# DIGITAL TV EUROPE

# Virtual **reality**

## A look inside the future of immersive entertainment

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**KNect365 TMT**

# A rounded view

**Virtual** reality and 360° video are all the rage at the moment, with mobile operators, games companies and – not to be forgotten – TV operators and companies vying to get a piece of the action.

To what extent is VR and 360° TV something that media companies should be investing in and why? While it is too early to make accurate predictions about consumer uptake of the technology, content companies and service providers are experimenting with virtual coverage of live events and investigating the potential of the technology in a number of areas.

Whether VR for applications other than gaming will win mass-market acceptance – and whether pay TV operators, content providers, consumer electronics manufacturers or mobile operators will be best-placed to benefit – remains to be seen.

In this issue of *Digital TV Europe* will look at what content providers and others are doing in the space and investigate whether they see a significant application for them in the future. We also look at how VR's supporting technology is evolving.

Mobile telecom operators are among those taking a keen interest in VR, reflecting the fact that mobile devices are increasingly used to consume video, including live video outside the home. The development of new mobile technologies including LTE Broadcast and ultimately the development of 5G networks could enable the wider use of cellular networks for live and on-demand video delivery, but what are the key requirements to deliver live broadcasts over existing mobile networks and what are the costs and benefits of using the technology? In this issue we assess the mobile video ecosystem and look at how video delivery is having an impact on and shaping the next generation of mobile technology.

With traditional TV increasingly perceived to be under threat from a multiplicity of sources, broadcasters are beginning to take a keener interest in ways to safeguard their core revenue stream – advertising. In this edition of *Digital TV Europe* we also look at the opportunity for free-to-air broadcasters to take advantage of the data available to them to protect the future of their business – and potentially make additional revenue – thanks to targeted advertising.

Elsewhere in this issue, we look at some of the key technologies that will be on display at this month's IBC exhibition in Amsterdam, and look forward to the industry highlight of the year, the Content Innovation Awards in Cannes, France on October 16. ●

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# News digest

## Mediaset: Vivendi account of aborted deal 'without foundation'

**By Stuart Thomson >**

Mediaset has rejected Vivendi's position on the pair's aborted April 8 agreement, that would have seen the French media giant take control of the Italian broadcaster's struggling pay TV arm, in the strongest terms yet.

The Italian media group said Vivendi's account of the events leading up to, and following on from its decision not to go ahead with, the April 8 deal contained "information without foundation" and that it needed to lay out the facts.

Mediaset's comments follow a statement by Vivendi that gave its account of events, reiterated during an analyst call following its half-year results (*see story, p.14*) by the media giant's CEO, Arnaud de Puyfontaine. De Puyfontaine asserted that Mediaset and parent company Fininvest had "proceeded to launch media attacks detrimental to Vivendi's interest and image" while the two parties were trying "to re-negotiate the terms of the agreement" in June.

**Vivendi: Mediaset's attacks were "detrimental to its interest and image".**

De Puyfontaine said that the April 8 agreement – which would ultimately have seen Vivendi take 100% control of Mediaset Premium, and Vivendi and Mediaset exchange 3.5% stakes in each other's companies – had been based on "financial assumptions" by Mediaset that Vivendi has subsequently subjected to a due diligence report by Deloitte after it questioned them. He said the "due diligence review", which found that the figures provided by Mediaset about Mediaset Premium's prospects were not realistic, had been "agreed contractually".

Mediaset, on the contrary, asserted that the April 8 deal was based on information that was true and assumptions that were realistic, based on data that had been transparent and fully shared with Vivendi. It said that the contract was clear and did not include any clause that would allow Vivendi to unilaterally change the terms and conditions following subsequent due diligence. It denied that the pair were still involved in discussions when Vivendi pulled out and asserted that "everything had been discussed".

To reinforce this point, the company said that there was "never any will on the part of Mediaset to renegotiate in any way the terms of the contract".

It further said that the report provided by Deloitte was "subjective and biased".

De Puyfontaine raised questions about the European Commission's regulatory process and its impact on the deal. He said that the EC would not accept a formal filing while the pair were still "discussing their differences", and that EC approval may not have been granted in any case before the September 30 deadline after which the contract between Vivendi and Mediaset becomes void.

Mediaset alleged that Vivendi's dealing with the European Commission had been initiated without sharing any information with it, "in clear violation of the provisions of the contract".

Mediaset is suing Vivendi for €50 million a month starting from June 25, the date the French company said it did not intend to honour the contract. Mediaset also said it risked losing €1.5 billion if Vivendi ultimately failed to respect the terms of the original deal.

Mediaset's parent Fininvest has filed its own separate claim in Milan, asking for an order to be served on Vivendi to force it to "fully comply" with the April agreement and also claiming compensation of "at least" €570 million for "the serious damages already caused". The figure relates to the decrease in the value of Mediaset's shares since Vivendi pulled out of the agreement, and "the fact that their value would have increased had the contract been executed and the undeniable harm caused to corporate image".

## France

**CAB > SFR teams with BeIN**

Altice-owned French service provider SFR has teamed up with BeIN Sports to unveil bundled offerings that include its own sports channels and BeIN Sports' services as part of its Box Power offering for €29.99 a month for the first 12 months.  SFR Sport will be available on its own in the Box Starter pack from €19.99.  The Box Power pack includes BeIN Sports' bouquet of 10 channels across multiple screens, including its Ligue 1 and Champions League football coverage, and the SFR Sport bouquet, including English Premier League coverage. The launch of the services and the partnership with BeIN Sports brings SFR head-to-head with Canal+, which offers both its own and BeIN Sports' channels. Canal+'s offering, with all 15 sports channels on the Canalsat bouquet – including Eurosport and BeIN Sports - costs €35 for the first 12 months and €59.90 thereafter. SFR's bundle with BeIN Sport reverts to a price of €54.98 after a year.  SFR  unveiled the line-up of presenters for its channels ahead of launching the service. The group also signed a deal securing rights to Portuguese top-tier football. Canal+ signed a non-exclusive deal with Qatar-owned rival BeIN Sports in July after the French competition watchdog rejected the pair's proposal for an exclusive deal.

