content. Cloud support is also necessary for remote access and adding third party IoT services, like Amazon Alexa. However, the cloud can only be effective if the necessary devices and technologies can cooperate – which needs to be managed at the device level. Therefore, it is fundamental for technologies that deliver next generation TV Everywhere services to harmonise the power of the cloud and each individual consumer device.

ACCESS will exhibit at IBC 2017 on stand #14.D14.

OTT > AMC OTT plan

Interntional channels provider AMC Networks Iberia is planning to launch a new streaming service in Spain, in partnership with pay TV distributors, according to local reports. A promo for the service was recenlty posted on YouTube, advertising a mix of channels and on-demand content for €6.99 a month. The service advertises itself as offering content in 4K UHD, available on mobile, tablets, PCs and TVs. The voiceover to the YouTube video said that the service will make available "the best channels and thousands of programmes on-demand for only €6.99 a month". The promo video gave no information regarding distribution. AMC separately told *DTVE* it was not responsible for the YouTube posting of the promo, and said it may contain incorrect information as the project is still being worked on. The media group did confirm that the service will be available only via pay TV operators, and said the content line-up was still being worked on. According to *El Español* newspaper, the new service will only be available via pay TV platforms such as Vodafone, Orange and Movistar, at a price to be set by the operator. Unlike pure OTT player such as Netflix, AMC is planning to offer linear channels as part of its streaming service, offering 17 channels covering different thematic areas. According to *El Español*, the line-up includes series-focused AMC, movie channel Canal Hollywood, independent movie channel Sundance, telenovelas channel Somos, factual network Odisea, cooking channel Canal Cocina, lifestyle channel Decasa, kids channel Canal Panda and music service Sol Música. Other channels to be included are Dark, Historia, and History Channel Iberia joint ventures A&E and Crime & Investigation. The service will also include two JV channels with Portugal's NOS, Biggs and Blast, and its SVOD JV with YouTube network Machinima, according to the report. *El Español* said the service will also include video-on-demand series.

UAE

OTT > OSN launches Wavo

UAE-based Middle East pay TV platform OSN has launched a new streaming service, Wavo, available on the Apple App Store and Google Play. Wavo offers a mix of live and catch-up TV, movies, series and a mix of western and Arabic content, according to the pay TV outfit. The service is targeted primarily at the growing population of young mobile consumers in the region, offering four packages covering sport, entertainment and movies. Wavo Entertainment is available for US$9.99 a month (€8.50), while the movies option is priced at US$6.99. Wavo Sports is available for US$4.99 a day or US$7.99 a week. OSN is also offering a service dedicated to WWE wrestling – The WWE Network App – for US$9.99 a month. OSN said the launch of the new streaming service was part of its 'new OSN' strategy launched in February of this year. The company revamped the offering with new packs and new price points in the wake of an extensive customer research project across 40,000 homes in the region, providing more flexible offers than had hitherto been available.

Ofcom submits new advice after Bradley requests Sky clarification

By Stuart Thomson & Andy McDonald

Regulator Ofcom has submitted additional advice on the proposed merger between 21st Century Fox and Sky to the UK government. The broadcast regulator made the submission to secretary of state for digital, culture, media and sport, Karen Bradley, with the advice due to be published "in due course".

The move comes after Bradley requested "advice and clarification" earlier this month in light of representations made in relation to the proposed merger.

"The Secretary of State will now carefully consider that advice before making her decision on referral on the basis of all the evidence before her, and will do so as soon as is reasonably practicable," said the government in a statement.

The UK government earlier had said that submissions made in relation to 21st Century Fox's planned acquisition of Sky "raise new evidence" and asked Ofcom to take a fresh look at the agreement.

The UK department for digital, culture, media and sport (DCMS) said a number of representations made to it "raise new evidence and/or comment on the Ofcom assessment" and that it was seeking "further clarification" in relation to those representations.

The decision to seek further clarification from Ofcom relates to Fox's adherence to broadcasting standards.

Bradley had earlier said that she was "minded" to refer Fox's bid to competition regulator the CMA on the grounds of media plurality, but that she was satisfied with Ofcom's assessment that the deal did not raise broadcasting standards concerns.

Bradley: requested additional advice and clarification from Ofcom.

In her statement to parliament on July 20, Bradley said that the Ofcom evidence was "clear" on broadcasting standards that "there were no grounds on which I can refer" the bid. However, she said she would look at any new evidence.

A number of UK politicians, including former Labour Party leader Ed Miliband and shadow culture spokesman Tom Watson, have called for a reopening of the investigation of the broadcasting standards question – calls that have become louder following recent events related to Fox News in the US.

Still dealing with the fallout from sexual harassment scandals at Fox News, 21st Century Fox has recently become embroiled in fresh controversy over allegations that Fox News gave advance notice to the White House over a subsequently discredited story involving the hacking of Democratic National Convention emails and the death of a DNC campaigner.

Ofcom could face a judicial review of its ruling that Sky would remain a "fit and proper" holder of a UK broadcast licence if 21st Century Fox's bid to take control of the pay TV operator is given the green light.

Advocacy group Avaaz hired lawyers Hausfeld to present a 'letter before claim' to the UK media regulator – a first step in the judicial review process – highlighting what it claims to be "fatal flaws" in Ofcom's reasoning that Sky would remain a 'fit and proper' holder of a licence.

TV plays the millennial game

The meteoric rise of eSports has caught the attention of TV operators and broadcasters. They are investing in rights and dedicating airtime to gaming. But how likely is this to win back millennial viewers? Andy McDonald reports.

Online gaming has transformed in recent years from a pastime typically associated with young adult males into a multi-million dollar global industry. eSports has grown out of bedrooms and into arenas, with the spectator element fuelled by the success of online viewing platforms.

Unsurprisingly, the TV industry has taken note of these trends and is looking to tap into the increasingly popular and lucrative world of gaming. Companies ranging from Modern Times Group (MTG) in the Nordics, Telefónica in Spain, and Sky in the UK have all made eSports investments, while increased broadcaster interest is making rights more competitive than ever.

But with the massive established reach of digital platforms like Twitch and YouTube, is there a place for eSports on TV and can broadcasters and operators lure millennial eyeballs away from online streaming and social media platforms?

eSports exploded into the consciousness of many broadcast-industry watchers in August 2014, following Amazon's US$970 million (€816 million) cash buyout of videogame streaming platform Twitch. The deal, and its associated price tag, highlighted not just the popularity of eSports in its then-current form, but also the vast growth potential of this market.

Targeting the youth market

Today Twitch claims 2.2 million unique broadcasters each month and 10 million daily active visitors, who spend an average of 106 minutes per person, per day on the site. "Our core demographic is 18-34 year olds, roughly 70% male," Twitch's vice-president of sales for Europe, Steve Ford, tells *Digital TV Europe*.

ESL One New York, held in the Barclays Center, is one of ESL's many events.

"This tends to be the same profile as the cord-cutters and cord-nevers in a lot of markets."

The combination of a difficult-to-reach audience and a healthy market is arguably what is driving broadcasters and TV operators toward eSports in increasing numbers.

Earlier this year, eSports market intelligence company, Newzoo, estimated that the eSports economy will grow 41.3% year-on-year in 2017 to reach US$696 million. Its 2017 Global Esports Market Report estimated that brands would spend US$517 million this year on eSports advertising, sponsorship and media rights. This is expected to double by 2020, pushing the total market to US$1.5 billion.

While the opportunity is clear, the ways into the eSports market are not, and different players across the European broadcast space are taking different approaches – variously investing in eSports content rights, eSports broadcasters, and directly into the eSports organisations that run tournaments.

MTG was one of the first companies from a TV background to make a decisive move into eSports. In 2014 the Nordic firm launched its own eSports streaming platform, Viagame, with a mix of licensed content and content from regional eSports company Dreamhack. However, Arnd Benninghof, the head of MTG's digital division MTGx, says that it soon became clear "it was not really a smart strategy to compete with Twitch. That was the point when we decided to invest in a league operator."

In July 2015 MTG paid around US$87 million for a 74% stake in Cologne-based eSports specialist Turtle Entertainment, which owns and operates some of the world's largest eSports brands under the name ESL. This gave MTG majority control over leagues like ESL Pro League and events such as ESL One and Intel Extreme Masters (IEM) and from today's perspective looks to have been an extremely shrewd investment. This year's IEM World Championship in Katowice, Poland attracted 173,000 fans to the Spodek Arena over the course of two weekends. It was also the most broadcast event in ESL's history, reaching more than 46 million unique viewers online – up 35% compared to last year's event.

Benninghof compares the ESL to a "Champions League brand" and Viagame now redirects to an ESL TV branded site, yet this is all still just one aspect of MTG's eSports

strategy. In 2015 the company fully acquired Sweden-based Dreamhack for some US$28.2 million and launched linear TV channel eSportsTV, and Benninghoff says more investments could follow. "We are prepared, over the next two-to-three years at least, to grow the business through further M&As, so there is a clear commitment," he says. "This could be more technology-driven investments, or content creation, or just talent acquisition."

Speaking on the phone from ESL's UK's base in Leicester, UK managing director James Dean says that MTG's initial interest in ESL was likely down to "the fact that we're reaching a digital, millennial audience". However, he also puts it into the context of MTG's broader digital portfolio and adds that "there's obviously a synergy between eSports and sports products".

Dean says that Twitch is still the number one platform for people to tune into ESL – despite a lot of short-form content going up on Facebook and Twitter, and despite YouTube's efforts in the eSports space. A year after Amazon's buyout of Twitch, YouTube went head-to-head with the service by rolling out its own dedicated YouTube Gaming service and earlier this year it agreed to exclusively broadcast the ECS Counter-Strike: Global Offensive league.

"YouTube has a lot of catching up to do with Twitch, so I guess one way you could approach that is to say 'well let's buy exclusivity for the largest CS Go League in the world, which creates a huge amount of viewership," says Dean. "If it was streamed on Twitch as well, I think you would be hard-pushed to move those viewers across, despite the YouTube platform being very good. The community sticks around because they're used to it."

Widening the appeal

Discussing TV's wider interest in eSports – with operators like Sky and BT all now getting in on the action – Dean says: "I personally think they had to try it; it had to be an experiment." In relation to Sky and ITV's involvement with Ginx, and many other examples across the world, he says: "I think really what we're witnessing is the fact that they have to test the water. Until the ratings come out, we're not going to know whether it works or not."

Broadcasters and operators are hoping to

Starcraft II champion Jun 'TY' Tae Yang at Intel Extreme Masters, Katowice.

replicate eSports' online success on TV, both by attracting millennial viewers to television and by opening up eSports to a wider audience. But how big a challenge is it to succeed in either scenario?

In September 2016, Sky and ITV each pledged £1.55 million (€1.7 million) of investment into eSports broadcaster Ginx, which claims to be the biggest international eSports channel with a reach of 50 million households. Sky's group director of business development and partnerships, Emma Lloyd, describes the investment as a response to "eSports market demand for linear coverage, to complete availability across all platforms".

Lloyd says the Ginx investment gives Sky insights on the creation of eSports content "from the inside out" and claims there is value in bringing together eSports content across traditional platforms, as well as accessing it for use on TV, digital and social networks.

"It's important to remember that Sky is a quad play provider, not just a television business, so the field of opportunity to bring eSports to audiences across platforms and devices is much wider for us than for some competitors," says Lloyd.

Despite this, Lloyd sees a place for eSports as a televised sport – even if it doesn't compare with the likes of football and rugby. "eSports caters for global, individual viewing across connected devices, while linear TV remains the most popular way to watch traditional sports," she says. "But with demographic changes and the visual quality of live eSports streams constantly improving, we might see eSports become a communal viewing experience on TV similar to traditional sports."

Last year Sky broadcast highlights from ESL's Intel Extreme Masters tournament on Sky 2, showing footage of games like CS: Go and League of Legends on an entertainment

channel that also plays host to drama and comedy. However, when Ginx launched on the Sky platform last summer, it took channel number 470 in the sports section of its electronic programme guide – between greyhound racing channel Front Runner 2 and Formula 1 channel Sky Sports F1.

Ginx CEO Michiel Bakker, says the sports team at Sky drove the investment in Ginx as a way to make a first move into eSports. "Ginx eSports TV is packaged in the sports section of the Sky EPG and the channel brings more millennials to that section, which is part of the rationale for investing."

For Bakker there is a clear opportunity for eSports on television. He says there are roughly 200 million eSports enthusiasts around the world and another 200 million eSports 'viewers' – with both groups having grown by "meaningful double-digit numbers" in the past five years. "Roughly 70% of those two groups are millennials and they consume vast amounts of content across multiple touch-points," he says. "In the US, eSports viewing has overtaken traditional sports like ice hockey. Now Television is bringing in a new mainstream audience to help fuel that growth. I'd say it's a hugely significant part of millennial media consumption."

Ginx is UK-based but the channel, which broadcasts 24/7, is available around the world, including much of Europe. Most of Ginx's output is exclusive for TV, but Bakker describes it as 'leaky' with some shows simulcast across

"We might see eSports become a communal viewing experience on TV similar to traditional sports."

Emma Lloyd, Sky

Twitch and other digital platforms and some content produced only for the web. "In that way we try to build a bridge between the online and linear TV worlds. That audience flow is part of the attraction of the channel for cable, IPTV and satellite platforms."

Eleven Sports is a linear broadcaster that has recently moved into eSports after striking a wide-ranging deal with eSports outfit Gfinity to air live, exclusive competition gaming from its Elite Series events. Gfinity's Elite Series brings together eight professional teams

competing in three games – Street Fighter V, Counter-Strike: Global Offensive, and Rocket League – and Eleven will show the coverage in all seven markets where it is active, which includes Poland, Belgium, Luxembourg and Italy in Europe.

"Why did we acquire it? Because first of all we believe that eSports is on the rise significantly and globally," explains Eleven Sports' group managing director, Danny Menken. "Gfinity has organised more than three million gaming sessions, which have achieved more than one million views to date. Those are quite significant numbers and it really shows that there is a market for it."

Menken says another major factor in licensing eSports is that its cable and IPTV provider clients are "looking for millennial content" to appeal to cord cutters, or those that never had a cord to cut. "eSports is exactly the type of content which is attractive for this target group."

A new type of storytelling

In Spain, Telefónica's commercial brand Movistar last year announced it was integrating electronic games into "the core of its strategy" after signing a deal with ESL. It now distributes eSports digitally through its Movistar+ platform, and on TV via a dedicated Movistar eSports channel, as well as on Movistar Deportes 1 and 2. Movistar also created Movistar Riders, an eSports club made up of various professional video game teams, which is headquartered in the Movistar Gaming Centre in Madrid.

In Telefónica's eyes the coverage and quality of its fibre broadband has helped spur growth in the games sector in recent years. It is now tapping into that growth from an entertainment standpoint, adding eSports alongside its traditional sports offering of football, basketball, cycling, MotoGP and F1.

A spokesperson for Telefónica told *DTVE* that through its different platforms eSports is

reaching both its young target audience and new viewers that previously weren't familiar with eSports. "Television is a more 'accessible' means to reach new family audiences," said the Telefónica representative, explaining it can play a 'socialising' role between parents, children and fans of eSports. "In order to reach new audiences we are committed to an editorial tone that helps to democratise and facilitate the understanding of eSports, its competitions, its rules, its jargon or expressions."

MTG takes a similar view of its esports TV channel. MTGx boss Benninghoff accepts that for the avid gamer, TV is probably "less relevant" as they find their content and stories within the eSports world. "Over recent years, eSports was very much driven by live streams from live events," he says. "What we're trying to do is add shoulder content – documentaries, background stories, analysis and so-forth, to make it more appealing to a broader audience."

This idea of building on the popularity of eSports with content that can live on TV has also started to apply outside the strict confines of a dedicated eSports channels. Youth broadcaster The QYou has identified what it believes is a "fertile field" for content related to eSports, with co-founder and CEO Curt Marvis explaining that eSports is in the top four categories of programmes it is looking to create from now on. He says this opportunity lies around the lifestyle of eSports – "everything from fashion, through the ancillary interests of the gamers, to the personalities involved".

"As a company, we're not focused on the live event broadcasts for a number of reasons," says Marvis. "That's not really what we do as a company, that's one reason. The second reason is frankly that the rights are becoming extremely expensive and being left to a different group of buyers and channels that are interested in that, some even being those that are typically showing Champions League [football] and those types of events."

Bigger industry shifts

While eSports has grown up in recent years, at the same time there has been some debate about the abiding popularity of traditional sports among younger viewers. A study by Ampere Analysis last year claimed that interest in sport among young millennials is "on the decline" with many viewers lured away from sport by the wealth of other TV and online

To Gfinity and beyond – team Envy participating in the Gfinity Elite Series.

video content.

Of nearly 32,000 consumers interviewed in the US and Europe in the previous year, Ampere found that sports fans were under-indexing among those aged 18-24. According to the statistics, 10% overall chose sport as their favourite genre. Of these, just 11% were young millennials, compared to 13.5% of the surveyed population – 17% lower than would be expected.

ESL's Dean does not recognise this trend. He claims there is huge crossover between live sports and eSports – something that is borne out both by data gleaned through its social media channels and anecdotally. "Our studio's in Leicester," says Dean. "When Leicester won the Premiership last year, the Twitch chat in our Counter Strike finals was filled with [Jamie] Vardy. Literally, every time someone mentioned Leicester, they just typed Vardy. So they obviously are aware, they watch, they understand."

Dean says that he does not see eSports as a threat to normal broadcast TV. However, he does have some misgivings about broadcasters' ability to reach new audiences with eSports content. He argues that while a TV viewer does not need a deep understanding of football to appreciate what is happening on the pitch, in eSports a viewer needs to know and experience the game themselves in order to understand the strategies and plays as they unfold.

"Unless you're really interested in playing that game, you're not going to understand it exactly the way in which it's presented," says Dean. "Even if it is explained, it would

potentially become a massive advert for how to play that game. Is that interesting to a broadcast audience? Is my Dad going to be interested? He's not. He really isn't going to be interested."

At Twitch, Steve Ford welcomes broadcast trials with eSports content. "Companies like Turner are working with Twitch to broadcast their ELEAGUE content. In the UK we have the BBC experimenting with their digital channel BBC3 and this is all positive for the ecosystem overall," he says.

However, he claims that one of the foundational elements that made the Twitch platform so popular in the first place is missing from TV. "Traditional broadcasters share common challenges, particularly when thinking about the 18-34 audience," says Ford. "Gaming and eSports content can appear like an attractive solution, but this audience already has expectations when it comes to this type of content, like the real-time interaction we see on Twitch through chat." According to Twitch, some 14.2 billion chat messages were sent through the platform last year. Asked what makes Twitch so compelling, Ford says: "It is live social video, so they are more than viewers, they're participants. The broadcaster is talking to the people in chat, who in turn are chatting with the broadcaster and other viewers."