## Germany

**PROG > RTL on the up**

France's M6 Group and RTL Deutschland helped boost media group RTL's first half performance, which also benefited from strong growth in digital. First half revenues were up 3.2% to €2.878 billion, with digital revenue up 20.5% to €264 million. The performance dipped in the second quarter, however, with revenue dropping by 2.3%. This was due to lower revenue from production outfit FremantleMedia, along with the impact on advertising of the Euro 2016 football championship, except in France, where M6 aired some matches. RTL's EBITDA was up 8.1% to €679 million, with an EBITDA margin of 23.6%. Net TV advertising was up in all markets except Hungary. Digital business performed strongly, with catch-up TV services, websites and MCNs attracting a total 123.1 billion online video views, up 190% year-on-year. Net profit was down slightly, falling from €351 million to €341 million due to higher tax charges. RTL now expects full-year EBITA to grow by between 1% and 2.5% if there are no major changes in the economic climate. Its revenue outlook – of growth between 2.5% and 5% – was maintained. Anke Schäferkordt and Guillaume de Posch, co-CEOs of RTL Group, said that the performance of the group ''confirmed once again the sustainable success of RTL Group's portfolio and growth strategy''. The results came as FremantleMedia struck a deal with Amazon to show its fanatasy drama *American Gods* on Amazon Prime next year. The show will be available on Amazon's SVOD platform in Germany, Austria, the UK and Japan following its US premiere on Starz.

**SAT > Sky to launch 4K UHD**

Sky Deutschland is launching a new 4K Ultra HD set-top and channels in the autumn. The Sky+ Pro box is being rolled out along with the launch of two exclusive UHD TV channels – Sky Sport Bunedesliga UHD and Sky Sport UHD. The Bundesliga channel will provide highlights of German top-tier football in UHD, while Sky Sport UHD will air selected matches from the UEFA Champions League tournament in the format. Sky Sport Bundesliga UHD will show one match per day in the UHD format. Sky said that other UHD content including movies and series would follow the launch. These will be made available via Sky On Demand. The new box is said by Sky to be HDR-capable, with a 1TB hard drive and built-in WiFi, providing fast access to Sky On Demand and the EPG. All Sky customers with the HD Premium package who take the new box will receive 12 months' free access to the UHD offering. The box will be made available to new and existing customers in Germany and Austria via both satellite and cable, according to Sky. The German Football League (DFL) has meanwhile said it is to introduce a new production standard to support 4K coverage of Bundesliga matches in the next few weeks. Holger Blask, director of audiovisual rights at the DFL, said that the Speilzeit Ultra HD standard demonstrated the Bundesliga's commitment to innovation. Sky recorded its first football match in UHD in 2012 and broadcast the first live UHD match in 2014. In December that year it also broadcast a concert featuring German band Die Fantastischen Vier (The Fantastic Four), following this up by showing the 2015 German Cup final and Champions League final in sports bars in UHD.

# Q&A: Tom Munro, Verimatrix

Tom Munro, CEO of Verimatrix, talks about the promise of data analytics, how to protect live premium content and the challenge of IoT.

**What are the key benefits that video data from content security systems can deliver to content providers and what are they likely to prioritise?**

Securing video analytics data is a high priority for operators and customers. However the intricacy of data security is a sensitive topic as service providers are faced with new risks of maintaining data privacy and consumer trust. They need to not only comply with privacy regulations – and the expectations of their customers, and the company's ethical standards, but also secure the integrity of the data they are collecting.

For example, the most valuable data pertains to individual customer behavior, which by its nature is personal, sensitive and typically subject to data privacy regulations. This type of information is highly valuable only if the source is authenticated, the data is secured and its integrity guaranteed. Furthermore subscribers must be convinced that their data is secure and be persuaded that they will gain value by allowing their service provider to access it. This is why we refer to security as the Big Data industry's "new key performance indicator."

As the specialist in video platform security, Verimatrix is well positioned to securely aggregate and curate this potentially sensitive data.

**What still needs to be done to enable content and service providers to achieve meaningful results from data analytics?**

We advise our customers to start with an organizational asset management plan for the collected data. There can be differences in the needs of the various data sets within an organization, meaning that each key stakeholder—whether it is operations, product development or marketing—may utilize the same or similar data in oftentimes conflicting ways. The handling of this data must balance regulatory requirements along with an operator's own data policies and subscriber permissions.

Once the use cases of handling the data have been determined, operators need to understand their regional and local privacy regulations and map those regulations to the credentials granted throughout their departments, allowing access for a specific user to a specific subset of data.

**What are the challenges in protecting live premium content from piracy and what can Verimatrix do to mitigate the threat?**

The added complication of premium live content (such as live sports) is that such events are becoming increasingly broadcast in UHD format and present highly attractive targets for pirates. Plus, the window of opportunity for countermeasures is very short—beginning with the moment the action happens, and decaying the moment it's passed. It is not sufficient just to detect and prosecute pirates because business damage has already been done. Therefore the only recourse is to snuff out illicit streams at the source, almost as quickly as they begin to be transmitted over the Internet.

Our VideoMark toolbox of solutions for video tracking and forensic identification has helped pay-TV operators maximize the revenue potential of premium and ultra HD content, while protecting such content. The VideoMark™ Live profile version inserts watermarks, which are transparent to the viewer, but are more visible and faster to extract. We are able respond as soon as illegitimate streams are detected, shutting them down before any significant loss of revenue has occurred.

**What are the key remaining challenges faced by operators in targeting platforms and devices that use different DRM systems and what can they do about this?**

The increasing complexity of multi-DRM usage and what that means for different device's rights management can directly affect the consumer's enjoyment level. If any glitch arises in the stream, content viewership will be compromised. What we learned from a recent **Frost & Sullivan white paper** is that many operators simply underestimate the total cost of ownership in developing and maintaining a multi-DRM system.

Unlike many software systems, the OPEX aspect of a multi-DRM is a far more significant chunk of security products due to an inevitable arms race against hackers and the constantly growing value of content. CAPEX is a recurring expense as new devices enter the market and new technologies supersede older ones. As DRM underlies all content business models, a lack of agility in updating and adapting the DRM layer also results in reduced revenue and lost subscribers.

Our MultiRights OTT solution solves multi-DRM challenges by providing harmonized rights management across networks and devices.

**What additional security challenges are raised by the smart home and Internet of Things applications and what do service providers need to think about when adding these services to their consumer offerings?**

IoT is expanding into the smart home sector very rapidly. Vendors of home appliances, from toasters to coffee makers to vacuum cleaners, are now interested in collecting usage information that can help them improve designs and also to execute more compelling marketing campaigns. The personal data collected must be carefully encrypted to defend against eavesdropping or identification of individuals since the data itself is so private.

We utilize our video services experience with protecting the integrity of data collected. Consumers may be offered an incentive, such as a discount, in return for allowing such usage data to be mined. Analyzing and monitoring behavior on the network will be integral to IoT security. This data acts as a first line of defense against emerging threats or attacks that can be flagged and addressed directly, before systems are hacked, leaving the consumer and service provider protected.

*Verimatrix will be exhibiting at IBC, on stand 5.A59*

## Events

### CAB > Advanced TV plan

Cable operator Tele Columbus has confirmed plans to launch its Espial-powered advanced TV service in December, following a successful trial that concluded in April. The company said that close to 70% of trial participants regularly used the advanced TV user interface to find content and learn about the programme they are watching. Tele Columbus more than doubled its Q2 revenues to €119.9 million year-on-year following its acquisition of smaller operators Primacom and Pepcom. On a like-for-like basis, Tele Columbus saw solid revenue growth of 4.2%. EBITDA for the quarter was €59 million, up 113% or 2.3% on a like-for-like basis. Tele Columbus had 2.42 million customers at the end of June, including: 2.44 million cable TV revenue-generating units; 424,000 premium pay TV RGUs; 485,000 internet customers, up 10,000 quarter-on-quarter; and 452,000 telephony RGUs, up 11,000 quarter-on-quarter.

### IPTV > Telekom growth

Deutsche Telekom grew its total IPTV, satellite and cable TV customer base by 5.1% year-on-year to 3.96 million in the second quarter. The telecom operator said that the majority of its 193,000 net TV additions, compared to the second quarter of 2015, were customers in Greece, Romania, Hungary, and Slovakia. Germany, meanwhile, remained the biggest single TV market for the company with 2.77 million IPTV and satellite customers in the quarter, up 7.7% year-on-year. In the first half of 2016 alone, the company said it added 94,000 TV customers. Deutsche Telekom said that 100,000 OTE TV customers in Greece were able to use its new hybrid platform by June, after it started to migrate customers in April. The new service allows satellite TV subscribers to connect their decoder to the web, giving them access to interactive services like replay functions and on-demand content. Deutsche Telekom's total revenue for the second quarter was up by 2.2% year-on-year to €17.8 billion. The company said that rapid customer growth at T-Mobile US made "a substantial contribution" to this revenue growth. EBITDA was up 3.6% to €4.7 billion while the telecom giant's net profit dropped 12.8% to €621 million. However, Deutsche Telekom said that adjusted for special factors, net profit remained more or less stable in Q2 at around €1.1 billion.

## Vice CEO: Global media headed for 'chaos'

**By Jesse Whittock >**

Vice Media chief executive Shane Smith used his MacTaggart lecture in Edinburgh to claim the television and wider media world is set for a "bloodbath" of M&A activity and a "dose of chaos" as new business models emerge.

Smith said that the changing digital landscape meant "mainstream media companies" – including Disney, Comcast, Fox, Viacom and Time Warner – were facing a global market that would prove too difficult for all to survive. Therefore, they were all chasing scale, he argued.

Smith's Vice has sold shareholdings to both Fox and The Walt Disney Company, but he claimed he had turned down full takeover bids from both, and from Viacom, and that the firm's recent launch of linear channel Viceland around the

Smith: media world is set for a "bloodbath".

world was a sensible move.

"The big five will become the big three," he said of market consolidation. "Apple has made a bid for Time Warner. They also want to buy Netflix, and if Viacom continues its Shakespearean implosion – which is a glory to watch – then everybody is going to be snapping off bits." Smith noted that Facebook and Google were in command of around 70% of the online video market and that changes to their algorithms had already shocked the market this year.

"When they sneeze, we catch cold. It means a lot less traffic and a lot less money. In the long term, it means a changing playing field, a mild to medium dose of chaos, and a fast moving, ever-shifting, highly volatile marketplace, in which only the nimblest and most dynamic companies will survive," he said. "As many as 30% of content companies that exist this year will go away this year, will merge or sell their URLs. On top of that, the big scale plays will be bought up by mainstream media companies, and so anyone with half a brain in digital is making strategic alliances. What we're seeing happen is consolidation in mainstream media and a lot of new media is going to go away. There's just not enough money."

He said that TV had refused to innovate and was instead "retreating, with a lot of lawyers around us, to hold onto our IP and an increasingly small piece of the pie".

## Global Wrap

Hong Kong-based VR firm **VR-rOOm** has partnered with Chinese cinema systems provider **CFEC** to launch a network of virtual reality cinemas around the world. VRrOOm aims to launch VR cinemas in China and France this autumn and in the US next year. **Amazon Prime Video** is working on its first South Korea-produced original series. The SVOD service is working on a live-action drama series, *Idolm@ster.kr*, set in the Korean entertainment scene. According to **Digital TV Research** the number of pay TV subscribers in Latin America is due to climb from 72.02 million by end-2016 to 83.56 million by 2021. The new research says that Latin America's top two pay TV operators will account for nearly half the region's pay TV subscribers by the end of 2016. **DirecTV/Sky** will account for 20.2 million subscribers and **Claro/America Movil** for 15.2 million. **Comcast** is set to go head-to-head with **Disney** in the kids and family sector after **NBCUniversal** completed its US$3.8 billion (€3.4 billion) takeover of **DreamWorks Animation.** The deal hands Comcast's entertainment wing NBCU franchises such as *Shrek* and *Kung Fu Panda*, online assets including **AwesomenessTV**, and distributor **DreamWorks Classics.** **Viacom**'s main shareholder, Sumner Redstone, has called for the media giant to "embark swiftly" on a new strategy after the exit of Philippe Dauman. Viacom and Redstone's **National Amusements** holding vehicle confirmed Dauman was leaving his post as CEO and president and would be replaced in the interim by Tom Dooley.

### OTT > DAZN launches

Sports rights group Perform has launched its DAZN live streaming service in Germany, Austria, Switzerland. DAZN is described by Perform as the world's first dedicated live sports streaming service, providing fans with unlimited access to watch live and on-demand sport on multiple devices. The service is available for €9.99 a month with no long-term fixed contract. Customers can try the service for free for the first month. DAZN gives fans live access to English Premier League football, as well as live football from La Liga, Serie A and Ligue 1, plus highlights of every match from Bundesliga and Bundesliga 2. Other sports on the platform include NBA, NFL, tennis, motorsports, boxing, ice hockey, rugby, darts and much more. Perform followed up the launch of DAZN in these German-speaking markets by also launching the OTT TV service in Japan. The Japanese version of the service will provide advertising-free access to a range of live and on-demand sports content for ¥1,750 (€15) a month plus tax. Content to which Perform holds rights to air via DAZN will include, from 2017, every game from J1, J2 and J3 leagues of Japan's Meiji Yasuda Seimei J.League.