Jeff Nathenson, managing director of international at Whistle Sports – an entertainment network that specialises in youth-focused sports content for social and digital platforms, including YouTube – says that while he doesn't think there is a decline in interest in traditional sport among young

people, there is a change in how they consume content, including a lot more engagement with social influencers and content creators.

"For far too long we've looked at live as being the be-all and end-all," says Nathenson. "Live still is ahead of everything else in terms of importance, but we are seeing the shrinkage in that, and therefore there needs to be a recognition and an adjustment in the industry to say 'well there are other ways we can join, engage and participate in sports that does not involve sitting in front of a television and watching a live cricket test-match'."

In terms of eSports, Nathenson claims that traditional broadcasters can play a key role in taking gaming mainstream – if it is done correctly. "Whenever I've seen a broadcaster get involved in eSports activities, it looks a lot like traditional sports on television, which is a model that has seen diminishing returns," he says. "I'd like to see the kind of creativity that the media industry and traditional sports broadcasters can bring to eSports to really bring it to life and make it a lot more fun and acceptable, because that's what they do extremely well."

One thing that almost everyone does seem to agree on is the growth potential of eSports. "I see the eSports market growing at minimum five-fold over the next five to 10 years, in terms of viewership, participation and revenues and we will see a much greater integration of traditional sports organisations with esports," says Ginx's Bakker.

At Twitch, Ford believes that the company, and eSports as an entertainment category, will each continue to grow – "especially as we see more accessible games enter the eSports industry". By way of example, he says Twitch has been working with Psyonix for the Rocket League Championship Series and Namco Bandai for the Tekken World Tour, "both of which are based on easy-to-learn, but hard-to-master games."

Predictably enough, Dean at ESL also believes that eSports will only grow in popularity as millennial fans get older. "I myself have got my first child on the way, so you're going to have people who are naturally interested in videogames being a lot more open to viewing this stuff with their children. I think that will be a big shift, over time, that will continue the growth." ●

Talk show

With the advent of Amazon Echo and the launch of next-generation boxes such as Sky Q, there are signs that using your voice to control the TV is finally filtering into the mainstream. Stuart Thomson looks at some of the latest moves.

Using your voice to control the TV has been possible for some time, but it is only the growing popularity of digital assistants such as Amazon Echo that has made speaking to the TV begin to seem like something your average person would do.

Novelty is not enough to sustain a business case, however. The use of voice is unlikely really to take off unless it fills a need. TV platforms have been opening up to multiple content sources, including the likes of Netflix. For consumers, this means that finding the content they want to watch is becoming more

complex. On a PC, it is relatively easy to use the keyboard to search for content. On TV, in your living room, using a remote control to navigate a text-based interface is much more of a hassle and less likely to produce satisfactory results.

For this reason, TV operators are beginning to look more seriously at voice-based search as the next frontier of the user experience.

The use of voice has been given a strong impetus by the success of devices marketed by Amazon, Google and Microsoft. With voice technology becoming increasingly sophisticated and a supply of rich metadata

to support increasingly complex variations in search terms, it seems that voice-based systems are here to stay.

Challenges

For TiVo, a pioneer in this area, developing voice-based search and navigation has been central to its research and development activity for some time. Rovi's acquisition of TiVo saw it put its existing Rovi Conversation Services activity together with the former Digitalsmiths

content discovery technology to enable more sophisticated recommendations to be served to voice-based searches. Its involvement has given TiVo unique insights into some of the challenges, and possible solutions.

"Text-based search is quite simple because people have a limited way of entering text, particularly in the entertainment space. They don't have a full keyboard," says Charles Dawes, senior director, international marketing at TiVo. "They use a remote or TV on-screen keyboard or maybe their phone. So they write much shorter things like actors names and programme titles, and there are lots of technologies you can use to help guide them through. When it comes to voice search, the way people search for the content becomes very different. It becomes a lot deeper and more complicated. You might say the name of an actor or something like that." For the content navigation system provider, there is a much stronger need to "have an in-depth understanding of the content", he says.

Dawes says that the technology is constantly improving, with machine learning enabling systems to recognise and decode regional and foreign accents, and interpret different ways of saying the same thing. For languages other than English, however, more work is required.

Sylvain Thevenot, managing director at TV technology specialist Netgem, points out that, in addition to decoding regional accents, voice systems have to work out the context in which users are employing a particular word, such as 'home'. This could mean a request to go back to the home screen, or a request to play a piece of content "at home". Individuals also have private ways of referring to things that may not be at all simple for a machine to decode.

Voice recognition is just one part of a complex equation. For TV viewers, using a voice input also carries an expectation that the system is going to deliver a personalised response to a general question, in a way that isn't true of text-based search. "When someone says 'what is on TV tonight?' they are not asking a general question. What they are saying is, 'what is on TV tonight for me?'," says Dawes.

Responding to this not only means building up profiles of individuals – or family groups – but also using voice recognition technology to identify particular individuals. This is a step beyond simply using voice for search. The

EE TV has tapped Netgem to provide its UX, including voice control via Amazon Alexa.

technology to do this is available Banks and other organisations are already using voice to identify and log in users to their accounts. "It is something we will definitely see in the entertainment space," says Dawes.

Enabling this kind of voice search in a meaningful way also means having a supply of rich metadata, including things such as well-known and not-so-well-known film quotations and characters' names.

"You can't just have a basic set of metadata. It is like in the music space with lyrics. People remember a lyric, but not the title of the tune. It is similar with video. You remember specific pieces of information and maybe the name of the character an actor plays but not the name of the actor, or you may know the same actor was in something else," says Dawes.

Ferdinand Maier, managing director of remote control specialist Ruwido, says that TV operators will typically look to deploy voice-based search in a phased way, starting with basic requests such as the ability to search for specific titles, followed by more complex, conversational searches with commands such as 'show me something funny'. However, the wider the attempted reach, the more room there is for misunderstanding and for presenting inappropriate content.

Supplying metadata and content descriptors that can be matched with voice requests to deliver appropriate suggestions remains challenging, despite the promise of machine learning. However, Rich Cusich, chief product officer at Nielsen-owned content recognition specialist Gracenote, believes that most voice requests will be relatively simple, easy-to-decipher commands. "Eighty per cent of things will be pretty straight forward," he says.

Nevertheless, systems need to be aware of complex links between pieces of content that could help users find what they are looking for. Integration with social media may also be important, as viewers could be looking for something that is trending at a particular moment. Cusich says that providing meaningful search results will require a combination of collaborative filtering, cross-referencing with user data and awareness of context, including the time of day and the device that a viewer is using.

TiVo's Dawes nevertheless cites a recent survey that showed voice being used by 43% of millennials every day to interact with devices to highlight how quickly voice technology is becoming mainstream. He believes that older TV viewers will be attracted to the technology because it is easier and more appealing than "working through complex content trees that a lot of the time are not dictated by logic but by commercial agreements".

"Being able to sit down and say 'show me the last *Eastenders*' or show me what was on at 9pm that I missed' will open up content that they haven't been able to explore," he says. According to Dawes, people with access to voice technology are increasingly using it to make over eight searches a week, meaning that voice quickly becomes "the default way to do search for content".

YouView and EE TV

While the ways in which voice can most effectively be used are still a work in progress, some service providers are beginning to take the plunge.
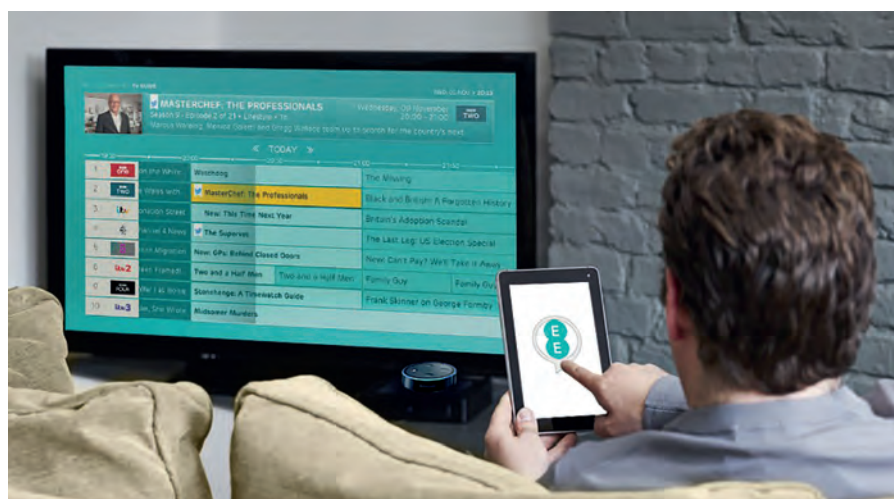
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Q&A: Charles Dawes, TiVo

Charles Dawes, senior director, international marketing at TiVo, talks about the place of voice interaction in content discovery and service providers' need to deliver a unified user experience

What are the big challenges for TV operators of using voice both as a user ID/login tool and for content discovery and navigation?

Many TV operators are already looking at what their voice strategy should be, but there are really two key challenges for them when it comes to implementing it as part of their offering. The first is hardware and the second is adoption. On the hardware front, they must fit it into their hardware roadmap, so many companies are tying voice to their next generation of hardware. On the adoption front, the challenge is to get consumers to feel comfortable with using their voice to interact with their service. Both challenges are well on the way to being overcome, as voice-based interaction has been a big topic during the first half of 2017 – this was evident in January this year, where Amazon's Alexa was literally everywhere at CES. Over the year, Google has deployed its Google Home device and Apple has announced that Siri will be in its smart speaker product. This has helped to raise the profile of voice-based interaction in the consumer space and has given additional ways for consumers to link voice services to their existing in-home ecosystem, including their pay TV service, meaning adoption and usage is really starting to take off.

What are the key elements of TiVo's voice navigation platform and how does it support contextual voice queries?

TiVo has been at the forefront of implementing voice services in the entertainment space and focusing on understanding the consumer, their relationship with entertainment and the context that they are in. TiVo's platform is built around providing a conversational style interaction, which allows consumers to speak freely, follow up on queries and change from one context to another without having to think about how to structure what they want to say. TiVo's vast knowledge of entertainment across video, sports and music, which is underpinned by its unique combination of TiVo's entertainment editors and its advanced AI machine learning technology, means that the consumer can interact as easily as speaking to the person sitting on the sofa next to them.

How are consumers typically using voice in the context of the different search and navigation input tools available to them?

First and foremost, voice really simplifies how you find content. It's a 'wormhole' to the other side of the user experience (UI). Depending on how it's implemented, it can remove the need to search for search and it can also remove multiple clicks through a traditional menu hierarchy. When users know what they want to watch – which is about half the

time – they can just ask for it using their voice. What's great about the TiVo Conversational Search product is that users don't actually have to know the exact title. Often, users will know some details of the programme or film, but can't remember what it is called – TiVo allows you to simply search using complex parameters that you just couldn't access in a traditional UI. What's more, voice enables personalisation. There is a 100% implied '*me*' in voice searches. When the consumers ask "What's on TV tonight?", "Find movies with Tom Hanks?" or "What free horror movies are available?" they are saying "What's on TV tonight *for me*?", "Find *me* movies with Tom Hanks?" or "What free horror movies are available *for me*?"

What do operators need to think about generally in providing a user experience that matches the needs of different customer segments in their subscriber base?

When it comes to the user experience, operators across the globe are dealing with one unified customer group and, increasingly, the needs of their different segments to be catered for with different levels of user experience. For example, these range from customers who want their full service, whole home DVR with access to broadcast, recorded and OTT content in every room and on every device, through to those who don't own a TV but still want TV type content. This means that they need to be able to provide different levels of functionality but, crucially, they need to do this whilst reflecting a consistent set of brand values and functionality across their segments. TiVo is a clear leader in this space and has demonstrated this recently with multiple product deployments with companies like Tigo in Latin America.

How far is it possible or desirable to provide a unified user experience across different devices, such as TV, smartphone, tablet and PC?

It's both possible and desirable to provide a unified user experience across different devices, as it creates a familiar experience for the consumer. We know that consumers access their favourite entertainment on different devices and in different locations, and therefore ensuring simple, seamless navigation is one of the most important factors. Whether that is ensuring seamless playback from one device to another as part of a whole home DVR solution, to providing context relevant content choices and recommendations for a device, TiVo can help companies stay ahead with simple, smart, elegant solutions.

Visit TiVo at Stand A.31 in Hall 5 at IBC.

Sky enabled the use of voice on touch remotes for its Sky Q advanced TV service earlier this year, focusing on a range of basic search commands, including the use of some well-known movie quotations. Other UK providers have looked to Amazon's digital assistants as their first avenue to enable voice. BT-owned telco EE recently launched voice control for TV through the Amazon Echo and Echo Dot devices. The company said it was the first UK provider to support an Amazon Alexa 'skill' on its set-tops.

EE TV has integrated Alexa with its Netgem-supplied TV platform. Users can ask Alexa what is on TV tonight, with Alexa providing three recommendations from the same source that supplies Freeview Picks – the UK digital-terrestrial service's recommendation feature.

Users have the option to record any or all of the recommended shows using a voice command. The skill works whether EE TV is switched on or in standby mode.

Netgem's Thevenot says there are three levels at which voice can be used to interact with TV services. At the most basic level, voice can be used to replace direct remote control commands such as 'channel up' or 'down' and 'tune into BBC1'. This has limited appeal and adds little to the functionality of a remote control. One level up is using voice to search for content using obvious keywords to replace a virtual onscreen keyboard. Beyond that, says Thevenot, voice requests can trigger recommendations based, for example, on what's trending on social media. This is essentially what EE is focusing on.

YouView, the advanced TV platform used by BT and TalkTalk, has meanwhile also launched its own Amazon Alexa pilot.

"We are still exploring the proposition. We want to take something to the larger user base. We have to have something usable in their homes. That is our goal," says Morgan Henry, head of emerging technologies team at YouView. "This was championed by people who were passionate about voice within YouView.

YouView has enabled voice interaction via Amazon Alexa.

All of our partners were very supportive. Right now we are getting positive responses but our goal is to put it in front of users, and learn what people are going to use it for."

The starting place for YouView is to enable viewers to "avoid reaching for their remote as they explore" content and to enable them to carry out basic functions such as to record content via voice command. As a free-to-view platform, YouView does not require a user

> **"We are still exploring the proposition. We want to take something to the larger user base."**
>
> **Morgan Henry, YouView**

ID or password. However, Henry says voice ID could be used to deliver personalisation at an individual or household level. "Context is really important. Are there other people in the room? If there are kids in the room, interacting with the device, you should offer family recommendations," he says.

Ruwido's Maier, whose company is focused on the high-end pay TV market on the other hand, says that voice biometric recognition could be used to not only check entitlement and parental control but to enable profiling of users, allowing the system to know who is making requests and where they are in the home. Maier says that work on this is ongoing.

The EE and YouView trials are still at an early stage, but service providers are only likely to embrace voice fully if they can be sure it will have a broad appeal. According to Chloe Davies, chief product manager at UK free-to-view satellite platform Freesat, a survey of users found that around a quarter listed voice control as a must-have or a 'like-to-have' feature. However, detailed questioning placed it lower down the list of' priorities, below more down-to-earth features like the availability of catch-up players and the ability to record content.

Personalised recommendation is also higher on their list of priorities. Content recommendation to some extent can be a substitute for

active search, putting content that users might like in front of them without them having to lift a finger – or raise their voice.

"If you want to form a habit with people on an everyday basis you need to make recommendation prominent. Expecting people to go off and find things is always going to be of limited appeal. TV is more about giving an upfront experience on a landing or home page," says Davies.

Personalising recommendations and enabling viewers to find content they may want to watch across live, on-demand and catch-up services may therefore deliver more value in the medium term than voice search. Nevertheless, she concedes, the popularity of Amazon Alexa could see voice pass into the mainstream. "It cuts out the hassle of using a remote control. The aim is to reduce the amount of time people spend looking for stuff," she says.

Platform choices

Voice-based search seems most likely to supplant awkward text-based search if enough people are 'voice-enabled', but are digital assistants the best platform to use?

Davies enumerates three basic choices: using Alexa or another digital assistant such as Google Home or Microsoft Cortana; using a mobile phone or tablet; and direct input via a remote control to the set-top box. Starting with Amazon Echo makes sense, she says, possibly in combination with smartphone apps. "I think the smartphone and Amazon Echo are things you could do together. You could use the Freesat app as a companion device experience but also use it for content discovery," she says.

Enabling voice direct via the set-top on the other hand means a new box and a new remote, pushing up the bill of materials to the user or the platform operator. However, using a box does have the advantage of giving control back to the service provider. "If you have an Amazon Echo, a YouView box and a Freesat

Q&A: Benoit Robert, Kontron

Benoit Robert, VP of Strategy and Marketing, Communications Business at Kontron talks about the challenges and choices facing video companies as they look to deploy cloud-based infrastructure

What applications are driving the industry-wide shift to cloud-based video processing and where are the greatest benefits most likely to be realised?

The field is still filled with SDI gear such as cameras, switchers and routers, but the move to IP networks is inevitable. For the short and medium term, operators and broadcasters will remain in hybrid mode, simply because prior investments can't be so easily eradicated. More recently, progress is being made, with initiatives like the upcoming SMPTE ST 2110 (and previously SMPTE 2022-6) standard for uncompressed IP video and audio, which will further ease the IP migrations in 2017. This can make live production based on an IP stream on commercial off-the-shelf (COTS) Ethernet platforms a reality. The applications quickest to, not only run on IP, but be part of new cloud-based configurations are the various encode/decode distribution systems deployed across regional Headends. But IP is extending its reach to production facilities production encoders, SDI-IP gateways, and even a small handful of cameras (early yet).

What are the main technology choices to be made when deciding on what kind of cloud infrastructure to deploy?

There are substantial advantages that come with virtualisation including cost savings and having a unified system. However, choosing a cloud infrastructure really depends on what your business objectives are and what's right for your application(s).

If you are operating a legacy network and looking for a way to automate it, using virtual machines (VMs) is an ideal option. VMs allow you to run multiple operating systems simultaneously on the same physical system, which organisations are capable of supporting. For companies seeking a more cutting-edge approach where one is able to segment services, taking the 'container' route is highly encouraged. The third option is to remain on bare metal and leverage this environment to act like a cloud environment through a graphical interface that provisions and de-provisions, rather than entering it manually.

What are the advantages and disadvantages of each of these approaches?

The use of virtual machines is a convenient, proven technology that is easy to maintain and can skillfully provision applications. While multiple OS environments can coexist on the same machine completely isolated from each other, the disadvantage of VMs running on the same host computer is that it may impact performance.

Container-based virtualisation is extremely popular in cloud computing today. Although VMs and containers share similar characteristics, there are several key differences. Containerised applications can run in different environments by abstracting the OS and physical infrastructure. They bring an added level of performance in comparison to VMs due to not having to rely on a hypervisor and, typically, have the ability to scale more easily than other technologies. The size of an average container is smaller than that of a VM, allowing the server to host significantly more containers. The technology requires fewer servers and other costly OPEX resources, making it a very cost-effective solution. The main drawback of container-based virtualisation is security. Having containers less isolated from each other means that any issues within the kernel may jeopardise the security of others containers.