## Hungary

### CAB > UPC adds channels

Liberty Global-owned UPC Hungary has added two channels from TV2 Group to its programming line-up. UPC has added telenovela channel Izaura TV, offering romantic series from around the world including '90s hit *Muñeca Brava* (*The Wild Angel*) along with *La Viuda Joven* (*The Black Widow*) and Turkish series *Queen of the Night.* Izaura TV has also launched on the MinDig TV digital-terrestrial platform. The second channel UPC added is music network Zenebutik (Music Boutique).

## Liberty Global plans 'smart' content investments

**By Stuart Thomson >**

Liberty Global plans to make "smart, opportunistic investments" in content following its recent announcement that it would commission four original drama series from All3Media, according to president and CEO Mike Fries.

Speaking to analysts after the company unveiled strong Q2 financial results, Fries said that the group would make "smart, relatively small investments in multiple markets to get some content on our platforms that's unique to us". He said Liberty was now putting more emphasis on SVOD content and rights that drive growth of its TV Everywhere platform.

Fries said that Liberty's content moves would not "significantly change the weighting of [the company's] balance sheet or cash flows", however.

While video only accounts for 35% of the company's revenues, Fries said that it is a "critical part" of the bundle and that content costs would grow year-on-year at or above the rate of

Fries: video is a "critical part" of the operator's bundle.

increase in revenues, because content drives revenues across the bundle. He said these increases would be offset by decreases in direct costs.

Fries said that analysts should "expect more" of the type of content deals it has done with All3Media, adding that its relationship with Lionsgate, in which it now has a 3.4% stake alongside Discovery, was "off to a great start". He said that the four originals from All3Media would be distributed by Liberty Global's networks exclusively, "at least from the outset". Virgin Media UK & Ireland, Unity Media in Germany, Ziggo in the Netherlands and Cable & Wireless, VTR and Liberty Puerto Rico will all air the shows.

Fries said that Belgian subsidiary Telenet's investment in content was also bearing fruit,

citing the fact that Chausée d'Amour, the brothel-set SVOD original it commissioned from production outfit De Mensen, had broken records in Flanders with half a million streams requested in the first two weeks. The series debuted on May 10 on Telenet Play and Play More.

Separately, Liberty Global's advanced TV base passed the seven million mark in the second quarter, with 184,000 new Horizon TV subscribers across Europe and 66,000 new TiVo customers in the UK. The growth means that 36% of Liberty's base in countries where such services are offered take one of its advanced TV offerings.

Overall, Liberty Global added 277,000 subscribers in the second quarter, double the 138,000 it added last year. Revenues were up by a modest 2% in the quarter to US$5 billion (€4.5 billion), adversely affected by The Netherlands. Operating income was down 22% in the second quarter, to US$488 million. In Europe, operating income declined by 9%.

## Kenya

**PROG >** **Free sports channel**

Econet Media has launched a free-to-air sports channel that will offer coverage of English Premier League football as well as NBA basketball, Extreme Fighting Championship combat sports and NFL American football. The channel, Kwesé Free Sports, will be available on digital-terrestrial TV and on satellite in Kenya via free-to-air set-top boxes. The channel has exclusive free-to-air rights to air one Premier League match of the week every Saturday. Kenyan content on the channel includes Xtreme Outdoor Africa, Ball N'Africa and Sports Stars Uncovered. Econet Media is a unit of Econet Wireless, a mobile telco founded by Zimbabwean businessman Strive Masiyiwa. Masiwiya revealed at the end of last year that he was planning to launch a broader pay TV service called Kwesé TV, offering a mix of sports and entertainment programming across sub-Saharan Africa, including to mobile users.

## Lithuania

**CAB >** **CGates flexibility**

Starman Group-owned Lithuanian cable operator CGates has launched flexible channel packages in place of the big basic model it previously offered to TV subscribers. In place of big basic, CGates is offering nine smaller thematic channel packages, which subscribers can combine and modify on a month-by-month basis. The channel packages encompass films, sports, news, entertainment, factual, kids, Russian and world channels, with a package of Lithuanian channels offered free to all. According to commercial director Tomas Burovas, subscribers will be able to sign up for one of five plans offering one, two, three, five and all packages respectively for €14.90, €19.90, €23.90, €29.90 and €34.90. Subscribers will be able to change their line up each month. Customers who take the one, two and three-package plans will also receive internet access at speeds of up to 300Mbps, while the higher-tier plans will receive 600Mbps as well as video-on-demand.

## The Netherlands

**IPTV >** **KPN makes Fox offer**

KPN is now offering the Fox Sports Eredivisie channels for €7.50 a month for new and existing subscribers, instead of the €17.50 previously charged for the channels. KPN is also offering the three Eredivisie channels, which provide coverage of Dutch top-tier football, as a free channel package to top-tier KPN Compleet customers, alongside the HBO package and a premium kids package. The price of all Fox Sports channels together will be €15 instead of the €25 previously charged. The price of Fox Sports International on its own remains at €12.50. The move follows a deal between KPN and Fox Sports earlier this month that came after a dispute between the pair over Fox's decision to charge the telco a higher fee for its channels than that levied on other distributors in the Dutch market. KPN lost a court case over the dispute with Fox's Eredivisie Media & Marketing subsidiary, with the judge in the case ruling that Fox was not obliged to offer identical conditions to different operators. The Dutch Authority for Consumers and Markets meanwhile launched an investigation into the terms under which Fox proposed to sell its sports channels.

# Q&A: Ole Ledang, Telenor Satellite

Ole Ledang, director broadcasting division, Telenor Satellite talks about the evolution of teleports and the changing role of satellite.

**What impact is the evolution of content distribution having on the design and functionality required of satellite teleports?**

It really depends on which part of the content distribution value chain the satellite teleport is in. If it is only providing services for DTH operators and for DTH markets the content distribution is quite straightforward. The main task then is to provide cost-effective solutions based on the encoding and modulation schemes available for the set-top boxes in the market.

But if the satellite teleport is also providing services for other distribution networks and platforms, this involves a very different way of thinking. One has to consider flexibility, the life cycles of the equipment, how to operate, pricing models, a variation of SLA levels, etc.

**What additional demands have been placed on Telenor's own ground infrastructure and how have you responded?**

Telenor Satellite is in the fortunate position of having competitive and forward-looking content distributors such as Canal Digital (both DTH and Cable) and IPTV providers such as Telenor Norway and Sweden as customers. Providing high-quality services has placed Telenor Satellite on a steep learning curve.

Initially, one of the most demanding challenges was to find automated solutions for monitoring close to 1,000 linear TV services alongside a growing number of OTT services. We did not have the wall space or the resource for manual monitoring. The cost had to be kept to a minimum.

We have invested substantial hours in development, working together with our customers and the industry to find the right technical design and solutions.