Bare metal cloud promises the flexibility of public cloud without a virtualisation layer. The primary difference is that the service taps into a physical server and since the server is rarely virtualised, users get access to all of its storage, compute and network resources. The ability to control the server and all of its parts is by far the most notable benefit of bare-metal. While this model has the best performance, its disadvantage is that it's less flexible.

What elements of video processing are still best served by dedicated hardware and what is the optimal combination of cloud and hardware technologies to ensure maximum efficiency?

This would be any system that requires an application that is not compatible with general purpose processors. One example is the use of FPGA technologies, for example, to handle single-purpose video transcode workloads that are fairly compute-intensive. Or, there are SDI modules used to process motion-adaptive de-interlacing, up/down/cross scaling and mixing/compositing for all resolutions including 4K. And yet, in both cases, these modules are available on PCIe technology, thus they can be easily integrated into COTS platforms as part of any IP Network or cloud environment via a bare metal installation.

What solutions is Kontron planning to highlight at IBC?

Kontron is excited to be introducing three open source cloud infrastructure deployment models – two based on OpenStack (VMs and Ironic Bare Metal), and one based on Docker/Kubernetes containers.

Kontron will show all in one rack – multiple solutions for HD/UHD/4K video encode/decode on various Kontron and partner "converged" COTS hardware and software solutions, using CPU/GPU, FPGA, SDI, and SDI-IP SFP/top-of-rack switch technologies.

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box in different rooms, and give the Echo control of what gets played where, that could be challenging from a business perspective."

EE and YouView are focusing on Amazon Alexa for now, nevertheless. For Netgem's Thevenot, Alexa is an obvious starting place, providing an agile API that enables the implementation of multiple features. Amazon's Video Manager is designed to enable easy communication between its devices and the set-top box. The Amazon voice recognition system can also enable personalisation based on the profile of the user. Thevenot says that the Alexa APIs are not currently sharing user profiles with Netgem's platform but that this will come within a year, enabling the system to present relevant recommendations based on whoever is speaking to the device.

However the main attraction of deploying voice commands via a digital assistant – and Amazon in particular – is that these devices already have significant penetration.

"Our goal is to explore the real value of voice to our users and how it can integrate with their household. There have been previous attempts to do voice, but people are not using those direct input mechanisms. The Alexa or Google Home [platforms] are more prevalent and pervasive. That is where it has real value," says YouView's Henry. "I think the direct input device will have a place, but the main thing is to make it pervasive. The input mechanism and how you trigger that voice input are secondary issues. We haven't ruled out using boxes or remote controls, and the other obvious device is mobile phones."

YouView's partners already have mobile apps to enable interaction with their on-demand players, all of which are present on YouView, and YouView has its own app, which enables functions such as remote recording.

Ruwido has put forward the concept of the multimodal device, including voice input.

"You could have Alexa in the living room and then also use your phone when you are on the move. Voice entry has been around on mobiles, and also on wearables, for some time and we have experimented with that," says Henry. "We have put ourselves in a good position with the rollout of our next-generation app, which gives us a good foundation. Where it gets interesting is how to make content relevant and how to do a federated user interface, bringing in our content partners' apps on our platforms. We want to keep the user journey seamless."

Control of the experience

Digital assistants do have some technical disadvantages. The device may not be situated next to the viewer, so there may be a clash between the voice of the viewer and the TV soundtrack, for example. For this reason, the use of a microphone in the remote control could provide a better experience.

Ruwido's Maier additionally argues that voice works best in combination with other means of inputting commands, and sets forth a vision of the 'multimodal' input device.

"Analogue functions will be carried out by mechanisms other than voice. We've spent a lot of effort on this," says Maier. He argues that basic navigation functions – such as left or right on a grid, or surfing through a channel listing – are best carried out via touch and haptic feed back from a remote, for example.

"There is a huge interest in the market in organic haptic surfing and more contextual navigation in combination with profiling," he says. "With our remote, if you pick it up, the system knows where you are in the home. If you talk, the system can converse with you."

Maier says that voice recognition can be used not only for parental control but to deliver recommendations based on personal profiles. But while search will be voice-based, channel surfing and other functions will remain based on touch. For all of these reasons, and because it is more complex to hook up third-party consumer devices to the TV, he believes that the

TiVo technology could enable voice interaction via devices including wearables.

remote control has a future.

"We are not concerned that the remote control will be replaced," he says. "With a mobile you have to connect it with the box and get an SMS to confirm and so on. The mobile is a private device that you won't use for public or shared applications. People like to have a remote control to talk with the system. They can press a button and know when it is closed down. We are convinced that the remote will become more important."

While building voice functionality directly into the remote and set-top carries a cost to the operator, Maier believes this will be something pay TV operators will be happy to accept because the technology provides "a calling card" that ties the user to the service.

The main advantage for service providers of using the remote and set-top is that it enables them to stay in control of the TV experience. Of course, in the set-top box space, implementation of voice also requires upgrading the hardware in the home.

"Where we see voice being implemented is as part of a hardware renewal cycle," says TiVo's Dawes, who adds that the decision to deploy a 4K UHD box could provide an obvious point at which voice could be enabled in a new generation of devices.

The key to the appeal of voice control is that it could enable users to untether their active search for content from the current restrictions of the EPG, enabling them ideally to jump to the content they are looking for and to search across multiple content sources on their own terms. The popularity of voice is growing, particularly among younger age groups, and sources of content are proliferating, all of which augurs well for the future of voice search. But how voice search develops alongside the delivery of increasingly sophisticated personalised recommendations, whether it functions as a standalone mode of input or as a complement to other ways of navigating via a remote control, and where is sits in viewers' overall priorities, remain to be worked out. ●

Magine

Q&A: Rahl Puri, Magine

Rahul Puri, general manager of Magine Digital Media and CTO at Magine, talks about the key requirements of getting an OTT TV service up and running.

What are the key elements needed to build a fully-functioning OTT TV service?
A fully functioning OTT TV service should actively engage customers with high-quality content, strong user experiences and attractive pricing models – i.e. subscription, PPV etc. Services also need to meet the expectations and demands of today's user and provide high-quality video streams that can be watched anytime, anywhere. Magine's media platform is built to accommodate all of these requirements in an integrated way, in addition to offering deep analytics that can inform decisions relating to the content acquisition, user engagement and monetisation. Our full end-to-end solutions make it easy for operators and content owners to get up and running with an OTT service that has the ability to attract, engage and successfully monetize its users.

What are the key challenges OTT providers face in getting services up and running?
The biggest challenge we see in the industry relates to the acquisition of content. From a technical perspective, the challenges arise from choosing either best-of-breed point products or a solution that integrates the entire value chain, from ingestion of content to user experience and monetization. Magine's approach is based on the need to adapt quickly, without having to deal with integration challenges that can arise with best of breed point products. Agility in Magine's cloud offering enables our partners to adapt to the changing environment they compete in.

What are the advantages to OTT service providers of outsourcing their platform requirements to a third-party online video platform provider?
Service providers must concentrate on their core business – acquiring the right content and customers for growth. Magine views its relationships as a partnership – not as an outsourcer. This mindset enables us to best serve our partners, ensuring they grow while at the same time continuing to advance the capabilities of the platform based on real market needs.

How significant an advantage is it for OTT providers to be able to reach a global audience and how big do you think the market is for services with global reach?
The world is a large place with a lot of people, and the growth of multi-platform and on-demand content consumption has advanced the demand for high-quality cloud streaming. An OTT provider who can offer this on a global scale does have an advantage, but for many OTT providers, going global is more than just opening up a platform for all to use. OTT providers looking to scale globally should focus on acquiring content that attracts their target audience in each market. Magine's analytics platform provides near real-time feedback for operators that perform in a global setting, enabling our partners to understand their audience, demographics and geographies and most importantly who is watching what content, when and where. Our partners that decide to go global are at a significant competitive advantage.

What are the key lessons that Magine has learnt from owning and operating its own direct-to-consumer business?
Magine has six years' experience operating direct-to-consumer businesses in Scandinavia and Germany. Thanks to this we have a deep understanding and close relations to both the content industry and the consumers. The real key to success is offering an integrated platform that provides deep analytics. Analytics are at the core of Magine's direct-to-consumer business and informs every decision to be taken, from the content acquired to user experiences, to whether or not to invest in more infrastructure in another part of the world. Data generated by our analytics platform also ensures the continuous and rapid development of our partner's services, alongside learnings we take from our in-market consumer services.

Diving deeper into data

Video service providers are still attempting to come to terms with how to manage and use big data. Identifying and focusing on key areas such as specific elements of marketing, targeted advertising and churn reduction can point the way ahead, writes Anna Tobin.

The amount of data being collected by content operators every day is phenomenal. As Guillaume de Posch, co-CEO of RTL Group, said in his keynote speech at the Let's Go Connected event in Brussels in June: "State of the art technology and big data are key elements of all successful business models for the digital media world, from Google to Facebook, from Netflix to Amazon. Data is the 'new oil'." The super powers that are Netflix, Google, Apple, Microsoft, Amazon and Facebook know

how to mine these vast piles of knowledge and exploit them to their full potential. Nearly everyone else is still trying to figure out how to get the best from their data and some will prove more successful at it than others.

To squeeze every drop of useable information from your operating system you need to pick up data from every conceivable point in your distribution chain, says Mikael Dahlgren, CEO of Agama Technologies. "Video service providers are quickly becoming data-driven. More and more, operator processes are being

supported by data and analytics; and, looking to the future, being data-driven will be a critical success factor for most, if not all, areas of operation," he says. "We are currently working with a lot of operators in this area, helping them to improve their services and better understand their customers. Examples of this range from continuous improvements to their technical infrastructure, to on-boarding of new customers and churn prevention through proactive customer care."

Learning how to maximise and make

research figures aggregated by audience measurement companies such as BARB in the UK.

Going forward, free-to-air broadcasters do have three things in their favour, however, points out Bhavesh Vaghela, CEO of Paywizard: "Historically, free-to-air broadcasters haven't had a direct relationship with their consumers and don't have direct one-to-one information about them, but what they do have is reach, brand and some degree of loyalty," he says. "To build on this, you find that a lot of those operators are now trying to find a monetisation angle, whether that be in the pay-per-view environment or through catch-up services. These are areas where they can start building a relationship with their viewers by having them register, so that they can start building their data up over a period of time."

They might not have been doing anything with it, but dedicated pay TV operators have been collecting a range of data from their customers for years, points out Simon Trudelle, senior director of product marketing

know it's valuable so we want to hold on to it and use it in the future; and, then there is a third class who are the most sophisticated, who are actually putting in place their own data science teams and their own analytics products that actually processes data to help them to try and understand subscriber trends, predict churn, predict conversion rates and try to create a better marketing programme."

A marketer's dream

All of this data is invaluable when it comes to marketing. Increasingly, data is being used to feed content recommendation engines. Taking the lead from e-commerce, these subtly plug offerings to consumers, just as other retailers have been doing online for some time. Viewers are being told that 'people who watched what you have just watched, also enjoyed this series', for example.

Operators are increasingly interested in the bigger picture, however, says Haslam at

> **"Pay TV service providers still enjoy privileged access to the big screen TV set and that's a unique source of data."**
>
> **Simon Trudelle, Nagra**

at TV technology outfit Nagra. "Pay TV service providers still enjoy privileged access to the big screen TV set and that's a unique source of data," he says. "While the personal data that can be collected from an set-top box is potentially less extensive than what silicon giants can capture on personal devices such as PCs, tablets and phones, it is still a very rich, media-based source that has value for TV advertisers and, increasingly, for other media and smart city ecosystem partners."

Not all content operators, even long-in-the-tooth service providers that have been collecting data for years, make the most of this information, however. The sophistication of content providers varies greatly when it comes to using that data, says Ed Haslam chief marketing officer at Conviva. "Some operators are just letting this data pass through and fall into the ether; others are doing the full collection and they might be saying we don't know exactly what to do with it today, but we

Conviva. "It's not really about the [individual] consumer so much specifically, as it is about trends and consumption by groups of consumers. It's all anonymised, but what's coming back is minutes watched, types of device, geography and time of day. Then there is also all the quality data which covers: what was the quality level of the stream in terms of its bitrate, how long did the content take to start, for example," he says. "Service providers are being offered the opportunity to process or understand an enormous amount of data as it relates to their service and their audiences who are viewing it. This allows them to say 'show me certain groupings that are similar in terms of certain geographies or certain device types or certain content types or engagement levels'. From this, they are able to put together cohorts that allow them to do better marketing, with better understanding and predictions of where trends will be going. It's predictive analytics."

A whole new company culture is required,

the most of the data they collect is key to the long-term survival of both larger and smaller players, but a reluctance to experiment, budget restrictions, skills shortages and regional and pan-regional regulations make what is already a risky business, much trickier.

The business model and original one-way technology of traditional free-to-air broadcasters means that they have to make the biggest leap when it comes to data collection. What little data they started out with on their viewership was based on general audience

however, to see off the old legacy mindset and start exploiting potential data sources. Trudelle at Nagra backs this up with research conducted in the second quarter of 2017 by MTM London for the Nagra-sponsored Pay TV Innovation Forum. He says: "It shows that 'investments in big data and analytics' is one of the five most important steps – scoring 30% – pay TV service providers need to take to ensure that they are fit-for-the-future and well-positioned to innovate successfully."

Pay TV operators need to collect their data at every possible opportunity and, more importantly, use it. Collecting consumer data from viewing habits, including VOD, streaming on the go, linear TV viewing panels and even social-media, allows pay TV platforms to gain insight into what customers are watching, how they are watching it and on what platform, says Jamie West, group director of advanced advertising at Sky UK. "With the increase of available platforms, including Sky Go and Sky Q's multi-room set-top-boxes, we can now understand even more about how Sky customers are viewing content," he says.

While start-up services don't have the brand credibility or maybe the reach of long-standing

> ### "There is a mindset that says I don't want my customer to leave, but if you use data correctly, it will tell you that this customer is a serial churner."
> **Bhavesh Vaghela, Paywizard**

players, they may have a better relationship with their customers, because they launched with a rapid-uptake pay model and have been collecting specific data from day one. They are also quick to learn from the big, successful companies.

And, if smaller players feel that they can't do all the data collection and analysis themselves, they could look to partner with other players. Trudelle at Nagra cites the example of one of Nagra's customers that is hoping to profit from such an opportunity. "StarHub, a Nagra customer based in a small and constrained geographical market, Singapore, announced earlier this year the launch of Hubtricity, a tech centre that offers access to various sources of user and network data it collects, enabling third-party firms to leverage the potential of the data collected to deliver new services,

including enriching existing data and using this augmented input to run campaigns on various online properties," he explains. "This example shows that smaller players need to think smart, focus on the specifics of their local operations and collect usage and network data whenever possible. Through partnerships with tech vendors, it is then possible for them to offer value added services that take advantage of the large Silicon giant platforms, while focusing on delivering value to their subscribers and regional partners."

Advertisers

When viewers were limited to a handful of channels, operators were focused on giving advertisers what they wanted. Now data allows them to aim to please both advertisers and viewers, amid the huge amount of channel choice now on offer.

"TV advertising remains the most reliable, effective and brand-safe platform for advertisers, it provides robust data and customer data – not just email addresses. It allows us to build extensive advanced advertising solutions, helping brands at every stage of the marketing journey," explains West at Sky. "With our market leading Sky AdSmart technology, we can target campaigns for brands of all sizes reaching their target audience without the brand-safety and viewability issues associated with some online advertising. This means that we're introducing real flexibility to TV advertising, opening it up to businesses of all sizes. Democratising TV, so the most effective ad medium isn't just the domain of big budgets brands. From local taxi firms to ultra-niche premium brands, we're allowing brands to anonymously match their own data to Sky's to build bespoke and targeted campaigns – there is something for all budgets and objectives. With TV advertising, it is not a three-second thumb swipe. We're saying to agencies and clients, 'You can trust

us. We only charge you if your ad is seen. And, by the way, it's really brand safe.'"

Not only can data that is collected about viewers be used by content providers to allow advertisers to specifically target those viewers who are most likely to buy their products and services, it can also be used to create programming that viewers want to see which, in turn, feeds the adverting business. Keep this cycle going and profits are guaranteed.

"If we look at the likes of Netflix, consumer data is actually used extensively in every aspect of their business operations, including for content creation," says Trudelle at Nagra. "It is clear that access to data is also becoming a new currency for content producers and distributors and it is a strong factor motivating content owners to ramp up their direct-to-consumer operations so they get access to consumer data."

Although consumer demand has always had some impact on content production, this has traditionally been based on a hunch and very general viewing figures, now big data and analytics makes it possible to truly understand consumer behaviours, interests and appetites and feed this back to advertisers.

"We can use our data to improve our commissioning decisions for Sky original productions, as well as harness the rich data to provide brands with a deeper understanding of their audience, smarter cross-platform executions and, ultimately, more engaging and effective advertising campaigns," says West at Sky. "Combining this data with Sky's technology allows us to surface new programs for customers and make recommendations on shows they might like. With our new platform, Sky Q, we built personalisation for customers at its core, meaning we can offer the whole household viewing tailored to them, depending on the time of day, what room they are viewing in and what device they are using."

Churn in check

OTT services such as Netflix and Amazon Prime have revolutionised the way consumers buy their content. Consumers are now less loyal to specific service providers. They may, for example, sign up to a service for the latest season of *Game of Thrones*, but then end their subscription once they've viewed every episode, only to sign up again once more enticing content arrives on the service.

Sky's advanced TV services have enabled it to find out more about customer behaviour.

They no longer want to tie themselves into long-term contracts and in most cases they don't have to. It's now much easier to change provider, and many viewers see this selective purchase model as saving them money.

"We do a lot of consumer research and what we see is that when people sign up to OTT services, such as Netflix, they are already in the mindset that they are going to spend less money elsewhere as a result," says Vaghela at Paywizard. "They might cancel their Sky Movies subscription for example, and what we have seen is that around 25% of customers do actually reduce their spend elsewhere."

On a more positive note, Vaghela has found that this trend can be reversed. "Conversely though, if you treat a customer well enough they will end up spending more," he says. "So, while you are providing these micro services and giving the customer more flexibility, if you play your cards right and you build a relationship well enough they will end up spending more money with you."

Niche channels that really understand their customers could fare even better than massive mainstream providers from their data. If a horse-racing channel can provide a steady stream of races that its subscribers want to watch, for example, they could be onto a winning formula.

Content is king, says Haslam at Conviva, but it is not always exclusive and that's when consumer loyalty starts to wane: "As that content starts to get syndicated, as it starts to be made available for cross-multiple service providers, to differentiate your service you are going to have to have better recommendation engines and better marketing programmes so that people can discover and find what they want to watch, when they want to watch it."

It's not just viewing data that operators need to look at, points out Vaghela at Paywizard. "You need to understand your online data too, to understand the journey that your customer is going through. Have you made it as easy as possible for the customer to sign up? What does your sign up process actually look like and how much information are you asking for from the customer?" he says. "Once you've signed them up, how good are your recommendations to them and how good is your customer support? Even Netflix has its own contact centre and we did some focus group research, both in the US and the UK, and they were incredibly praised because it is possible to just pick up the phone and contact Netflix and they will help."

Service providers could also cooperate to keep up with the big internet giants. "They can co-operate and integrate their primary data sets – both the data generated by broadcast, online VOD and the set-top box viewing data collected by TV operators. With that they can replicate the same targeting and measurement capabilities of the big digital players and help sustain TV viewing and advertising revenue," says Laurence Miall d'Aout, VP, advanced advertising, Liberty Global.

The lessons taken could be surprising. For example, traditionally, operators have been minded to make it difficult for customers to leave their services, because every monthly subscription counts. But Vaghela at Paywizard says the data shows that if you make it very easy for a customer to leave, they are actually more likely to come back. "There is a mindset that says I don't want my customer to leave, but if you use data correctly, it will tell you that this customer is a serial churner," he says. "Data gives you the opportunity to think about your customers in those segments, whether you are a large company or a small company and actually small companies can be way more nimble and look at the data and truly understand their customer base. They can be much more tailored and personalised to their customers when compared to a larger organisation."

Operators may use their data to try to persuade those that are thinking about leaving to stay and increase their spend instead. To grow the business footprint further, data can also be used to expand into new markets and even to get rid of distribution channels that are not economically viable, says Haslam at Conviva. "Global data sets can help geographic expansion. It can help you to understand which new markets to enter and which distribution partners to approach," he says. "Then there is that almost hidden cost that a lot of people don't think about except the people who are actually in the service themselves, the publishers. That is how many platforms should I support? Do I need to support Apple TV, Samsung, iOS devices and android devices? There are some service providers that support 30 or 40 different platforms and that's incredibly expensive. I think that data in the future can be used to more effectively pick the platforms you want to support and even do this potentially by region. For example you may discover that Android might be much more popular in this particular area and this allows you to split your platform support more effectively."

Data works. Consumer data needs to be used to improve viewers' experience, whether that is through buying, producing or commissioning the content they want to watch, showing them the ads that are relevant to them or surfacing shows on their EPG that will entice them to continue watching and, more importantly, subscribing. It's all about creating a TV viewing experience that someone is keen to pay for, whether that someone is the advertisers, the viewers or a mix of both. For service providers, it's time to get number crunching. ●

Q&A: Ferdinand Maier, ruwido

ruwido CEO Ferdinand Maier talks about TICTACTILE. and the concept of the multimodal TV input device.

What are the values that influence the way ruwido approaches the design of the TV navigation experience?

Design is soul. That is our state of mind and that's what we try to convey through all of our products as design is the most direct way to touch the emotion of the user.

Our research shows that throughout the consumer electronics world design and user experience drive desire. We are constantly working on how to address the kernel behaviour of the user and how to increase the usability of today's TV solutions by evaluating factors like aesthetics, emotion, stimulation, as well as meaning and value for the user.

Entertainment in the living room has to become an easier and more natural experience again. We strongly believe in removing the complexity of navigation and interaction; so while we provide intricate technology inside our input devices, clear and intuitive navigation on the outside is vital.

Tomorrow's TV services will no longer be differentiated just by price, but much more by the way services and content are offered to the consumer. To create a solution that truly supports the user experience, and allows the synchronisation of mind and sense, the graphical user interface must mirror the attitude of the input device and align with its interaction mechanism.

We are committed to creating intuitive interaction devices for our customers that are a joy to use and a joy to own because these are the devices that act as the business card of the operator.

What are the key principles behind the design of the TICTACTILE. system?

TICTACTILE. was designed to offer enhanced smart device navigation on remote controls. The holistic approach integrates an interaction mechanism with a tactile experience, along with a synchronised user interface. The system has the potential to overcome current limitations when interacting with a range of screens as it solves the problem of 'absolute' versus 'relative' pointing.

TICTACTILE. brings the structure of the user interface to the navigation field of the remote control, making moving through content appealing to both the visual and tactile senses and creating a seamless experience for the user.

What are the main use cases envisaged for this type of input device, both inside and outside the living room?

TICTACTILE. offers a holistic interaction mechanism that is easy to use across different screens within the living room but it can also be applied to other business cases, for example in-car infotainment or rear-seat entertainment systems.

Using haptic feedback and tactile senses rather than visual to move through content, we are providing a solution that can truly support user experience excellence as well as contribute to improved safety, for example with in-car navigation systems.

How does the concept of a multimodal TV input device deliver a more intuitive and satisfactory user experience than traditional TV remote controls?

Multimodal input devices represent the natural evolution of the remote control. In a world where the interactive element of television is ever-increasing, our challenge is to create a way to navigate complex user interfaces in synchronisation with mind and sense, while retaining complete control functionality.

Many interaction mechanisms have been tried in the past, ranging from gesture and pointing to touch and speech. However individually, none of these modalities are made for navigating the TV in everyday life. But if different interaction mechanism technologies are fused – touch, for example in combination with haptic feedback, or voice as an additional way for search – the demands of modern user interfaces can be met.

For example, people are used to touch interaction with their smartphones and expect an equivalent with other devices. But if we use the equivalent of smartphone interaction success will be limited on a TV as you are not having a direct manipulation, or absolute pointing, but only relative pointing. To address this, we developed our TICTACTILE. interaction mechanism fusing touch with haptic feedback.

Supporting the range of senses available to users allows people to choose the modality they prefer, improves precision, avoids errors and enhances not only the usability of the system but also the overall user experience by giving the feeling of a natural interaction.

Multimodal input solutions will be further enhanced by exciting emerging technologies such as voice biometrics or mood recognition, allowing the personalisation of interfaces and making content more easily accessible for users.

In the near future, we'll see combinations of different modalities that will make interaction with TV more enjoyable and natural than in the past. The key to success lies in selecting the right type of modality to best support the user experience.

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

Rohde & Schwarz is providing protection against cyber-attacks.

Hack attack:
TV and cybersecrurity

Cyber attacks are increasing in number and becoming more sophisticated, with the cost to corporations running into the billions. With conventional security concepts increasingly powerless against it, protection requires a paradigm shift. Adrian Pennington reports.

Like every other aspect of commerce, economic crime has, to some extent, gone digital. In a hyper-connected business ecosystem that frequently straddles jurisdictions, a breach in any part of that system – including third parties such as service providers or suppliers – can compromise an organisation's digital integrity in a variety of ways.

At one end of the spectrum are the macro events, like Distributed Denial of Service (DDoS) and Domain Name System (DNS) attacks. These types of attacks are loud, noisy and, when they happen, they interrupt service for everyone. DDoS attacks send huge amounts of traffic to interfere with organisations serving up content, while DNS attacks prevent the end user being able to find the services operators are providing to begin with. Both affect large numbers of users at a time and gain attention in the news, adding embarrassment to the existing injury.

One type of attack that can affect both the content provider and the customer equally is when web servers are compromised. According to Akamai, it's not uncommon to see organisations have their site content compromised and embarrassing content put in its place. However, equally common are sites being used to serve malware to customers as they surf the web.

At the other end of the spectrum is the targeted attack. This aims to compromise the computer of a specific user, with the aim of getting access to something that a user has access to. Every industry should worry about an attacker who can get to important financial data or sensitive customer records but broadcasters have the additional worry that their valuable content could find its way online.

As a form of cybercrime, online content redistribution piracy is the major threat to high value content. A report earlier this year from Frontier Economics estimated that counterfeiting and piracy could drain US$4.2 trillion (€3.5 trillion) from the global economy by 2022.

However, service providers also have to consider threats to their network and systems.

"The HBO example clearly shows that data breaches and content theft are not necessarily separate threats," says Peter Oggel, VP of technology, Irdeto. "The same digital and connected TV platforms that cybercriminals target for illegal redistribution of content also act as attack surfaces for hackers looking to

gain access to service providers' networks and potentially steal customer information and other important data. Cybersecurity strategies must consider the whole threat landscape and a 360-degree approach to security is crucial."

Interconnected threat

According to Martin McKeay, senior security advocate at Akamai Technologies, one of the reasons security has become a higher priority is the shift in business model from ad-supported to subscription-based, and the corresponding increase in the storage of personal identifiable information of customers.

SVOD alone will generate 70% of digital revenues in Europe in 2022 according to Dataxis. It forecasts that there will be 80 million additional SVOD subscribers signing up between 2016 and 2022.

"This has fundamentally changed the way media companies need to protect their businesses and their digital assets. It's no longer a matter of 'if' a media company will be attacked, but 'when' they will be attacked," warns McKeay.

At the same time, shows like *Game of Thrones* are incredibly valuable. No one would have cared, back in the day, if an episode of *Happy Days* or *Laverne & Shirley* was leaked. Now, content thefts have tended to result in blackmail demands for money in exchange for not releasing the content before the studio or broadcaster desires it to be released.

As McKeay observes, it's far easier for a hacker to send a well-crafted email laden with malware specifically designed to compromise an executive's system than it ever has been for an insider to walk out the door with a hot script.

"The all-pervasive nature of digital storage, global production and IP distribution of media – in contrast to the physical storage and distribution of tapes previously, for example – means that the attack surface increases, is not geographically bound and attacks are often highly automated and continuous," says Peter Elvidge, VP of technology at TVT.

August's HBO attack appears to have been the most sophisticated yet, targeting the company from multiple points including employees' Twitter feeds. Hackers may have stolen as much as 1.5TB of HBO's data, or seven times more data than the 200GB taken in the Sony hack of 2014, which led to the resignation of Sony Pictures co-chair Amy Pascal.

As these and other cases illustrate, theft of source content is not the only target. Confidential employee data, including salary details, corporate documentation including confidential commercial agreements and emails, and customer data are at risk. Comcast paid a US$33 million settlement in September 2015 relating to theft of 75,000 Xfinity voice customer details; CBS-owned Last.fm had 43 million user details leaked in 2016.

"Media companies are very public and their services are used by entire communities and populations," says McKeay. "A data breach can quickly yield a very large return for a hacker and therefore media companies need to realise that they are walking with a target on their heads."

Pay TV is just one part of the ecosystem impacted: everyone with an interest in the content will suffer – broadcaster, production house, rights owner, OTT streaming services – but quantifying the impact is very challenging.

Quantifying risk and loss

"Hardly any other industry is subject to such a constant and disruptive change as the media and broadcasting industry," says Peter Nöthen, CEO of systems architect Qvest Media. "The need to protect IT infrastructures from cyber-attacks or manipulations, however, will never change. With the rise of OTT offers and bidirectional integration of social media and online platforms, it has become even more crucial to organisations to protect consumer's personal information."

More than one media analyst company contacted by *DTVE* for this report declined to contribute since they lacked data relating to cyber-crime's impact on pay TV. Perhaps that's not surprising. Incidents of fraud have historically been hard to track, not least because organisations are understandably reluctant to publicly divulge theft unless forced to.

The Ponemon Institute, which carries out an annual study across major economies and industries including healthcare, technology and retail, states in its June 2017 edition that the average consolidated cost of a data breach is US$3.62 million.

It found that the country with the highest cost, both per record and per incident, was the US whereas the countries with the lowest cost per record and per incident were Brazil and India. It found that the average size of a data breach – the number of records lost or stolen – increased 1.8% over the last year.

Another study by the same group examined reputation and share value and found that the average drop in stock price on the day the

> ### "The HBO example clearly shows that data breaches and content theft are not necessarily separate threats."
>
> **Peter Oggel, Irdeto**

breach is announced is 5%, that companies lost on average 7% of their customers and that 31% of consumers discontinue their relationship with the company following a breach. "There's no reason to suppose these figures are markedly different when applied to pay TV operators," says Rik Turner, principal analyst, infrastructure solutions, Ovum.

Other surveys have shown that DDoS attacks are the most common form of attack suffered by media companies of all sizes. A study showed that the cost of such an attack can be US$40,000 per hour. The cost of a full data breach could certainly be far more significant than that in bad publicity, retrospective remediation actions required following a breach and in increased regulatory fines.

With the advent of the EU's General Data Protection Regulation in 2018 those costs could be driven even higher, because sanctions can include a fine of up to €10 million or 2% of a company's annual worldwide turnover of the preceding financial year, whichever is greater – far exceeding the current maximum of £500,000 (€545,000).

Norbert Schirmer, VP, business unit end-point security, Rohde & Schwarz Cybersecurity, likens the scale of cybercrime to that of the global drug trade.

According to the report Secure My Site, over half of media IT execs lose sleep worrying about cyber-attacks. Nearly a third admit to
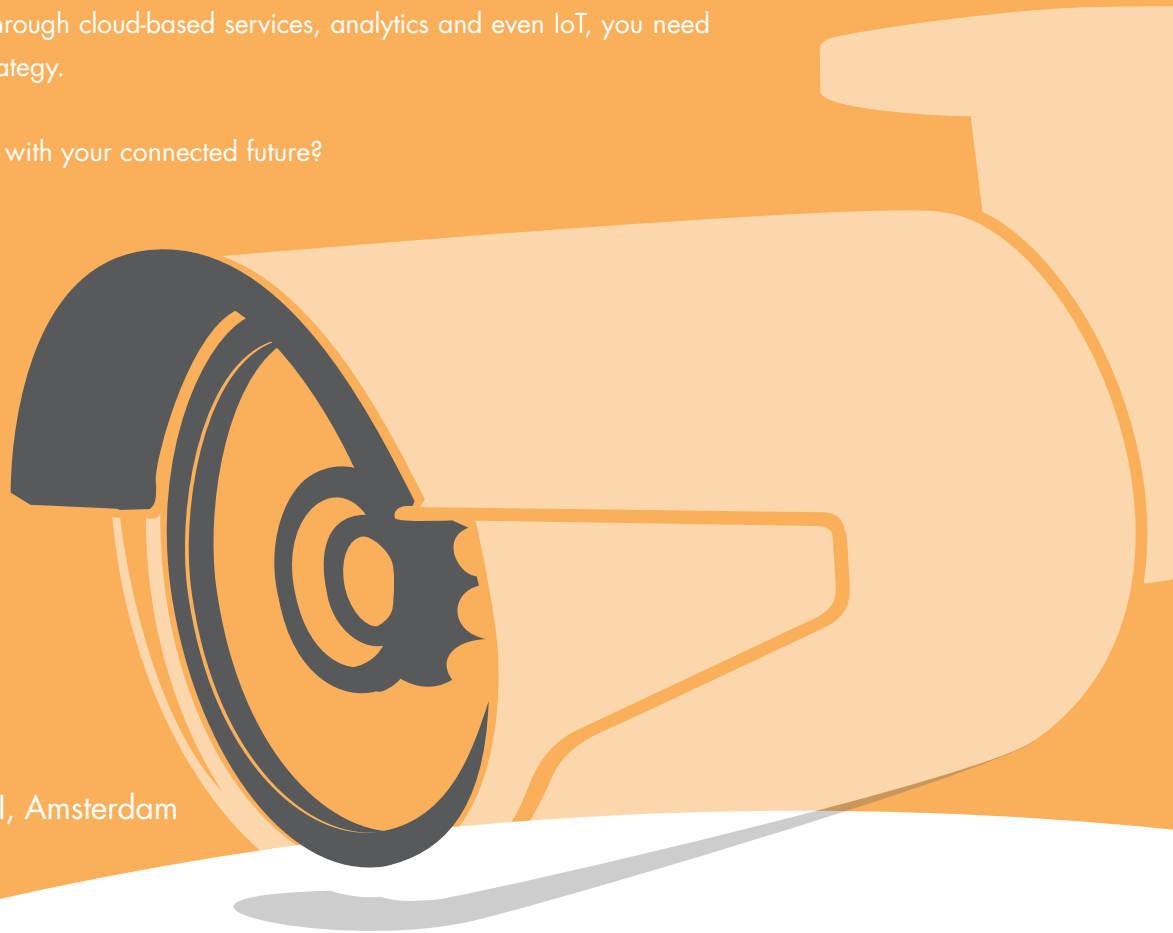
Q&A: Steve Christian, Verimatrix

Steve Christian, SVP of marketing, Verimatrix discusses the opportunities and challenges facing operators looking to expand into the Internet of Things

How well-placed are pay TV and multi-play operators to extend their range of services to provide Internet of Things and Smart Home applications?

Video service providers are, in some respects ideally positioned to enable smart home IoT services. IoT applications such as surveillance or energy management come under the smart home umbrella and are natural areas for operators to extend into. They already provide last mile broadband connectivity along with an intelligent device in the home, such as a set-top box or gateway that could serve as a hub. However, few operators have yet considered the full implications and requirements of consumer IoT services, especially over security which is absolutely critical for gaining the trust of customers. Fortunately, many operators have of course deployed revenue protection security for their video services, which can be extended to IoT.

What are the main security-related challenges facing multi-play operators and other players looking to expand into the Internet of Things?

Two key points have emerged from investigation of actual or potential IoT breaches at different levels, which can affect national security, life and limb, as well as brand reputation and revenue. Firstly, security must be at the forefront when planning and deploying IoT services, incorporated at the specification stage rather than bolted on afterwards.

Secondly and most importantly, security must be continually monitored and, very likely, upgraded throughout the lifecycle of the service or application to counter emerging threats as they arise. This in turn depends on the initial design to ensure that the updating process can itself be executed securely as a result of comprehensive monitoring. Inevitably attacks will happen, so the monitoring process must be capable of proactively detecting threat patterns, as well as intrusions, enabling immediate actions that minimize damage and as far as possible localise the penetration.

What do operators need to think about when choosing technology partners?

Operators need partners that have already undertaken the analysis and development needed to deploy secure IoT services. This means finding vendors that have addressed similar challenges in the video arena and developed a coherent strategy for IoT applications, particularly for security. Absolutely critical is the proven ability to manage the deployment of security in the underlying SoCs and then in the devices at the manufacturing stage to yield IoT clients and components capable of meeting threats and being upgraded in the field.

Operating with an ecosystem of SoCs vendors that support chipset level personalisation helps to ensure that device manufacturers can install a code image that's signed and made consistent with the credentials in the chipset. And the chipset's security controls must be switched to only allow boot to proceed via the device's secure image. Device authentication can then avoid unauthorised intrusion, while the communications links must also be secured to prevent interception or alteration of data during transit.

How can data analytics from security systems help deliver the Internet of Things?