The OTT train has left the station at an accelerated speed – we need to jump on and gain knowledge and competence to develop our company and continue being an important provider of services for our existing and future customers.

**What do satellite service providers such as Telenor need to put in place to ensure that your customers' needs are being met?**

Our customers expect linear TV services live on satellite to run like clockwork at a competitive price level and that any technical challenge is handled professionally and communicated to the customer effectively. We also have to provide flexible OTT solutions – both live and catch-up – to our customers, with high SLA and at short notice. In order to achieve this, Telenor Satellite had to consider a new way of designing the infrastructure and production line at our teleport.

Our customers do not accept a delivery time of 30 to 40 days – they demand that changes take place before lunch. There is now a much closer relation between technical environments and commercial business development and strategy, which fuels the speed of launching services and introducing changes.

For us, it all boils down to developing infrastructure and organisation that fully support our customers' needs.

**How has the range of services you provide changed as content distribution has evolved and what have you put in place to support IPTV and OTT distribution?**

As mentioned earlier, our customers have developed their menu of services to end-users.

Telenor Satellite initially provided five analogue D2-MAC services for the Nordic market, via the THOR 1 satellite. We are now delivering close to 1,000 digital services in the Nordic and CEE markets through THOR 5, 6 and 7 and operate CATV head-end and IPTV services in the Nordic region providing some 50 live and 100 catch-up OTT services.

Investing in robust and flexible systems-that is, in equipment that can easily and swiftly deliver multiple versions of the same TV channel: in HD and SD, MPEG2 and MPEG4, DTT encoding, IP, etc is how we have managed to stay afloat. One of the most challenging task has been to develop our organisation to be on top of operational issues and find commercial and technical solutions that work in an ever-changing sector. As established in our customer survey, so far we have been successful. This has been extremely important for us through a period of great changes – and challenges.

**What key trends do you expect to see in TV broadcasting over the next few years and what do you need to do to anticipate these?**

An increased number of distributors are chasing the end-user's money. The cake is getting bigger, but not at a pace that ensures success and growth for everyone.

The distributors are spending their energy to "re-establish" their position by ensuring the right content at the right quality and increasing attractiveness through their home solutions, including OTT.

Our main task is to ensure the success of our customers – the content distributors – in their markets. We could have chosen to continue to provide satellite services only. But we decided to diversify our operation by developing our systems and operations in order to ensure the success of our customers.

Today we have demonstrated success and will continue by staying on top of the technical side of product development.

Telenor Satellite has set a clear goal of being even closer to our customers, understanding their needs and helping them to develop products that ensure their competitiveness.

Luckily, we live in exciting times, and we are truly enjoying the journey of TV consumption.

**Ole Ledang**, director broadcasting division, ole.ledang@telenor.com
Visit the company's website at **www.telenorsat.com**

## Poland

**SAT > Polsat revenues down**

Polish pay TV provider Cyfrowy Polsat posted reduced second quarter revenues of PLN2.443 billion (€559 million), down from PLN2.469 billion for the same period last year. Net profit declined from PLN305 million to PLN231 million. The company had 12.881 million revenue-generating units at the end of June, up from 12.744 million at the end of the first quarter. Pay TV customers numbered 4.632 million, including 973,000 multiroom customers. Broadband customers numbered 1.689 million, while mobile subscribers numbered 1.667 million. The company attributed the decline in revenues to a decrease in voice revenues, partially offset by higher pay TV and broadband

revenue, as well as stronger advertising revenue and revenue from sales of equipment. Separately, Polsat Group has added a raft of 31 new channels to its Ipla OTT service, expanding the offering to 77 services across seven packages. Ipla has added sports channels Eleven and Eleven Sports HD, Polsat Sport Fight HD and Extreme Sports HD. Movie and drama channel additions include TNT HD, Universal Channel, 13th Street, Sci-Fi and Novela TV. Ipla has also added entertainment and lifestyle services Discovery Life, E! Entertainment, ID HD, Lifetime HD, CI Polsat, Polsat Food, TLC HD and Discovery Turbo Xtra along with factual channels Discovery Science HD, Animal Planet HD, Travel Channel HD, History 2 HD, Discovery Historia and Water Planet. Other additions include music channels MTV Music 24, MTV Rocks

and VH1 Classic, and kids channels Disney Channel, Disney Junior, Disney XD, Boomerang and Cartoon Network HD. Polsat is marketing the expanded channel line-up within seven revamped packages. Most are available for PLN9.90 a month. Ipla Films and Series and Ipla Sport each cost PLN19.90 a month, while Ipla Eleven Sport costs PLN15.

## Qatar

**PROG > Olympic deal**

Middle East free and pay TV broadcaster BeIN Media Group has formalised its deal with the International Olympic Committee to be the exclusive broadcaster in the MENA region for the next four Olympic Games, starting with the 23rd Olympic Winter Games in Pyeongchang. The pair have formally signed a

deal agreed last year that will see BeIN Sports become the exclusive broadcaster of the Olympics across the region, including the Olympic Winter Games in Pyeongchang and Beijing in 2018 and 2022 along with the rights to the Olympic Games in Tokyo in 2020 and the Olympic Games in 2024. BeIN Sports distributes 18 linear sports channels acdross 24 territoires in MENA, including both free and pay TV services and a 24-hour rolling sports news channel. It also provides BeIN Connect, a multiscreen service. BeIN has committed to air a minimum number of hours from both summer and winter Olympics on free-to-air TV. Under the terms of the deal, the IOC and BeIN will also work closely together on the Olympic Channel, the dedicated channel that is scheduled to launch on completion of the Rio games.

# Canal+ faces €300m cost cuts, international subs surpass French

**By Stuart Thomson**

French pay TV operator Canal+ continued to lose domestic subscribers during the first half, with total services sold declining by 272,000 to 8.187 million in June. The Vivendi-owned pay TV operator is to implement a programme of cost cutting in a bid to stem its losses.

Canal+ revenues for the first half of the year dropped by 3.5% to €2.639 billion. Operating income was €297 million, down from €368 million, while EBITA fell from €388 million to €297 million. Parent company Vivendi attributed the decline to the problems faced by the domestic French pay TV unit and to lower profitability at production outfit Studiocanal and the group's free-to-air channels.

Canal+ is in the process of implementing a €300 million cost savings plan, cutting €100

million in costs associated with marketing, set-top management and other subscription-related costs as well as cutting €150 million from its programming budget. It said that about €60 million to €80 million in savings were expected to be realised this year.

Speaking on an analyst call following Vivendi's results, CEO Arnaud de Puyfontaine said that the transformation plan had a "clear ambition to restore value proposition by clarifying our TV offer between pay and free TV" and that it was "totally right on track".