In pay TV, the security infrastructure can yield unique insights about both QoS and customer behavior through its privileged position as custodian of the core service, managing entitlements and controlling encryption. This will also be true for IoT, but with the difference that the role of analytics will vary greatly between the various service sectors. There is obvious potential in areas, such as smart metering, through aggregation of individual household consumption data into regional databases for intelligent energy management. There will be scope for significant savings by micro-matching power generation to consumption, as well as for planning future capacity on both a seasonal and long-term basis. Again, as for pay TV, security providers will play a key role not only in providing analytics data but also securing it and ensuring privacy, without which the whole IoT enterprise would be undermined.

How well positioned is Verimatrix overall to play an active role in this market and what solutions can it offer?

Verimatrix was early to recognize the potential for protecting IoT services by virtue of its 12 plus years of experience in pay TV security, which poses many similar threats. Verimatrix has now adapted and extended its security infrastructure to more directly address critical security gaps that exist with many current IoT services. We have launched a new IoT security solution called Vtegrity that addresses three core security elements that work in concert to underpin an IoT service, protecting revenue streams and maintaining consumer confidence. These are device integrity to ensure client devices and the software they are executing have not been compromised by any means at any stage in their lifecycle. Communications integrity prevents intrusion by unauthorised clients or users, ensuring that only devices explicitly identifiable are allowed to join a given IoT network through secure certificate provisioning and device authentication. Finally, service integrity defends against emerging threats or imminent attacks through proactive threat monitoring and tamper detection.

For more information, please visit: www.verimatrix.com/vtegrity

experiencing an attack. And while 61% of CEOs admit concern about cyber security less than half of board members request information about their organisation's state of cyber-readiness, reports PwC.

"There's no question that cybersecurity is now at the top of board agendas," says Mark Harrison, managing director, Digital Production Partnership (DPP). "There is a lot of anxiety about how you achieve it."

A collection of CEOs and CTOs will convene behind closed doors at IBC to thrash out cybersecurity concerns. "If there is one lesson all companies should [understand] it's that cybercrime is not an IT problem," says PwC partner Kris McConkey.

Holistic approach

There is of course no silver bullet.

"No matter what a security vendor will tell you, there is no single piece of software or managed security service that will guarantee and disarm a cyber criminal from breaching your systems," says Elvidge. "Whether you're a content owner or SVOD provider, security is a matter of baking security into your corporate culture, along with continually testing and ensuring systems are up to date."

Broadcasters and pay TV operators "should look strategically across their entire business and devise multi-layered defences that will protect their assets" suggests McKeay. "Particularly when it comes to applications and

decade ago, particularly when targeted attacks were rare and the losses from most attacks were minimal and easily forgotten. But modern attackers are taking a more strategic approach – they're targeting specific companies, their users and the valuable data they hold," he says.

In the GoT example, attackers sent a fake email to an executive and when it was opened, the malware contained in the attachment executed. This malware, often called a RAT or Remote Access Tool, enabled the attackers to view and download everything the executive had access to.

Another tactic used by attackers may be to disrupt the bandwidth needed to serve up the content for high-speed users. According to McKeay, "If an attacker can produce an attack that causes buffering for the end user by tying up the network of the provider, they can cause significant complaints from the user base and the ratings of the provider takes a hit."

Ransomware, in particular, plays a large role in attacks on sensitive data. Ransomware encrypts computer files and, in principle, encrypts the contents of a file so that it cannot be opened without a key that correctly decrypts the file. A ransom must be paid to receive the key. Once malware has infected a computer, it can spread to other devices in the network and completely cripple operations.

"Attacks such as WannaCry and Petya have changed the game by using ransomware, which usually extorts funds, as a cover," says Schirmer. "This is evidenced by the fact that Petya erases portions of the hard drive instead of

programmes have no chance of warding off these attacks."

Verimatrix is concerned that certain service providers collect data without understanding how it should be used – or how it should be protected.

"If data is being aggregated that isn't going to provide any value, it should be deleted before it has the chance to become a liability," says CTO Petr Peterka. "There are various rules and guidelines in place about how data can be used and when it needs to be anonymised. These are new considerations that service providers didn't need to understand or address just a few years ago."

Verimatrix claims to be the first company to offer fully integrated encryption, key management and watermarking solutions for both managed and unmanaged networks. Its capabilities for video tracking and forensic identification offers protection for high-value content such as UHD, early release VOD and live content.

"The toolbox includes VideoMark client-side and StreamMark server-side offerings for forensic tracking, through which Verimatrix equips service providers with a range of more flexible anti-piracy tools and deployment options that they need to secure and monetise the latest premium content services and delivery methods," says Peterka.

R&S's Schirmer advocates what he calls proactive solutions. For example, by using trusted virtual domains, the production servers that contain films can be isolated from the regular Office IT and better protected.

"If data is being aggregated that isn't going to provide any value, it should be deleted before it has the chance to become a liability."

Petr Peterka, Verimatrix

services – for both internal use and external websites and OTT apps – their data centres and their DNS. Since hackers and malicious users now use many attack vectors – media companies need to be prepared on all fronts."

He says many organisations have historically viewed security as something to be tacked on at the end of the process – something that is simply icing on the cake, and often more bother than it's worth.

"This was an acceptable stance to take a

blocking access, and that the hackers proved to be very negligent in collecting their ransoms." Schirmer calculates that around 360,000 new viruses are discovered daily. In the first three days after discovery, 27% of malware remains undetected. "This means that attackers have already infected many thousands of devices before they are discovered and stopped," he says. "New types of attacks, called zero-day exploits, exploit security gaps before they can be found and closed. Antivirus software

Isolating servers

"It is also important that products are developed based on the Security by Design principle, where security is an explicit requirement in the development process and holistic security measures are taken into consideration, implemented and tested at all stages – starting with product inception," says Schirmer. "Beyond isolating production servers, proactive solutions can and must be implemented."

The virtual browser is an example of a security solution that does not react to an attack and instead proactively keeps it from reaching the IT system. Around 70% of malware enters the network via browsers. Strict isolation is used to decrease the range of targets.

"Browsing takes place in a virtual browser

that is hermetically isolated from all other applications and data, making corporate data invisible to an attack such as ransomware," he explains. "Viruses, Trojans and similar malware remain enclosed in this environment and cannot spread to the computer or local network. Attacks on the Windows host

system fail, regardless of the type of attack. If malicious code corrupts the browser, the virtual browser environment simply restarts and is immediately virus-free and ready for use."

New firewall technologies should also be employed. Conventional firewall technologies use blacklists that block only data packets that

have known attack patterns, which Schirmer says is useless against new and unknown attacks. "More effective are next generation firewalls whose new technologies proactively inspect data packets," he says. "Packets are allowed to pass only if they can identify themselves as friendly. All others, including

Securing the content supply chain

Last spring, Netflix was the victim of a ransomware attack. Episodes of *Orange is the New Black* (*pictured*) that were still in production were leaked from Larson Studios in Los Angeles. Larson Studios was responsible for series post-production and although it paid the requested amount, the hacker (dubbed Dark Overlord) leaked episodes anyway. This example clearly demonstrates that the gateways for attacks can also lie with partners or distributors.

"It's not possible to provide 100% protection against such incidents," says Norbert Schirmer, VP, business unit end-point security, Rohde & Schwarz Cybersecurity. "However, it's clear that partners and distributors must take cyber security seriously, if only because of the high penalties they face if paid content ends up on the internet free of charge as a result of their security gaps."

Operators are increasingly challenging content owners to take more action to protect the content they are licensing to them. "If an operator in another territory leaks the content, it can often be just as big of a problem for operator A as it is for operator B, even though

operator A is doing everything in its power to protect the content," says Christopher Schouten Nagra's senior director of product marketing. "NexGuard's Network ID is one solution for this. It's an invisible forensic mark which content owners can embed in their distributed content to determine which operator's network was the source of the leak. That way the content owner can demand that the offending operator take stronger measures to ensure content remains protected."

One of the most common requirements is when studios stipulate that content must be secured as it passes through the content supply workflow and as it is transmitted to the audience via some form of CA or DRM. This is normally outlined in the content agreement.

"Securing the content supply chain is a challenge, due to the need to work with numerous specialist providers, for example, to create language versions and provide international compliance services," says Peter Elvidge, VP of technology at TVT. "The best approach is to use a tool that supports the end-to-end workflow, enabling people to do their

craft work without providing access to the high resolution media. It's also critical that tools enable different organisations to work together without resorting to spreadsheets, Google Docs or sending files backwards and forwards. At the same time, all management systems must retain a full audit trail of who had access to what."

"Ballooning challenges include content duplicates with variable quality, difficulties in tracking distributed copies and difficulty in quality-checking overall statistics of all content traded," says Anders Paulshus, security development director, Conax. "Service providers are also facing growing challenges such as investment in transcoders and operation of content workflow, variable video and sound quality from different sources, many different metadata formats and pressures from time to market for new content."

CA and DRM have been successfully applied by IPTV, cable and satellite TV service operators. The addition of browsers as end points is a harder beast to secure, and requires more complex DRMs and integrations between applications, players DRMs and backend platforms.

"Again, there is no magic bullet, although having well-designed video players, and continually updated browsers, is an absolutely critical step in ensuring security – and reducing the risk of a breach," says Elvidge.

Industry wide initiatives led by bodies such as the DPP in the UK and NABA in North America are helping to raise awareness, share best practice and bring together the broadcast community to better protect itself and help co-ordinate better defences.

"Many cybercriminal networks are spread over different countries and jurisdictions so one company on its own would find it difficult to have the necessary impact," says Peter Oggel, VP of technology, Irdeto. "It's down to every player in the ecosystem to work together collaboratively to beat cybercriminals not just individual organisations."

unknown data packets, are rejected."

Pre-empting potential threats is also hugely valuable, and allows platform builders to take a proactive approach to prevention. The key here, according to Oggel, is understanding the threat landscape, from the evolution of piracy to how hackers are using increasingly sophisticated attacks to target networks and data theft.

"This is a major challenge for service providers, as the main piracy threat has shifted from control word sharing to content redistribution and the increasing use of illicit streaming devices and pirate plug-ins.

"Today's new generation of pirates have additional goals for hacking than getting hold of an operator's premium content."

Anders Paulshus, Conax

Meanwhile, hackers are evolving their attacks from tactics like phishing, to gain credentials, to using WiFi to steal credentials via Evil Twin attacks. Working with a security partner who has expertise in both the media industry to protect content as well as really understanding cybersecurity is what's needed. That blended knowledge is key."

One of the most dangerous situations is when an operator decides to connect devices that were never designed to be robust against network attacks. This applies to both headend components as well as client devices such as STBs. Conax gives the example of retro-fitting network capabilities in vulnerable STBs that may not only expose the operator to be held ransom in the face of a DoS attack, but could equally provide an attacker the entry point into a household network.

"This is why the Conax STB security evaluation has for some time now reported network attack robustness as a separate security level so as to raise awareness to operators that security threats to a STB population encompasses more than simply content protection," says Anders Paulshus, security development director.

Although the valuable content within MAM systems will often reside in a different part of the organisation than billing and subscriber data, the connected nature of many networks means that breaching one area might lead to lateral movement to the other.

Personnel breaches

"Some operators are enacting similar types of controls to banks and standards like PCI-DSS – mandated by credit card companies for anyone handling card data – are in many ways helping to focus minds," says Elvidge. "The main issue is that many operators leave much of the payment taking to third parties and although their brands are attached to this process, they may not be directly hands-on. For operators in this situation, it is a case of holding feet over the fire of the financial service providers and getting them to show how they are maintaining operational security and to what standards they are compliant against."

According to recent DBIR research, a quarter of all breaches involve an 'internal actor', underlining the need to train staff and place controls that ensure only the right people have access to content.

Steve Plunkett, chief technology officer, broadcast and media services, Ericsson, says: "Many of the recent high profile attacks have originated inside organisations' digital perimeter on compromised machines, often the result of phishing attacks where users unwittingly installed malicious software on their PCs by interacting with nefarious emails purporting to be from trusted sources.

Operators can take as holistic an approach as they want but even that may not be enough. Conax warns that 'housejacking' could be the next big threat to pay TV.

"While pay TV operators are taking measures to protect their content, they may not be aware that today's new generation of pirates also have additional goals for hacking than getting hold of an operator's premium content," says Paulshus. "The IoT and connected nature of all we own increases hackable IP addresses. DDoS attacks present new threat for operators as hybrid STBs may present attractive vehicles to access connected homes based on 'always on', internet-based services."

Hackers exploiting unsecured hybrid STBs may aim to install malware to take control of the STB, or as a platform for attacking other devices in the home.

Everything with an internet connection can be compromised: lights, credit card details stolen, webcams, electronic signatures for automatic garages to gain access to the home.

"Hacking connected devices such as hybrid STBs is easy and inexpensive to carry out, and a high level of knowledge about hybrid STBs is not necessary to compromise them," Paulshus says. "Hacking kits and malware created by advanced hackers are available on forums for use by anyone who can follow a set of instructions. As these hacks become more frequent, the general public's interest in security will grow and, eventually, they will demand that IoT suppliers implement the necessary precautions to ensure that their private information is kept safe."

Separation technologies can help secure hybrid STBs by preventing malicious apps and malicious software from attacking the security core of the STB.

Qvest reports that the incorporation of security concepts as a part of RFP requirements as steadily increasing.

"We advise operators and suppliers to take a three-step approach to protect their companies against cyber threats," says Nöthen. "The first is to perform a comprehensive assessment of cybersecurity postures of their infrastructures. The assessment will lead to the development of a determined strategy to improve cyber security postures by adding network security devices and layers as well as further network protection measures. Lastly, the set-up of a security operation centre is needed to actively monitor threats. Alternatively, media companies can commission managed security service provider that offer 24x7 security monitoring."

While nothing will cast-iron guarantee content against cyberattack or pirated streams, following these best practices for security can reduce exposure.

"Unfortunately, many organisations still don't recognise cybercrime as it truly is – a competing business entity that continues to grow its illegal offerings," says Oggel. "Cybersecurity strategies in the pay TV industry must consider a broad range of vulnerabilities. Once organisations and the content production market have made this mind-shift, the more effective the industry will be at recognising and combatting cybercrime." ●

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Q&A: Simon Trudelle, NAGRA

Simon Trudelle, senior director, product marketing at NAGRA, talks about the opportunities and threats to the pay TV industry.

What are the main opportunities and threats that are likely to drive innovation in the TV experience over the next couple of years?

The pay TV industry is under growing pressure from cheaper OTT services, changing consumer behaviour and demand, and the rise of content piracy. Our 2017 Pay TV Innovation Forum research programme identified a strong consensus amongst executives: 71% think that competition will increase over the next five years and 85% agree that in order to grow, pay TV service providers will have to innovate strongly during the same period, citing the launch of new products and services as critical drivers to growth.

In that context, pay TV executives are increasingly focused on delivering standalone OTT services (64%), multiscreen TV Everywhere (67%) app-based TV services (61%) and advanced functionality (53%) such as voice and 4K, alongside innovative content propositions (74%) and new pricing and packaging models (78%).

What do service providers need to prioritise to deliver a TV experience across a broad range of retail IP devices as well as traditional TVs?

Today, virtually all major TV service providers and broadcasters have adopted multiscreen OTT distribution services – and for good reason: consumers have a growing appetite for IP video streaming and a growing customer segment is embracing video streaming – and its benefits – now more than ever.

As more content goes over IP networks, service providers have to consider an upgrade to their end-to-end infrastructure to eliminate backend silos and integrate features such as cloud DVR, ABR just-in-time packaging, CDN and device management, and now addressable advertising. Smartly transitioning from broadcast to IP is all about being pragmatic in offering the best consumer experience while optimising costs.

NAGRA is introducing OpenTV Signature Edition at the IBC. What market need does it meet and what elements should such a pay TV ecosystem include?

OpenTV Signature Edition answers the complexity of how to deliver a fresh and satisfying, upgradeable-on-the-fly pay TV service that can deliver an unparalleled user experience for content harmonisation in today's fragmenting online TV market. OpenTV Signature Edition is a fully integrated eco-system that comes bundled with third party services and applications that offer the following elements: (a) maximisation of operational efficiency, (b) maximising of profitability - via analytics and efficient content management, (c) scalability through multi-tenanted cloud and (d) frictionless access to content for all users no matter their content navigation preferences.

How are the threats to revenue security for content service providers changing?

As broadband and mobile internet becomes ubiquitous, the focus of piracy has shifted from signal theft to content sharing, taking a huge toll on rights holders and service provider revenues. In the digital world, content can be acquired from live broadcast streams or even from hacks into production servers, and the damage to potential revenues is tremendous. NAGRA estimates that pay TV providers alone collectively lose up to US$7 billion per year because of content sharing. Advanced cyberattacks that include ransomware attacks and stolen files being held for ransom have already affected media companies like Netflix, and most recently HBO. And although Netflix's production subcontractor paid the requested amount, the hackers leaked the content anyway. Leaked content, whether through hacking or piracy, erodes the overall value of the entire content production and distribution chain. These threats are extremely serious and must be countered.

What tools are available to operators to overcome these security challenges?

It all starts with proven, Hollywood trusted card-based and cardless CAS and multi-DRM systems that meet stringent Hollywood and sports rights holder security requirements. Once content is secured, it must be marked with the industry's leading NexGuard forensic watermarking technologies for live and on-demand content, making it traceable back to its source if leaked. NAGRA's extensive monitoring service help operators discover and quantify the impact of leaked content, and our takedown and legal services ensure pirate streams are stopped at their source, through their service providers (CDNs, ISPs, etc.) or in the courtroom.

How far is the use of consumer data likely to change the way TV is delivered and what do service providers need to prioritise to benefit from this to the maximum possible extent?

As TV service providers face a business transformation challenge with the rise of "digital native" OTT providers, they need to drive their business using more relevant data. But they often don't have that data, as legacy TV systems are not always two-way connected.

The use of anonymised unstructured and structured data, coming from multiple internal and external sources, can fill that gap. Combined with configurable data science algorithms, it allows for the development of powerful prediction engines. The resulting KPI-based action loops, enabled by the data analytics platform, empower internal teams to better drive business operations in areas such as consumer value optimisation, content management, service operations and advertising management.

IBC 2017: 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.

Alpha Networks
STAND 5.A28

WHAT'S NEW?
tucanoRED

WHAT DOES IT DO?
Featuring an open CMS/CRM architecture as a service (SaaS) business model, tucanoRED is designed to simplify subscriber management and the delivery of different service offerings for live and on-demand content over various networks, according to Alpha Networks. The back-end platform covers service management from content definition to delegation of content delivery and is targeted at broadcasters, network and mobile operators, as well as content owners.
CONTACT www.alphanetworks.tv

Artel
STAND 5.A65

WHAT'S NEW?
IP Transport With DigiLink and InfinityLink Platforms; SMPTE 2022-7 Hitless Protection Switching Demonstration; ARG Quarra and 8000 ARQ; FiberLink 4K/UHD solutions

WHAT DO THEY DO?
Artel will showcase an end-to-end hybrid IP- and fibre-based network designed to address customers' requirements as they migrate from direct fibre to all-IP or hybrid IP/SDI networks. Artel offers the modular InfinityLink and DigiLink media transport platforms. New capabilities include auto-sensing of broadcast-quality 3G-SDI, HD-SDI, SD-SDI, ASI video formats plus Ethernet traffic over IP. Artel's IP-based solutions include SMPTE 2022-1/2/5/6 IP encapsulation, and optional forward error correction (FEC) algorithms. Artel's IP network will feature the DLC/ILC410, DLC/ILC450 IP transport solutions for the DigiLink and InfinityLink platforms and showcase new features in the DLC/ILC450 including Gigabit Ethernet (GigE) IP interfaces. Artel will provide an interactive demonstration of SMPTE 2022-7 Hitless Protection Switching in an IP network. Attendees will be able to create "breaks" in video transmissions between the company's InfinityLink chassis and witness delivery of uninterrupted clear video signals, according to Artel. Artel and ARG are teaming up at IBC to offer additional IP delivery solutions while demonstrating interoperability between Artel's InfinityLink and DigiLink platforms and ARG's Quarra and ARQ IP solutions: Artel will showcase the ARG Quarra 10000 10-Gbps Ethernet PTP Switch actively routing video, audio, and data through Artel's network. The ARG Quarra supports the SMPTE 2110-10 proposed standard for system timing and definition and 2059-2 permitting interoperable use of IP-based media equipment with conventional genlocked SDI equipment. Featured in Artel's live network will be ARG's 8000 ARQ IP streaming device for the distribution of high-quality video over unconditioned IP networks. Broadcasters can add additional ARQ licences to deliver multiple UDP unicast and multicast services. Artel's FiberLink 3500 Series transmits 4K/UHD video at up to 60fps one way. FiberLink products are designed for broadcast or corporate studios, OB vans, point-of-view cameras, rental and

ABOX42 to highlight new high-end set-top **STAND 14.C17**

ABOX42 will use IBC to highlight its new M-35 Series Smart STB. The company will also demonstrate advanced MPEG-DASH playout, and lay out its stall to enable service providers to target the smart home market.

ABOX42 will demonstrate its new M35 Series high-end, smart STB. Offering an upgrade path to 4K and UHD TV, the M35 STB is for operators wanting to support an HD and UHD platform, side-by-side, without requiring any changes to the software or service, according to the company. The M35 Series offers premium content security, meeting requirements of 4K and UHD Hollywood content, says ABOX42.

ABOX42 will also demonstrate advanced MPEG-DASH playout at IBC, with support for live TV, local recording, restart TV, cloud recording and time-shift TV. ABOX42's MPEG-DASH-based TV solution includes multi-audio, teletext, subtitle, and HbbTV support.

The company's dotIO end-to-end Smart Home solution meanwhile provides operators with the hardware, cloud and mobile components to offer services to end-users. Operators can roll out smart home services as an extension of their existing offerings and multi-service bundles to generate additional revenue streams, according to ABOX42. dotIO does not require any integration on the operator side as it is fully managed and controlled by ABOX42. The platform includes sensors, a secure gateway, software, big data, cloud and mobile applications for iOS and Android devices, as well as ready-made business models.

ABOX42 will showcase the latest version of its smart home and smart living solution. ABOX42 will introduce a new camera for its dotIO Smart Home solution sensor family. The camera features a built-in privacy module, allowing only end-customers to view pictures and videos outside the home, with 270° motion.

At IBC, ABOX42 CEO and founder Matthias Greve will participate in a speaking session as a part of the IPTV/OTT Industry Forum Series.

CONTACT www.abox42.com

staging, auditoriums, stadiums and theaters, transportation hubs, distance learning, and more.
CONTACT www.artel.com

ATEME
STAND 1.D71

WHAT'S NEW?
NovelSat partnership; ContentSecure; ATEME Management System
WHAT DO THEY DO?
In contribution, ATEME is to display two major innovations. The first is a partnership extension with satellite communications standard provider NovelSat to use its modulation/demodulation PCIe board, which is compatible with the ATEME platform and COTS server. Second is ContentSecure, which provides dynamic and rolling protection for broadcasters' content, including sports. Moving to converged distribution, ATEME will demonstrate its new version of its ATEME Management System (AMS), which is based on OpenStack (used as the control layer) and Docker (used as the virtualisation layer) and is now able to orchestrate virtual ATEME micro-services. The AMS uses the OpenStack APIs to deploy functions, assign IPs and provide redundancy (HA). On top of that, it also relies on the Titan Rest API to control the video services. ATEME will also showcase several other features. One is a 4K video stream that uses the new AV1 codec from the Alliance for Open Media. This has been designed for parallel processing and optimised for OTT delivery, and provides video alongside real-time delivery modes. The second feature is ATEME Content Adaptive Streaming. This is an evolution of the traditional adaptive streaming technology currently in use for OTT delivery, providing CDN savings of 30% while maintaining interoperability with end user devices. ATEME Content Adaptive Streaming

works by using analysis of the content to adapt the encoding choices to the content characteristics, according to the company.
CONTACT www.ateme.com

Bluebell Opticon
STAND 10.F24

WHAT'S NEW?
BN390; NC370; Edgware; BCX-760
WHAT DO THEY DO?
The BN390 provides rack-mountable one-cable 12G-SDI connectivity for 4K broadcast applications. Bluebell will display the newly upgraded BN390 unit, which combines four 3G-SDI signals onto one 12G-SDI signal via single-mode fibre output. Now with auto-sensing technology, the

BN390 automatically detects the format of the incoming signal and configures itself to transport the signal accordingly. The unit now covers all bit-rates, frame-rates, and formats of 3G-SDI, 6G-SDI, and 12G-SDI. Intended for 4K UHD transport, the unit also supports multiple SD/HD/3G-SDI transport in metropolitan networks. Available CWDM optics enable four discrete channels to be carried on one wavelength, making it possible for 64 channels to travel on a single fibre strand over distances of 60 kilometres. Also on display will be the BN365, a stand-alone 12G Fibre transport module upgraded to achieve better performance. The BN365 is available with CWDM optics. New at IBC2017 is Bluebell Opticom's BC370, an optical converter that enables four discrete channels of 3G-SDI on a single card, eliminating the issue of fibre count. With four 3G-SDI inputs and

four optical outputs, the BC370 offers 60 channels in a 3-RU space or 24 channels in 1 RU. Making its European debut will be Edgware, Bluebell Opticom's new IP-gateway product that wraps a 3G-SDI picture into an IP-compliant format and sits on a 10G Ethernet network. Edgware serves as a bridge between current 3G-SDI-based broadcast infrastructures and those built on IP, making it possible to use BNC and XLR technology to transport broadcast signals over IP networks. Bluebell Opticom will also show the BCX-760 Series 10G Ethernet point-to-point fibre link. The BCX-760 is a camera-back interface that allows connection and signal transport between a camera and an OB truck. It will also demo Hothead Silhouette, a power-insertion product for robotic cameras, and a newly upgraded network monitoring system.
CONTACT www.bluebell.tv

Broadpeak showcases nanoCDN ABR multicast STAND 5.C72

Broadpeak claims to be the first technology provider with a working ABR multicast solution, launched in 2012. The company's nanoCDN multicast ABR solution has been deployed by leading operators worldwide for live multiscreen service delivery.

nanoCDN multicast ABR makes live HTTP video delivery to any device scalable by turning millions of broadband gateways, cable modems, Wi-Fi routers, and STBs into active components of an operator's content delivery infrastructure, according to the company. Leveraging home networks, operators can manage the consumption peaks of live multiscreen services for millions of simultaneous viewers using only a few megabits per second from their network, says Broadpeak.

Several new use cases for nanoCDN will be shown at IBC,

including zero latency for live video streaming as well as live HTTP TV service delivery via satellite. nanoCDN allows satellite operators to cost-effectively deliver live and on-demand services across tablets, smartphones, connected TVs, and other OTT devices by leveraging the end-users' STB.

Broadpeak will also show its Cloud PVR solutions, which supports start-over, time-shift, and catch-up TV, as well as impulsive recording, using a shared copy or private copy model. The recorded content can be processed on the fly to be viewed on any de-

vice type.

Other demos include umbrellaCDN With CDN diversity. Broadpeak's umbrellaCDN CDN selector (*pictured*) allows content providers to choose the best content delivery networks for delivering video content. At IBC, Broadpeak will highlight CDN Diversity, a function of umbrellaCDN which allows content providers to dynamically take into account the instantaneous quality of several CDNs as a service, combine their contributions, and deliver the content at a quality level exceeding what would be achievable with the best CDN alone, according to the company.

Broadpeak will also demo BroadCache Box, a local video caching solution for broadcasters and content aggregators.

CONTACT www.broadpeak.tv

Digital Nirvana
STAND 14.P25

WHAT'S NEW?
Media management products and services
WHAT DO THEY DO?
Digital Nirvana's services provide an integrated, automated workflow for sports clipping, closed captioning, subtitling, caption synchronisation, video logging, repeat audio detection, and metadata creation. Its Media Management Platform and suite of broadcast monitoring products establish a set up for content creation, capture, repurpose and delivery, while monitoring video and audio for quality and compliance, according to the company. Being introduced at IBC is the ability to automatically generate sports highlight reels through Digital Nirvana's Automated Sports Clipping service. The clips automatically selected will represent a collection of highlights from a designated period or for the entire game. Digital Nirvana's sports clipping service automatically analyses sports broadcasts in real-time and generates ready-to-publish clips of those highlights. It can also generate images and GIFs for customers' social media promotional activities. The company will also introduce the Avid Interplay Connector, which enables video content owners who work with Avid Media Central to transfer media data securely to the cloud for generation of logs/metadata/transcripts with timecodes and receive them directly within the user's workflow. Other service offering highlights will include demonstrations of the company's cloud-based closed-captioning solutions, subtitling and video logging services. Digital Nirvana's

cloud-based Caption Synchronisation service uses audio fingerprinting to automate near-live synchronisation of live broadcast captions with the ability to revise the text. The company offers caption generation for all pre-recorded and online video content through an automated process over the cloud, with options to create multiple formats and integrate directly to the user's video platform. On the product side, Digital Nirvana will showcase its Monitor IQ media management platform, CAR/TS (Capture, Analyse, Replay – Transport Stream) transport stream recorder, AnyStream IQ for OTT monitoring and MediaPro for content repurposing. The latest version of MonitorIQ media management platform delivers a range of multi-channel signal monitoring, repurposing, logging, compliance and archiving functions; Version 5.0 features cloud-based recording and OTT stream monitoring functions. It also includes HTML5 and HTTP Live Streaming (HLS) support, and incorporates the ability to record from Matrox's Monarch HDX streaming appliance. CAR/TS records and monitors the transport stream and provides alerts on non-compliance. The solution also offers time-shifted playout for multiple time zone broadcasts and a disaster recovery solution for keeping a broadcaster's signal on-air with recorded content. Digital Nirvana offers stand-alone media management solutions, including its cloud-based OTT monitoring solution, AnyStream-IQ. The solution records and monitors streamed media to prove web captioning compliance and "proof of airing" for advertisers. The showcase will also include a stand-alone content repurposing solution, MediaPro, which enables users to record content to cut, clip and share over social media and the cloud, according to the company.
CONTACT www.digital-nirvana.com

Easel TV
BC STAND 14.H17

WHAT'S NEW?
Suggested TV Platform
WHAT DOES IT DO?
Easel TV is highlighting the release of additional functionality for its Suggested TV service, providing content owners an off-the-shelf platform to create their own OTT or VOD service. Suggested TV provides an end-to-end direct to consumer service for its clients, achieved through a shared, ready-built solution. The new functionality includes: SVOD integration with client CRM systems for remote entitlements; new versions of the mobile apps with picture-in-picture, Search and Chromecast enhancements; enhanced SLAs underwriting service resilience; enhanced TV app UX (progress indicators, new product page, seamless deep-linking); credit card retention; enhanced SEO; multi-currency enhancements allowing multiple base currencies for truly global operation; reporting enhancements for usage monitoring (anti-piracy); support for Google Analytics e-commerce and tag manager support for Facebook Pixel tracking and watchlists.
CONTACT www.easeltv.com

Globecast
STAND 1.A29

WHAT'S NEW?
Media Manager Platform; GCXN; My Globecast
WHAT DO THEY DO?
Globecast's new Media Manager Platform is an integrated platform that enables its customers to clip, edit and publish content instantly across multiple outlets. Customers can create video-on-demand files from live streams and syndicate to multiple online services and across social media. Globecast XN manages the transport of broadcast

and media services over the public internet. Allowing rapid deployment, it enables customers to create and then distribute content wherever they may be, far quicker and more cost effectively than using traditional fibre networks, according to Globecast. GCXN is used for primary and secondary distribution with broadcast-grade quality. It comes as a standalone service or as a complementary solution to satellite services. It can also be used for disaster recovery and monitoring of video services. My Globecast is an online portal to enable customer management of services via a secure, real-time digital tool. My Globecast is designed for and by customers to offer a simpler customer journey with a user-friendly homepage, according to the company. Globecast is also announcing its new Cloud Channel Playout solution for SD, HD and 4K channels. This enhances its service deployment efficiency, time-to-market and flexibility and further enhances its geographical reach, as well as enabling fast start-up time, the company claims. Globecast continues to expand the capabilities of its TV Everywhere OTT Video services via a comprehensive ecosystem of partners to complement its in-house video headend solution used for media content preparation. Beyond mobile apps for smartphone and tablets, it now provides apps to key Smart TV app stores: Roku, Samsung, LG, Android TV and Netgem.
CONTACT www.globecast.com

Interra Systems
STAND 7.B13

WHAT'S NEW?
Quality control and monitoring solutions
WHAT DO THEY DO?
Interra Systems will showcase its approach to QC and monitoring. New features that will be displayed
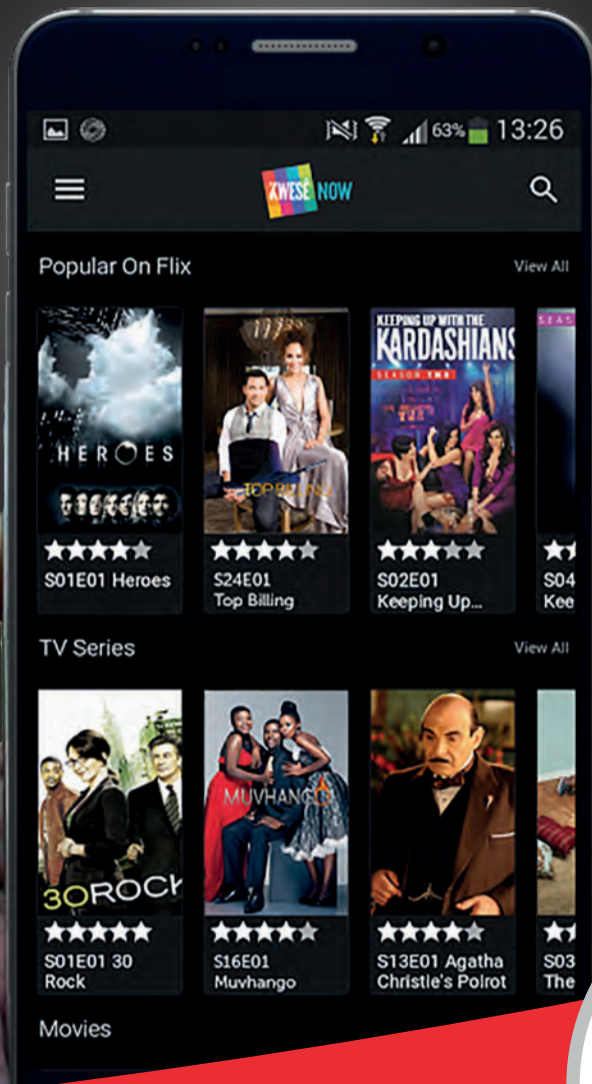
include exhaustive QC checks, ABR stream validation, real-time QoE measurements, live content monitoring, and deep-dive compressed stream analysis. Key demos include BATON, a next-generation hybrid QC solution with ABR checks. It includes a unified hybrid QC platform, which implements organizational QC policy to support a combination of automated and manual QC checks, and supports new codecs and formats including IMF App2 Extended, iTunes Subtitle, CineCanvas Subtitles, Kodak Cineon, and more. It features expanded audio language detection support for multi-language auto-detection capability for subtitles and closed-caption files with new multi-language checks of audio tracks; Baton currently offers auto detection support for a variety of languages, including English, Spanish, German, French, Dutch, Portuguese, Italian, Arabic, and Swedish. It also features HDR quality checks, data verification checks, PSE correction and black frame removal. Baton's integrated media player now displays detailed loudness graphs. Any non-conformance with the specified loudness restriction is reported as an error and can be instantly corrected via the Baton Content Corrector (BCC), a complementary loudness correction application. Interra Systems will also demonstrate its Baton+ QC and analysis solution, which optimises the QC process by allowing users to define workflows representing the stages through which media content flows in a facility. New data analysis features for Baton+ allow users to effectively track trends and anomalies in the media content, optimising decision-making and QC operations. Interra Systems will also demonstrate new additions to its Orion monitoring solutions family. Orion-OTT is a software-based over-the-top solution for real-time monitoring of adaptive bitrate content for

multiscreen service delivery over unmanaged networks. Interra Systems will showcase its Orion real-time content monitoring and video analysis system. The highlights of the Orion-OTT and Orion real-time content monitors include performance improvements in terms of number of services that can be monitored on a single machine and performance scaling on multi-CPU systems. Orion-OTT's user interface has been enhanced to improve usability. The system now offers wider support for ABR content and DRM, while providing extended monitoring features and checks. New support for Microsoft Smooth Streaming; Dolby AC3/EAC3; HEVC; WebVTT, TTML captions, and more will be showcased. Orion real-time content monitoring solution offers new enterprise features including REST APIs for exporting closed captions, EBP and IGMP data in XML format; system control; and configuration. Interra Systems will demonstrate its VEGA media analysis solution for standards compliance, debug, and interoperability of encoded streams at IBC. Recent updates to the VEGA family include in-depth analysis of ABR formats; support for Windows 10; the latest HEVC HM reference code; HEVC interlaced streams; VP9 streams (4:2:2, 4:4:4); PCAP streams; Dolby AC-4 audio; and AVS Plus video.
CONTACT www.interrasystems.com

MX1
STAND 1.B24

WHAT'S NEW?
MX1 360
WHAT DOES IT DO?
MX1 360 is described by the company as an end-to-end, cloud-based media service platform. Several new features will be shown that simplify global video distribution. Powered by hybrid cloud and on-premise software and infrastructure, MX1 360 enables users

to reach a wider audience, better monetise media and video assets, and deliver a superior viewing experience. MX1 360 has been deployed by global broadcasters, TV channels, content and rights holders, sports organisations, TV service providers, and distributors. The platform can be used as part of a fully managed service or self-serve model.
CONTACT www.mx1.com