Following the revamping of the Canal+ offering in June, De Puyfontaine said that subscribers would be able to view an additional 150 hours of original content from September, and affirmed that the free-to-air window would be reduced from a maximum of six hours a day

**De Puyfontaine: Vivendi aims to clarify TV offer between pay TV and free TV.**

to two, with the company's free-to-air channels renamed and strengthened to compensate.

The group's international pay TV base continued to grow, with additions of 615,000 in the year to June taking the international total for Africa to 2.2 million, and the addition of 139,000 subscribers in Vietnam taking the total in that country to 900,000.

De Puyfontaine said that international pay TV subscribers now outnumbered domestic customers for the first time, with 5.727 million international subs against 5.455 domestic French customers.

Du Puyfontaine said that

Canal+ would launch a new digital-terrestrial TV offering, EasyTV, in the neighbouring capitals of the Congo and Democratic Republic of the Congo, Brazzaville and Kinshasha, before the end of the year, as part of a wider African expansion that earlier this year saw the group partner with iROKO to launch a mobile SVOD service for Francophone Africa.

Overall, Canal+ ended the second quarter with 15.8 million subscriptions, a year-on-year increase of 558,000.

Vivendi's revenues dropped by 1% to €5.044 billion. Revenues from growth in subscription and streaming revenues from Universal Music Group helped boost the figures along with Canal+'s overseas performance, which helped offset the decline in the domestic business. EBIT was up 3.4% to €1.062 billion.

## Russia

**IPTV > MTS TV boost**

Russian service provider MTS had 2.75 million TV customers at the end of the second quarter, up from 2.745 million in March and up from 2.73 million at the half-way point last year. MTS reported Q2 revenue of RUB108.1 billion (€1.5 billion), up 5.3%, including RUB97.4 billion in Russia, up 3.3%. However, OIBDA for the quarter was down 4.3% to RUB40.885 billion. The company's total active subscriber base grew by 3.5% to 109 million. President and CEO Andrey Dubovskov said that the company had managed to outperform the market despite difficult macoeconomic circumstances and competitive pressures. Dubovskov identified home internet and pay TV as growth markets.

## Spain

**OTT > Now TV plan**

Sky is planning to expand its presence in more European markets, kicking off with the launch of a version of its Now TV online service in Spain, according to a report by the UK's *Sunday Telegraph* newspaper. According to the *Telegraph*, Sky sees the launch of Now TV in Spain, where the service is expected be offered for €10 a month, as the first phase in a wider plan to take on the likes of Netflix and Amazon across Europe. The paper reported that Sky has been secretly planning the move for over a year, with the aim of launching in further European markets where it does not already have a satellite pay TV operation if the Spanish venture is successful.

## Switzerland

**IPTV > Swisscom grows base**

Swisscom grew its TV base by 33,000 in the second quarter despite what it described as "fierce competition" from cable. The additions take the telco's TV base to 1.4 million, up 13.1% year-on-year. The TV total included 1.15 million basic package subscribers. Swisscom said that three-quarters of customers now use its cloud-based Swisscom TV 2.0 service. Overall, Swisscom posted revenues of CHF5.8 billion (€5.3 billion) for the first half, more or less flat year-on-year. Operating income was up 2.7% to CHF1.14 billion. The company said it expected a slight decline in revenues for the full year, with growth in TV, broadband and mobile failing to offset declining telephony revenues. Rival service provider Sunrise meanwhile reported a 20.4% year-on-year increase in TV customers at the end of the second quarter. Reporting its Q2 results, the operator said it added 24,200 TV subscribers year-on-year, taking its total to 147,200 customers.

## Turkey

**IPTV > Funbox 4K launch**

Channel provider SPI International has launched its Funbox 4K/UHD channel on Turkcell and added five extra TV channels to its current line-up offered by the Turkish mobile operator. Turkcell TV+ has recently introduced a 4K set-top box and started broadcasting Funbox 4K/UHD, making it the first IPTV platform to launch Ultra HD channels in Turkey. Turkcell's subscribers now also have access to FilmBox Turkey, a dedicated Turkish channel that airs a variety of international blockbusters and popular TV series. Other new channels on the platform include FilmBox Art House, Fast&FunBox HD and 360TuneBox HD.

## UK

**PROG > A+E starts Blaze**

A+E Networks' latest channel brand, Blaze, launches in the UK and Ireland this month. The network is planned as A+E's first global free-to-air channel, but will debut in the UK and Ireland on September 20. It will be carried on the Freeview platform and on Sky, with Sky Media handling ad sales. It will simultaneously launch as a TV Everywhere service on iOS and Android mobiles and tablets. The channel will offer series such as *Pawn Stars*, *Mountain Men* and *American Restoration*, among others. For A+E, Blaze is a second free-to-air channel launch this year, coming after the debut of Lifetime in Turkey in April.

# Netflix international subs to outnumber US by '18

**By Jesse Whittock >**

Netflix will have more subscribers outside of the US by 2018, according to new research.

IHS Markit noted Netflix's subscriber base grew 30% between 2014 and 2015, and is forecast to grow 21% this year, as the SVOD service reaches a "territorial expansion" peak.

International subscribers will grow 38% this year, the research claimed, with more than 2.8 million of these coming from the 130 new territories Netflix expanded into in January when it went virtually global (notably excluding China).

"At the moment, Netflix has 79.9 million total paying subscribers," said Irina Kornilova, senior analyst at IHS Technology. "By 2018, international subscribers will overtake the number of subscribers in the US for the first time, and by 2020, Net-

flix will have 75 million international subscribers."

Netflix is expected to break the 100 million subs mark by 2018. IHS claimed Netflix's revenues would reach US$13 billion (€12 billion) by 2020, with 53% coming from international markets. Domestic revenue will hit US$6.2 billion, with international taking around US$7 billion. Unsurprisingly, western Europe will be among the leading regions outside the US for Netflix by the end of this year, with more than six million subscribers in the UK. There will also be a combined 5.4 million subs from the Netherlands and

the Nordics combined. Germany will reach 2.2 million paying subs by the end of 2020, despite strong competition from Amazon, IHS predicted.

Markets such as Poland and Turkey, which are soon expected to be 'localised' by Netflix, will drive further uptake in their surrounding regions, but the effect will not happen immediately, said IHS.

"With the worldwide launch, Netflix has launched a platform upon which it can build and differentiate the service to fit specifics of every region in the future," Kornilova said. "Netflix is starting this localisation process in Poland and Turkey this year. Subscribers in these countries can expect an addition of local languages to the user interface, subtitles and dubbing of content. This will help drive new subscriber numbers dramatically."