Qligent
STAND 8.E47

WHAT'S NEW?
Match
WHAT DOES IT DO?
Match is the latest addition to its Qligent's Vision cloud-based monitoring portfolio. Available as a cloud-based solution or on-premise software, Match provides real-time, automated comparison of transport stream, video and audio to spot and flag programme-related errors as the signals move across multi-platform distribution platforms. The evolution of Qligent Vision encompasses objective errors (QoS), subjective errors (QoE), and now programmatic errors (Match). The software is designed for use by broadcasters, networks, advertisers, and regulators. Match can decode the transport stream back to baseband video and audio in order to compare that version with the reference data it captured of the programme while it was in its native state prior to distribution. In comparing and analysing the video and audio content, Match looks for programmatic errors and anomalies that may have occurred due to repeated encoding, multiplexing or other processes as the

signals move downstream. When Match spots an inconsistency it triggers alarms and alerts, so that broadcast errors can be prevented or mitigated before they adversely impact compliance requirements or Quality of Experience (QoE) for viewers. Match arms broadcasters with a toolset to identify media distribution errors, including: airing the wrong show, or putting a show on the wrong channel; capturing programmatic local ad splicing errors; assigning a foreign language to the wrong audio track; mistaking a static image for frozen video; insertion of incorrect programme elements, such as bugs, crawls, time and temp, etc., into the stream; and missing subtitles or audio.
CONTACT www.qligent.com

Simplestream
STAND 14.D11

WHAT'S NEW?
Live Video Editor; VOD-in-a-Box; Network PVR; Media Manager
WHAT DO THEY DO?
VOD-in-a-Box is designed to deliver fast time to market – typically six to 12 weeks – for broadcasters and content owners who need to roll out a video-on-demand service in a single territory or internationally, according to Simplestream. The solution includes support for all OTT platforms, and a range of monetisation options, allowing any combination of subscriptions (SVOD), advertising (AVOD) and pay-per-view and other transactional models (TVOD). Simplestream will also be showcasing its new cloud-based Network PVR (NPVR) offering at IBC. Viewers can 'record' their favourite shows, and watch them at any time on any device. IBC will also see Simplestream unveil its enhanced Live Video Editor, which allows clips to be created in real time from a live feed, together with enhanced metadata linked to events in the

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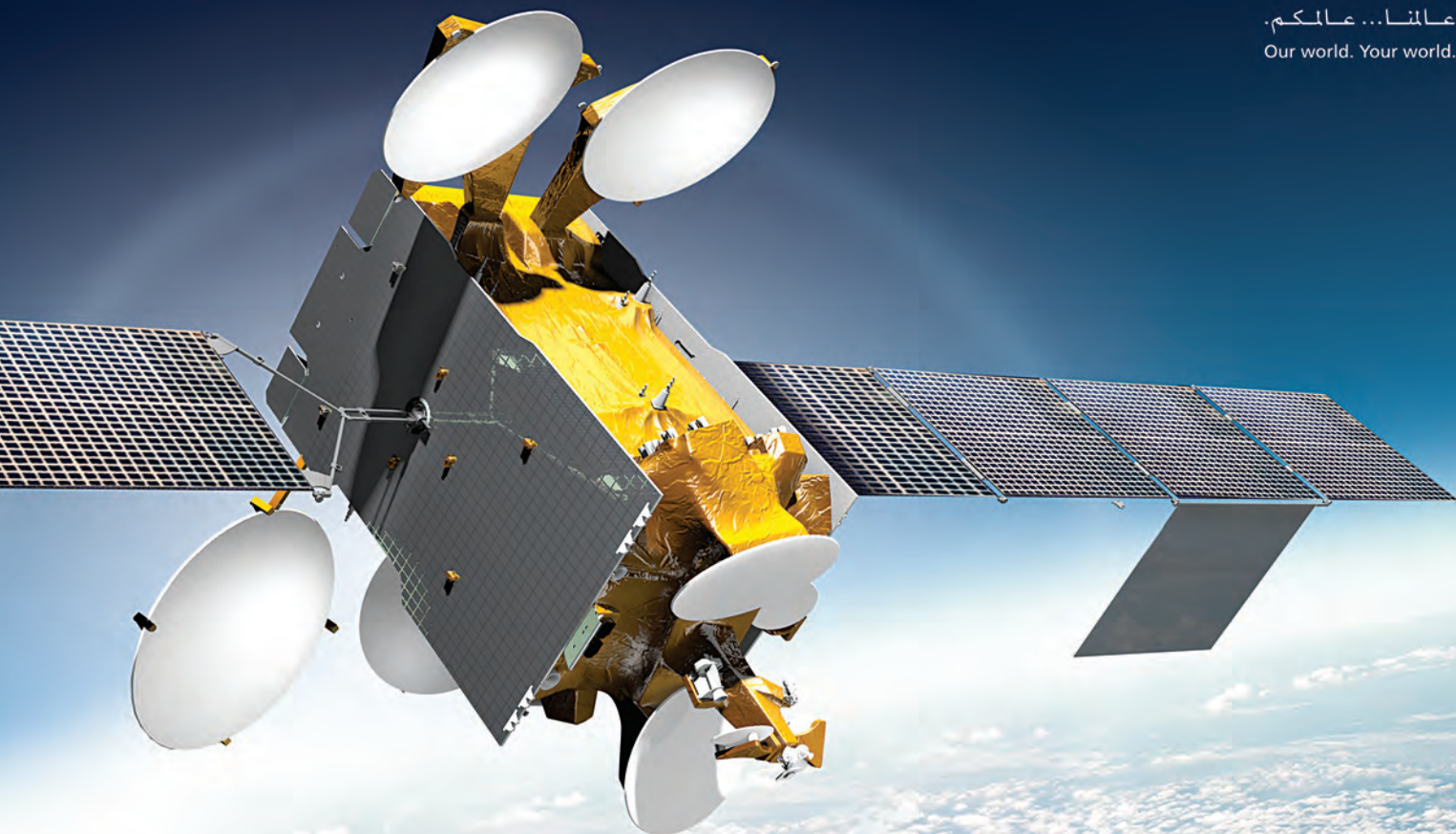
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stream, and distributed within seconds. The clips generated can be shared via social media, or syndicated to media partners. The Live Video Editor is an optional module within Simplestream's Media Manager platform and utilises web technologies, eliminating the need for Adobe Flash. As well as real time editing of live streams, the same editor can also be used to edit any existing video asset held within Media Manager. IBC demos include: Live Video Editor – real-time data ingest, clipping, transcoding, and one click sharing, featuring Racing UK; VOD-in-a-Box, with customers including Trace Play, Marquee and Blaze; Network PVR featuring TVPlayer showcasing new viewer functionality including setting, watching and managing recordings; Media Manager, including live, live-to-VOD, virtual playout, asset management, user management, live video editor and syndication.
CONTACT www.simplestream.com

Telestream
STAND 7.B26

WHAT'S NEW?
Lightspeed Live Stream; Lightspeed Live Capture, Vantage Elastic Domain; Telestream Cloud
WHAT DO THEY DO?
In its first fully integrated exhibit since acquiring IneoQuest and Vidcheck, Telestream will highlight how these acquisitions extend and enrich the Telestream media production and distribution ecosystem from the point of content ingest to the point of consumption on traditional and mobile devices. A key focus for Telestream at IBC will be spotlighting the live streaming and VOD space, which has grown from relatively small-scale streaming operations to enterprise-scale delivery to

multiple OTT platforms. This year, Telestream will showcase its latest developments in streaming solutions, including its Lightspeed Live Stream and Lightspeed Live Capture and the IneoQuest ABR Headend, Edge and End-to-End monitoring solutions. Telestream will introduce to the European market the latest new version of Lightspeed Live Stream, which brings broadcasts and OTT together in the live space. Telestream will highlight its strategic partnership with Unified Streaming, a provider of smart video streaming technologies to offer Unified Streaming's Origin as an option to Lightspeed Live Stream for an extended format and DRM (Digital Rights Management) support. Telestream will also show a new version of Lightspeed Live Capture, which provides encoding of real-time SD, HD and UHD into all of the common high-quality mezzanine formats in use worldwide, while simultaneously supplying a

streaming proxy for each channel being processed. Telestream will also introduce Vantage Elastic Domain, a new scaling model that allows users to deploy instances of Telestream's Vantage media processing software based on changing business needs. The content production workflow orchestration solution can now run on public and private virtualised infrastructure with a multi-node orchestration engine. Telestream will also showcase the latest advances in Telestream Cloud, a video encoding SaaS (software as a service) suited to the needs of video production and post production professionals.
CONTACT www.telestream.net

Verimatrix
STAND 5.A59

WHAT'S NEW?
Verimatrix Secure Cloud
WHAT DOES IT DO?
Verimatrix Secure Cloud is a new deployment option that equips video service operators with a managed framework for video content security and analytics. Supported by Verimatrix Global Services team and monitored on a 24/7 basis, Secure Cloud broadens the scope of deployment options available for operators who take advantage of Verspective, MultiRights OTT Plus and Video Content Authority System (VCAS) solutions of any size or scale, according to Verimatrix. This alternative to on-premise systems and operations can be deployed and reconfigured as required, while keeping operators in full control of their service offerings and subscriber relationships, according to the company. Secure Cloud is implemented via a customer-dedicated Amazon Web Services (AWS) virtual private cloud environment that includes private and secure storage for critical data and assets. Deployments

Ruwido to showcase TICTACTILE. STAND 1.D69

TICTACTILE. has been developed by ruwido to enable users to navigate the graphical user interface on their TV in the same intuitive way as they are interacting with their smart devices, while offering a tactile experience built in, according to the company.

Ruwido claims that the approach of bringing the structure of the user interface to the navigation field of the remote control makes moving through content appeal to both the visual and tactile senses and creates a seamless experience for the user.

At IBC, ruwido will unveil how interaction mechanism technologies, such as TICTACTILE., can also be applied to business cases outside of the living room. The company will also demonstrate

how its latest developments of multimodal input devices incorporating Ruwido's haptic biometric can make watching TV a more personal experience.

At the IBC conference Regina Bernhaupt, head of scientific research and Dimitri Drouet, member of the scientific research team, are looking at the future of intelligent media interfaces,

and what can be learned from in-depth analysis of user behaviour when interacting with them. They will be presenting in the paper session: Intelligent Media Interfaces – Listening, Watching and Feeling you, on Thursday, September 14 from 11:00-12:30 in the Emerald Room.

CONTACT www.ruwido.com

of VCAS and Verspective software solutions in Secure Cloud become video service components, interoperable with other components of the cloud video ecosystem, including encoders and streamers, CDNs and content management systems.
CONTACT www.verimatrix.com

VO
STAND 2.B39

WHAT'S NEW?
Multi-DRM Suite; Connected Sentinel; Anti-piracy protection for video streaming
WHAT DO THEY DO?
VO will showcase a content protection solution for multiscreen TV services. VO's multi-DRM suite offers pay TV operators possibilities for securing premium content on any device and in any delivery format, according to the company. With the recent acquisition of Squadeo's multimedia QuickPlayer, VO allows operators to securely deliver live and VOD content on PC, Mac, and mobile devices. VO's Connected Sentinel multi-DRM backend platform is currently used by over 30 operators around the world and has been deployed on 4K STBs for IPTV offerings. The real-time breach detection capabilities of Connected Sentinel DRM, powered by machine learning algorithms, constitute a natural addition to VO's content protection product portfolio, and VO will demonstrate insights that a content security analyst can extract from the analytics console of the Connected Sentinel DRM solution. VO will also showcase a solution for anti-piracy protection to combat illegal streaming on the web with real KPIs. This includes de-referencing and direct removal of illegal content-sharing sites for live and VOD premium content. Additionally, VO's anti-piracy platform collects evidence, providing operators with legally relevant documentation for fighting piracy. VO will also demo advanced analytics and monetisation capabilities for its cloud-based TV Platform as a Service. Improvements include: analytics dashboards, which enable service providers to measure the effectiveness of content discovery sources, including recommendations, search, promotions, and catalogue and apps exploration, to improve the customer experience; a search analysis tool that provides insights on subscribers' interests, data on how well the current TV offering meets those interests, and feedback on the effectiveness of the search; advertising functionality that enables service providers to manage multiple advertising campaigns from one interface, inserting preroll and mid-roll dynamic ads into their video assets across all service devices. VO will also showcase various strategies for extracting insights from TV data, via predictive analytics. A joint demo with Neotion, the supplier of CAMs, will highlight the benefits of audience measurement for building better content offers for subscribers. VO will also showcase its Virtual Arena solution for 360-degree virtual reality (VR) premium video management, interactivity, and secure playback. Following VO's recent acquisition of Squadeo, Virtual Arena customers will be able to leverage the QuickPlayer playback infrastructure to deliver live and on-demand 360-degree streamed video content.
CONTACT www.viacess-orca.com

Technology **in focus**

Infrastructure, equipment and product news for digital media distribution

Freesat plans UHD 'next-gen STB' upgrade

Freesat is seeking manufacturing partners to develop a "new range of innovative set-top boxes" that will include Ultra HD support and multiscreen streaming.

The free-to-air UK satellite operator said it is seeking proposals for its next generation consumer product and aims to announce manufacturing partners in the autumn, with a view to bringing the set-top box to market "as soon as possible".

The platform provider said that the new devices should be ultra high definition-ready for encrypted broadcast and IP; should offer "fast channel change"; and support HBBTV 2.0.1 applications.

Other key features should include: in-home multiscreen

streaming to allow users to watch TV across multiple set-top-boxes in the home; and additional tuners to help customers plan their recordings and avoid programme clashes.

"We're thrilled to announce plans for Freesat's next generation product," said Freesat managing director, Alistair Thom.

"The requirements for our set-top box have been developed with the customer in mind and our aim

is to continue to bring UK audiences the best subscription-free TV service, and a fantastic alternative to pay TV."

The product requirements will be based on an open technical specification set by the Free TV Alliance, which is a collaboration between four major European digital satellite television broadcasters: Fransat (France), HD Plus (Germany), Tivusat (Italy) and Freesat (UK).

Freesat said its request for proposals signals the Free TV Alliance's ongoing commitment to create "common standards for free-to-view satellite TV services and technologies across Europe for the benefit of viewers, manufacturers and broadcasters."

Disney ups BAMTech stake in SVOD move

Disney will pay US$1.58 billion (€1.33 billion) to up its stake in video streaming technology firm BAMTech, as it prepares to make a major push into the SVOD market and cut ties with Netflix.

Disney will acquire an additional 42% in BAMTech, as part of a move to take a controlling ownership of the direct-to-consumer streaming tech company.

The deal comes after Disney paid US$1 billion for a 33% stake in BAMTech last August – an agreement that had included the option for Disney to up its ownership to a majority stake over several years.

With the new deal, Disney said it plans to launch its ESPN-brand-

ed multi-sport video streaming service in early 2018, followed by a new Disney-branded direct-to-consumer streaming service in 2019.

The company described these plans as a "strategic shift" that will see Disney end its distribution agreement with Netflix for subscription streaming of new releases, beginning with the 2019 calendar year theatrical slate.

"The media landscape is increasingly defined by direct relationships between content creators and consumers, and our control of BAMTech's full array of innovative technology will give us the power to forge those connections, along with the flexibility

to quickly adapt to shifts in the market," said Disney chairman and CEO, Bob Iger.

"This acquisition and the launch of our direct-to-consumer services mark an entirely new growth strategy for the company, one that takes advantage of the incredible opportunity that changing technology provides us to leverage the strength of our great brands."

Disney said its new branded service will become its exclusive home for SVOD viewing in the US and will show the latest Disney and Pixar films – beginning in 2019 with titles like *Toy Story 4*, the sequel to *Frozen*, and a live-action version of *The Lion King*.

EFL taps Neulion for iFollow

The English Football League (EFL) has revamped its PlayerHD online video platform and has expanded its reach to provide coverage of matches to fans overseas for the first time.

The EFL has tapped online video platform provider Neulion to supply the platform for the new service, iFollow, enabling it to target an estimated 270,000 fans based outside the UK.

Subscribers will pay the equivalent of £110 (€120) per season for the service, which will provide coverage of up to 46 live league games per club.

More than 1,500 matches will be available in HD quality, with iFollow showing every EFL league match live unless that match has been selected by the EFL's overseas broadcast partners. About 148 games are affected by third-party deals.

Fans based in the UK and Ireland will have access to live audio commentary, highlights packages and exclusive content as part of the new service.

Chris Wagner, EVP, marketplace strategy and co-founder, Neulion, said that feeds of each game are transferred from the ground to a production facility in Preston in northern England, where they are produced. Neulion has built an online store where fans can pay for their season passes. The company has also created a 'virtual announcer' to enable commentary to be overlaid on audio of the match in progress.

Matches are available on-demand as well as live, with match events tagged so fans can click on a timeline to see coverage of goals and other highlights.

YouTube revamp

YouTube is rolling out a number of new features for the mobile and desktop versions of the service, in the latest stage of the video site's evolution.

The updates are designed to offer a consistent style across devices and include new gesture controls on mobile and the wide rollout of YouTube's new 'dark theme' for desktop. "Over the last few months we've started releasing updates and will continue to throughout the rest of the year," said YouTube chief product officer Neal Mohan. "When all is said and done, we'll bring a new level of functionality and a more consistent look across our desktop and mobile experiences."

The new features on the mobile app include a new design with navigation tabs moved to the bottom of the app and the ability to change the speed of videos, as can be done on desktop.

In Brief

SES swaps launches

SES has changed the launch vehicles and launch slots for its SES-12 and SES-14 satellites. SES-12 will be launched on a Falcon 9 vehicle from SpaceX in the first quarter of 2018, while SES-14 will be launched on an Ariane 5 early the same quarter. SES-14 will be positioned at 47.5º West. Its C-band payload will support its cable neighbourhood in Latin America while its Ku-band capacity will cover the Americas and the North Atlantic. SES-12 will be positioned at 95º East and provide DTH broadcasting, VSAT, mobility and HTS data connectivity services in the Middle East and the Asia-Pacific region.

HTC may sell Vive

Mobile technology giant HTC may sell off its Vive virtual reality unit as one of a number of options that also include a full sale of the company, according to Bloomberg. Citing unnamed sources, the report claims that HTC is working with advisers to explore options that include striking a deal with a strategic investor, selling the Vive VR headset unit or spinning it off. HTC has held talks with companies including Google, the report said. A full sale of HTC, also mulled as an option, is seen as less likely. HTC has seen its market value fall by about three quarters over the past five years as its share of the smartphone market fell below 2%, squeezed between high-end players Apple and Samsung and low-cost Chinese manufacturers. Vive produces a high-end VR headset, competing with the likes of Oculus Rift, that has sold about 190,000 units to date, according to IDC statistics.