# Virtually real

**Virtual Reality is tipped to become a big business in the coming years. But how much potential does this technology hold for TV companies and to what extent should they be investing in this space? Andy McDonald reports.**

**The** Virtual Reality sector is predicted to balloon in the coming years as new headset technology, games and content all hit the market. Today, VR enthusiasts already have a number of options ranging from HTC's high-end, PC-tethered Vive headset, to Samsung's Galaxy smartphone-compatible Gear VR, and Facebook's Oculus Rift headsets which launch in Europe in September. However, the October launch of Sony's PlayStation VR headset, which is designed to plug into PS4 consoles, and the autumn release of Google Daydream – a mobile VR platform that encompasses smartphones, a reference design for a headset and controller, and apps – means that by Christmas VR technology will be in more people's hands than ever before.

Analysts clearly believe in the momentum behind VR – both 360° video and 'true VR', which is typically computer rendered. Research firm IDC predicted earlier this year that worldwide shipments of virtual reality (VR) hardware will "skyrocket" in 2016, reaching 9.6 million units and revenues of US$2.3 billion (€2.1 billion). A Diffusion Group study from January claims that by 2025 VR will have a global user base of more than 275 million people and Futuresource Consulting predicts that total global spend on VR video and games content will reach US$8.3 billion by 2020. Meanwhile, Cisco's most recent Visual Networking Index says that VR web traffic will increase 61-fold by 2020.

For those that have tried the technology, VR has a profound ability to place people into alternative realities and to offer new experiences and perspectives. But will this new category of entertainment be a be a significant application for broadcasters and TV service providers, and if so, how should they be preparing themselves for this?

## Broadcasters get on board

Jaunt is a California-based specialist in cinematic VR – immersive, 360°, stereo video experiences – that has already won the support

**Jaunt's Paul McCartney concert footage is among its most popular content to date.**

of the traditional TV space. The company, which raised US$65 million in funding last September, is backed by a number of high profile investors, including Sky, Disney and ProSiebenSat.1. "What's great about what Jaunt does is we have an end-to-end solution for both creating, capturing, rendering and then distributing 360 VR content," explains chief business officer, David Anderman. "We also have a studio that helps kickstart the creation of content that goes into our library in addition to working with partners, big media companies like ABC News and film studios."

Before Jaunt, Anderman spent 16 years at Lucas Film where he served latterly as chief operating officer and general counsel before helping to sell the company to Disney in 2012. "One thing I loved about being at Lucas Film was George Lucas was just incredibly interested in this intersection between media and technology," he says. "Jaunt has that in its DNA in the sense of taking this incredible

technology that allows you to capture and distribute this content, but using that not as an end in and of itself but as a means to create these incredible experiences for consumers worldwide."

Anderman believes that VR is "the first entertainment medium that is native to smartphones" and claims that broadcasters, operators and content makers are already seeing the tremendous potential in VR as a platform. While there are a range of VR headset options, he claims that smartphones twinned with headsets are an inexpensive entry point for VR that will drive adoption to a much broader audience.

"It's a way to reach consumers worldwide," he says. "It's an IMAX-like experience, right in your pocket. There are a lot of companies – media companies in particular – looking to have a stake in this growing VR landscape. As a result, Jaunt continually gets inbound requests for investment. We're already among the most well-financed VR and AR companies, which gives us a huge advantage [but] we can certainly use additional capital to scale the growth of the company very quickly and expand."

In Europe, broadcasters like Arte have been among among the first to experiment with VR. The French cultural broadcaster released its first immersive cross-media doc series, *Polar Sea*, way back in November 2014 and in January this year launched a dedicated Arte360 app. The BBC is another early mover in this space. In June the UK public broadcaster unveiled its first "true VR" pieces of content, marking a distinction with the several pieces of 360° content that the BBC has previously published. Each of the new projects was designed to address challenges that would provide "invaluable insights for the organisation now and in the future," the BBC said at the time.

One of these projects was *Home – A VR Spacewalk*, a collaboration between BBC Science, BBC Learning, BBC Digital Storytelling and VR studio Rewind VR, which was built for the HTC Vive VR headset and is due out later this year. Discussing the development, Rewind VR founder and CEO, Sol Rogers said the aim of the project was to "really push the boundaries and create real-time game engine-driven virtual reality".

Home is essentially a short film, not a game, though Rogers says that the story gives the sense of freedom – "the illusion that you are there and you are crafting your own story" –

which is helped by the use of the Vive's hand gesture controls. "We've put these key narrative beats though the story," says Rogers, explaining that while users are free to roam the virtual space centre, some areas are inaccessible and cues from mission control are designed to keep users on track. "It's kind of like putting the bumpers up on bowling. You throw the ball down there and it will always go down and hit the pins at the end, but however you throw it is up to you."

Rogers claims that in a broad sense, many of the early VR projects being trialled by broadcasters and operators are essentially marketing exercises that can be used to show off first-mover credentials and to generate headlines. However, he claims that Rewind VR will only take on projects where the content is "very good" and will turn down work if it does not meet its standards. "Basically because we aren't owned or invested by anyone externally, we're only as good as the last project," he says. At such a formative time in the industry, the quality of work being made today will also arguably have a very real impact on whether consumers embrace VR and opt to invest in VR headsets.

## Defining experience

For Rogers, the PlayStation VR launch will play an important role in the uptake of virtual reality, with an existing installed base of more than 40 million PS4 consoles and a pre-Christmas release date likely to drive healthy sales of the headset. Indeed, speaking at the recent Edinburgh Digital Entertainment Festival, Simon Benson, director at the immersive technology group within Sony Interactive Entertainment Worldwide Studios said that PlayStation VR had been designed for a "really broad audience" and that for £349 (€409) in the UK and US$399 in the US, it has a "very low pricepoint when you compare it to any other option in high-end virtual reality systems."

Sony will play to its strengths by focusing on games for the launch of its forthcoming PlayStation VR system. However, in Edinburgh Benson did also demonstrate a number of non-gaming applications for the new headset, including a 3D concert recital that puts users at the centre of the performance, and a forthcoming PlayStation title called *VR Worlds* that includes one experience that does not have

any traditional "game mechanics".

"You've not got an objective, you're not trying to score anything or achieve anything – you're just experiencing it," said Benson, describing *Ocean Descent*, an underwater diving cage in shark-infested waters, which is one of five virtual reality experiences included in VR Worlds. He described this type of 'virtual tourism' as "a really interesting area" that has the potential to reach a wide audience and bridge the gap between what does and doesn't count as a "gaming experience". He also said that games developers were starting to explore 'tourist modes' within games – to allow players to pause from the action and take in impressive virtual vistas.