Genius Digital rebrands as Dativa, appoints new CEO

Big data specialist Genius Digital has rebranded as Dativa and appointed US-based Michael Collette as CEO, positioning the company for further growth in North America.

Dativa said the rebrand marks the completion of the company's transformation into a services business – focused on data strategy, engineering and operations services for brands, media and technology companies.

Collette takes over from Genius Digital CEO Tom Weiss (*pictured above left, with Colette right*), who now becomes Dativa's chief technology officer and chief data scientist. He brings more than 20 years media and technology company experience to the role.

Collette was previously a founding executive of smart TV automatic content recognition firm, Cognitive Networks, and recently started as an entrepreneur in residence at boutique investment bank, Progress Partners.

"The emergence of diverse, strong sources of census TV data has started to transform the traditional television industry," said Collette. "In 2017, we see 'data driven TV' in the early stages [of] broad, irreversible adoption."

He added that Dativa's team has "powerful expertise right across the TV market" and works with "every type of TV data" – spanning smart TVs, over-the-top and set-top box data.

Weiss said: "The launch of the Dativa brand is the natural next stage in the transformation of our offering and we are excited to continue building our data science capabilities as we grow even further. Michael's expertise in the application of census TV data and broad contacts across the North American market will help Dativa to accelerate our growth and focus in the region, and deliver a fresh, innovative outlook to professional services."

Air Link taps Hybroad and Nordija for IPTV and OTT

China-based set-top box specialist Hybroad and Denmark-based middleware provider Nordija have teamed up to deliver an integrated IPTV and OTT set-top system for telecom operator Air Link to launch an upgraded TV offering for viewers in Trinidad and Tobago next year. The platform integrates the Nordija middleware platform fokusOn on the new 4K UHD HEVC Hybroad set-top box with new features, according to the pair. Air Link operates a digital cable pay TV service, as well as separate telecom services, on Trinidad and Tobago.

DVB-T2 boost

Germany's migration from the DVB-T digital-terrestrial TV standard to the more modern DVB-T2 format provided a bonanza for set-top box sales in the first half of this year, according to the latest figures released by consumer electronics industry association the GFU. According to the outfit's Hemix home electronics market index for the two quarters to June, the value of set-top box sales jumped by 255% to €349 million, while the volume of boxes sold grew by 172% to 3.4 million. The number of TV sets sold meanwhile grew by 3.4% to 3.4 million, while the value of TV sets sold grew by 3.1%. In addition to the switch from DVB-T to DVB-T2, the level of sales of boxes and TV sets was boosted by the shutting down of analogue cable transmissions in three Federal states. Overall, Germany's consumer electronics market saw sales growth of 2.4% in the first half to €12.5 billion.

Curzon taps Easel TV for new SVOD service

UK cinema chain Curzon has partnered with Easel TV for the rollout of its new membership SVOD service, Curzon12.

The offering, which is currently available in beta, lets Curzon cinema members stream 12 "essential films" for free at home each month by entering their Curzon membership number.

OTT video services provider, Easel TV, is powering the curated service with its 'Suggested TV' platform.

Curzon's director of digital ventures, Philip Mordecai, said that Curzon12 complements Curzon's existing premium home cinema service – a TVOD model that includes a 15% discount for Curzon members. "Our launch of SVOD is a clear preeminent move in the global cinema entertainment market and it will naturally enforce our strategy – customer and film first," said Mordecai. "As we continue to enhance our cinema membership proposition we wanted to make Curzon Home Cinema an integrated part of our core cinema customer's life – not just a isolated or standalone alternative."

Curzon offers three tiers of membership, called 'classic', 'cult' a 'complete'. Classic membership includes four free cinema tickets, while complete includes free entry to all films and events for the member and a guest.

DTVE first broke the news back in April 2016 that Curzon was planning to launch a curated SVOD offering to run alongside its existing transactional VOD store, Curzon Home Cinema, before the end of 2017.

EE TV launches Amazon Alexa voice control

EE TV has launched voice control through the Amazon Echo and Echo Dot devices, giving its TV customer the ability to ask for information about what is on TV and to record shows. The move makes the BT-owned outfit the first UK service provider to provide an Amazon Alexa skillset on its set-top boxes.

Users can ask Alexa what is on TV tonight, with Alexa providing three recommendations provided from the same source that supplies Freeview Picks – the digital-terrestrial service's recommendation feature.

Users have the option to record any or all of the recommended shows using a voice command. The skill works whether EE TV is switched on or in standby mode.

EE said its skill for Alexa is the first in a number of commands being looked at for the platform. The operator will review the Amazon Alexa Video Skills API for integration with the service.

EE customers can link EE TV to their Alexa account by enabling the EE TV skill via the Alexa app.

Max Taylor, managing director of marketing, EE, said: "We're continually looking for ways to further enhance the accessibility and usability of EE TV – so we're pleased to work with Amazon to launch the first Alexa skill on a set top box in the UK. The new skill will allow users to discover new content and help to enrich their TV experience, so they can make the most out of it."

Fabrice Rousseau, general manager, Alexa Skills Kit EU, said: "Alexa integration with EE TV creates a truly hands-free TV experience. Customers can now ask Alexa to find things to watch and record the shows they want – no remote required. This is much more natural, and an experience that will get even better in future."

EE TV has tapped the expertise of its technology provider Netgem in bringing Amazon Echo voice navigation to the platform.

Netgem has added integration of Amazon's Alexa Voice Service to its cloud-based entertainment software suite, meaning that the Netgem-developed Alexa skill is

available to operators looking to add voice capability to their offerings.

"Voice is rapidly becoming an integral part of how users interact with their devices. This dedicated Alexa Skill represents our latest innovation to enable viewers to better engage with their TV content quickly and easily, instead of requiring them to scroll through a text-based EPG. The launch of this feature reinforces Netgem's commitment to provide operators with innovative and market-leading solutions that will offer them a competitive edge in a fast-moving marketplace," said Netgem operator solutions managing director Sylvain Thevenot.

YouView also announced in June that it was piloting Alexa voice control for its set-top boxes.

RTL Group takes full control of SpotX

German broadcaster RTL has taken full control of video ad serving technology company SpotX in a deal that values the company at US$404 million (€340 million).

RTL said its investment in the company demonstrated its commitment to an ambitious ad tech strategy as well as recognition of SpotX's impressive growth and execution strategy.

RTL acquired an option to take 100% control of the company when it made its initial investment in the company in 2014. RTL is acquiring the 36.4% of the company that it does not already own for US$145 million.

The group said it plans additional investments to further expand its ad-tech businesses.

The deal is expected to close in October. SpotX's management team, led by company co-founders Mike Shehan (CEO) and Steve Swoboda (COO/CFO) will stay on to continue to execute the company's vision.

SpotX will begin to work more closely with sister RTL Group company, Smartclip. The two companies will focus on achieving their aggressive growth plans, and collaborate to provide the most advanced advertising solutions possible for every screen consumers watch video.

"We are excited to take full ownership of SpotX, a leading global platform for ad serving and programmatic ad sales. Back in 2014, the majority stake in SpotX was our first big step into advertising technology; gaining full ownership is another major step in transforming RTL into a 'total video' powerhouse," said Bert Habets and Guillaume de Posch, Co-CEOs of RTL Group (*pictured*).

Yospace calls for 'central pool' of ad creative

Ad copy for digital platforms needs to be managed in a standardised way, with the creation of a 'central pool' for ad copy to ensure that audio and video standards are met and metadata correctly embedded, if the industry is to reach its full potential, according to Yospace CEO Tim Sewell.

Yospace recently published a white paper with Adstream to further the cause of standardisation and the the need for ad copy management in the dynamic ad insertion world to reflect that of traditional television.

"At its heart is the need for a universally adhered to chain of custody that ensures the journey of an ad creative is documented from creation to delivery," said Sewell. "The idea is that a central pool is created for ad copy so that audio/video quality standards are met and important metadata is correctly embedded. The latter is especially important for effective targeted advertising."

Sewell said that, currently, ad

Sewell: there is a need to document the ad creative journey.

creative reaches digital advertising insertion platform from multiple sources and in various formats. He said that, while Yospace transcodes the creative to ensure it is of broadcast-quality, not everyone does this.

"Moving forward, if ad creatives are stored in a central pool, already transcoded and documented, then it would speed up the process of making those ads available for stitching into the video stream. As the industry moves towards a more developed addressable future and more ads come into the marketplace, ad copy management will become a significant barrier to progress," he said.

"One of the key benefits of server-side digital ad insertion, as opposed to client-side, is that it offers the opportunity to deliver a true TV-like experience for the viewer that is completely frame-accurate and seamless, while enabling true one-to-one addressability, or hyper targeting. This requires deep integrations with many points of the broadcast workflow, which a lot of providers underestimate and many traditional digital ad-tech and OVP vendors may not have these expertise," said Sewell.

Yospace has teamed up with Adstream to propose an architecture for implementing an ad copy management workflow that it will discuss in detail at this year's IBC.

Separately, Belgian broadcaster Medialaan has selected Yospace to provide its dynamic ad insertion system for live channels on its new TV everywhere service, Stievie Premium. A revamped pay version of Stievie's online service, offering 18 live channels and six catch-up services, has launched on smartphone, tablet, laptop and TV screen.

In Brief

Kudelski slips into red
Kudelski Group slipped into the red in the first half of this year on weaker digital TV solutions sales, due in part to subscriber losses at European customers, and losses in its growing cybersecurity business. Kudelski posted first half revenues of US$552 million (€465 million), up 12.5%, but operating income dived by 80.2% to US$6.7 million, while the group turned in a net loss of US$5.7 million compared with a profit of US$21.4 million for the same period last year. Integrated digital TV segment sales increased by 12.9% to US$387.3 million, but operating income fell from US$43.1 million to US$13.1 million. Kudelski said that the saturation of traditional pay TV offerings in developed markets resulted in decreased revenues, particularly in Europe where several established pay TV operators continued to lose subscribers.

Hulu taps AWS for live
Hulu has selected Amazon Web Services (AWS) as the cloud provider for its recently launched Hulu with Live TV streaming service. AWS said it is providing the infrastructure to support Hulu's addition of more than 50 live channels following its launch of live, over-the-top TV in May 2017. Hulu launched its live TV streaming service in beta in the US at the beginning of May, offering more than 50 live and on-demand channels for US$39.99 (€36.60) per month. The service includes access to Hulu's pre-existing US$7.99-per month premium service for no extra cost, along with 50 hours of recording storage, up to six individual profiles and two simultaneous streams per account.

People news

Altice USA has promoted chief technology officer **Terry Cordova** and brought over Altice France CTO **Philippe Le May** to fill his old position. Cordova becomes vice chairman, business development – network and technology services at Altice USA. He was previously executive vice president and chief technology officer at Altice USA, and prior to Altice's acquisition of Suddenlink Communications served as Suddenlink's CTO. Le May joined Altice France – then known as SFR – in 2006 and has worked as its CTO since 2008, overseeing the company's fibre build and deployment of 4G and 4G+ technology in France. In his new role as CTO of Altice USA, Le May will report to Altice USA co-president and chief operating officer, Hakim Boubazine. Cordova will partner with Boubazine and report to Altice USA chairman and CEO, Dexter Goei.

Iflix has appointed the founding CEO of RTL CBS Asia Entertainment Network, **Jonas Engwall**, as its new head of Asia. Engwall takes over from the emerging market SVOD service's previous Asia boss, David Goldstein, who moves to a new role as non-executive chairman of Iflix Asia. He brings more than 14 years of broadcasting and TV experience to the role, most recently as the head of RTL CBS Asia Entertainment Network where he oversaw the launch of two of the company's channels across 19 Asian markets. Prior to this Engwall was vice-president of RTL Group Asia, where he led the group's expansion into India and Asia.

Earlier in his career he worked at Modern Times Group and helped to expand MTG's free-to-air television business into emerging markets in Eastern Europe.

France's Lagardère Studios has appointed **Thomas Plessis** as director of digital business, a role that sees him support the development of original mobile, SVOD and OTT content. The hire marks a return to Lagardère for Plessis, who previously sold his podcasting business to the French media giant in 2008 and then worked as radio and digital programming chief. Plessis later worked for Banijay Group-owned H2O Productions then launched his own production company, Dim-Sum Entertainment.

Google exec **Karin Bonde** has left the tech giant to become VP of Discovery Networks Nordics' digital entertainment business. The new role will see Bonde leading operations in Sweden, Norway and Denmark, working on growing the unit through new business models and digital content types. Based in Stockholm, she will also be part of the management team of Discovery Networks Sweden.

Dish Network's **Erik Carlson** is now leading its over-the-top service, SlingTV, after **Roger Lynch** moved to internet radio company Pandora. Carlson has added SlingTV to his current

duties as president and COO of US-based satellite pay TV provider Dish. Current incumbent Lynch is moving to Pandora as CEO, with former Sony Pictures Television CEO **Michael Lynton** also joining the board. Carlson, who has spent more than two decades with Dish, will continue to report to company chairman and CEO Charlie Ergen.

Liberty Global's central European satellite TV arm, UPC DTH, has named **Catalin Itu** as its new managing director. Itu takes over from **Michael Lee**, who is leaving the company. Lee has served as chief executive of UPC DTH since 2013. Itu, who is currently vice-president of sales and operations at UPC DTH, will take up his new post on October 1. He previously held positions in Orange Romania, Bosch Communications Romania and Astral Telecom.

Grey's Anatomy creator **Shonda Rhimes** is bringing her Shondaland production company to Netflix under a multi-year deal to produce new series and other projects. A range of Rhimes' dramas, including *Scandal*, *How to Get Away with Murder* and *Grey's Anatomy*, already stream on Netflix in various regions. The shows also air in the US on ABC and will continue to do so, but Netflix has pulled off a coup by snatching her from ABC Studios, where she has produced all of her main hits. Rhimes' producing partner **Betsy Beers** will also make the move to Netflix.

Scottish broadcaster STV has appointed ITV's managing director,

online, pay TV, interactive and technology, **Simon Pitts**, as its next CEO. Pitts, who has worked at ITV for 17 years in various senior roles, is due to join the Scottish broadcaster's board as chief executive on January 3, 2018. His appointment comes after STV's current CEO, **Rob Woodward**, said in April that he planned to step down within 12 months.

The founder of Amazon Web Services-owned Elemental Technologies, **Sam Blackman**, has died suddenly aged 41. A statement issued by the Blackman family said that he had died peacefully surrounded by loved ones. "We are thankful to all those who have shared their thoughts and prayers for Sam. We ask that you respect our privacy during this time of grief," it read. AWS Elemental said in a separate statement that it had lost a "passionate, visionary and humble leader and the world has lost an inspiring human being dedicated to community." Oregon governor Kate Brown paid tribute to "a beacon of Oregon's tech community". AWS acquired Elemental in 2015, in a deal that reportedly valued the firm at roughly US$500 million (€450 million). Elemental started to operate under the AWS Elemental brand and continued to delivering its full range of offerings for pay TV operators, content programmers, broadcasters, governments and enterprise customers. ●

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> *"Perhaps with sport, legacy media companies can now fight back more effectively, given what they have already learned about premium drama. By acting fast they have a fighting chance."*

A sporting chance

It often seems that it's only a matter of time before the fashions and trends of yesteryear return to our lives again and the television business is no different. The latest example is the importance of live sports and exclusive content in the burgeoning battle between the legacy media companies and digital giants like Netflix and Amazon.

In the last couple of months Disney and Turner have said they will use sport and their own original content to spearhead moves into the OTT space. They are not the first: similar moves into direct-to-consumer are well underway from Discovery, HBO and others.

Disney, with its ESPN brand, and Turner, with its basketball and golf relationships, are both big players. The move to expand their OTT offerings in sport, and beyond, signals that the legacy media companies are starting to re-think how to navigate the new world of content consumption.

Disney is creating both a sports streaming service and a separate family-oriented offer to be built around its Pixar, Marvel, Disney and ABC TV content. To power both, it is also taking control of BAMTech, the streaming technology company that handles the video offerings of US Major League Baseball. Disney will also no longer license its content to Netflix. It clearly wants to out-Netflix Netflix.

The reason is clear: legacy media companies are seeing falling profits as customers shift away from all-inclusive pay TV bundles. Thanks to Netflix and others, consumers can now 'pick and mix' the content they want.

The answer for the big legacy players is to create Netflix-style offers that will help them match the rising power of the digital giants. It's about offering exclusive and original content and it's about controlling the experience and the data that they can glean from how people consume their offerings.

It's about time. Amazon, Netflix and Hulu have moved on from simply acquiring rights to focus on commissioning original fare. Netflix's appetite for episodic content has driven a ramping up of the cost of making premium drama and led to speculation about the dangers of a 'drama bubble'. What is clear is that the appetite for high-quality drama has driven up the cost of making it and that has caused drama producers to re-think how they fund productions, including how fast they green-light projects and who they partner with. One reason that 21st Century Fox is keen to roll Sky wholly into the fold is to expand its ability to finance original content across its many pay TV platforms around the world, something that Netflix already does.

Live sport now seems to be next target for the global streaming platforms with Amazon, Facebook and Twitter all starting to buy sports rights as a way to differentiate.

We've seen this before. Sport, along with movies, built the likes of Sky, Canal+ and others. Pay TV platforms then expanded into original content as a way of strengthening their lock on customers' cash. Others, like Comcast and Virgin Media, focused on bundling TV with broadband and telephony.

Perhaps with sport, legacy media companies can now fight back more effectively, given what they have already learned about premium drama. By acting fast they have a fighting chance. But sport is even more expensive and certainly more ethereal than *House of Cards* or *Game of Thrones*.

The cost of sports rights continued to rise as pay TV platforms and telcos have battled it out. Now, however, the bitter fight for top-tier sports is about to intensify.

Digital companies like Twitter and Yahoo have dipped their toes in OTT sports in recent times and now Amazon and its subsidiary Twitch are buying up rights to eSports, while Amazon recently outbid Sky for the rights to the ATP Tour, the principal men's tennis tour for the UK. Analysts predict that the e-retail giant will be a bidder for the next round of English Premier League rights.

Recent OTT moves by Disney and Discovery, which has secured rights to the Olympics across most of Europe for its Eurosport service, are emblematic of this shift. CBS is also looking to launch a sport service to complement its CBS All Access and Showtime streaming services. Given where we are with technology, why allow the digital platforms to use your content to build their own subscriber bases when you can build your own?

It's a shot across the bows of its digital opponents and also a wakeup call that the traditional pay platforms ignore at their peril. So-called skinny bundles, which offer less at a lower price for consumers, are a must-have for all pay TV providers who want still to be in business in five years.

It wasn't so long ago that the BBC simply licensed its programmes to the highest bidder. This was a boon to the then-fledgling Discovery, which built its business and reach on the back of BBC fare. Now of course there is BBC America and other BBC branded channels as well as BritBox, the online subscription brand recently launched by the BBC and ITV. The fight back has begun but it's far from over. ●

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