The kinds of experiences described by Benson pose fundamental questions about the kinds of content that will start to emerge in the age of virtual reality, and about the dividing lines between what games companies or entertainment specialists that should be looking to create.

Mark Harrison, director of transformation, design and engineering, at the BBC, says that while he believes that immersive technology – namely VR, AR and 360° video – will prove "extremely important culturally", they will not necessarily be extremely important for television. "In my view, there is no broadcaster that has to invest in VR or 360° at the moment. The desire to innovate is so baked



into the media industry that as soon as we encounter some new form of media or new way of communicating with an audience, we instinctively feel that it must be important for us and we must engage in it."

Harrison says that that there is huge potential around gaming, but after that, the media type best suited to VR is 'experience'. This is a category that he can see being very strong in brand experiences, marketing in retail and other areas such as training, education, health and "in some aspects of some of the things that TV does".

"What TV is very best at is storytelling. When you really get down to the details of what immersive technologies are best at, they're not best at storytelling – certainly not at long-form storytelling," claims Harrison. He believes that the rise of immersive, VR content will not necessarily be to the detriment of television – at least not for a very long time.

"I partly base that on our current capacity as human beings to keep on adding media forms to our consumption behaviours rather than them being substitutional. The ultimate example of that is the rise of gaming," he says. "I have a hunch that where we'll see immersive tech provide very strong experiences will actually be in different consumption contexts. So by that I mean increasingly if we are buying a holiday or we are buying a house or we are looking to buy a new car, we will find ourselves

being offered a VR or AR or 360 experience."

Nordic broadcaster Modern Times Group (MTG) is one of a number of television players currently figuring out where to navigate next in the VR space. Like NBC in the US and the BBC in the UK, MTG recently teamed up with Samsung to make VR Olympics coverage available on Gear VR headsets. MTG made approximately 100 hours of content available through the Viasat Sport 360 app, using the Games as an important learning opportunity. "We believe that for these kinds of technologies it's a perfect moment to collect user data, look into behavioural patterns and understand what are the key benefits and challenges with Virtual Reality in general," says Bartek Gudowski, chief technology officer at MTG Broadcasting.

Post-Olympics, Gudowski says that MTG aims to understand how to build a narrative and about different types of products and storytelling in VR. "I think our initial first stab is going to be to try to extend existing productions with virtual reality," he says, discussing ways to enhance content outside of just purely sports broadcasts.

"I believe it's primarily [about] experimenting with existing productions and adding on new experiences and trying to find the killer experience before we start with new productions of virtual reality – which is a very costful exercise," says Gudowski. "One very interesting thing for us in general is that our Ultra HD initiatives are going quite in hand with virtual reality, because they all require the same enhancements in terms of the camera technologies, the distribution networks and the resolution on the screens. So there are great synergies long-term with these two technologies and how they actually [help to] develop each other in the right direction."

## Content strategies

Mark Atkin is director of Crossover Labs, an international training organisation dedicated to developing cross-media content and exploring challenges related to developing digital media. Crossover also recently worked on a VR project for the BBC called *Easter Rising: Voice of a Rebel* alongside BBC R&D, BBC Learning and VR specialists VRTOV – producing a "new form of history documentary" that uses VR to present

***Easter Rising: Voice of a Rebel* is among the BBC's first 'true VR' projects.**

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historical events from the perspective of those involved.

Atkin, who previously held a multi-platform commissioner role at Channel 4, believes that VR is a good medium for documentary and the type of drama where the viewer can actually be on stage, interacting with the characters. He says some news would also be interesting – "breaking news where there's some value in being able to see all around you; things like the recent primaries in America." However, he is not convinced that sports, a category of content that is already designed for television would benefit. "You've got to think how does the experience in VR become enhanced? If all you're doing is just sitting in a crowd, I can't see the point of that."

MTG's Gudowski says that for sports, such as boxing, VR works "very well because you can actually get very close to the action". However, he concedes that that for some other sports, where you can't be close to the action, the viewer does not get the feeling of presence that they would necessarily expect. "Close up action, with a high degree of presence, makes [for] virtual reality in its perfect form."

Jaunt's Anderman says that a lot of the early VR experiences that have appealed to consumers are focused on travel and adventure, storytelling, sports and music. With the recent launch of Juant's publishing programme, which allows VR creators to publish their content directly to the Jaunt VR app, Anderman says "the content that we are accepting is fitting those criteria".

In terms of Jaunt's own production output from its two year-old Jaunt Studios

division, Anderman names a live Paul McCartney concert film, one of Jaunt's first VR experiences, as one of its most successful to date. Meanwhile, he also claims that news content tends to be very popular in the short-term, but then "falls off as that topic tends to fade away from the news". An example of this is was an ABC News-produced VR piece on North Korea, which Anderman says got an incredible reaction in the first 48 hours with

17 million 360° video views on Facebook alone, before traffic tailed off. However traffic did rise again months later when North Korea was back on the news agenda.

Rewind VR has done work in the past for brands such as Red Bull, Nissan and singer Bjork, and founder Rogers agrees that certain close up sports – like basketball and tennis – and music or concert footage have a lot potential in VR. However he says that the biggest area will be around "VR vignettes" – secondary stories or spin-offs around popular stories or characters. "VR can let me be in Harry Potter and let me do a wizard's duel," Rogers says by way of an example.

Looking ahead, Rogers believes that the VR space will grow "very rapidly" for those with

stakes in the entertainment business. "It's not going to be a bubble that bursts, but there's definitely going to be a good cooling off period when some of the people who aren't making the good stuff, who are calling themselves VR specialists, get found out," he predicts.

At the BBC, Harrison is not quite so convinced that VR will be a big part of the broadcaster's plans any time soon. While he sees the potential for more 360° video, he says that for "full-blown VR" it is probably more suitable for the BBC to provide input rather than try and build those experiences itself. "I'm sure that we will go on experimenting in this area but I wouldn't see it becoming part of our mainstream output for a while yet. There are still so many questions that need to be resolved and there's so much that needs to mature in this area," he says.

For others working in this space, the future is clear, and it can be glimpsed through the immersive lens of a VR headset. "I really do think that the current generation of toddlers probably will never ever turn on the television," says Crossover Labs' Atkin. "These are the ones who will be growing up in adulthood in

> **"There are a lot of companies looking to have a stake in this growing VR landscape. As a result, Jaunt continually gets inbound requests for investment. "**
>
> **David Anderman, Jaunt**

the post television screen world – they won't need that in the house anymore. We all need to prepare for that: the creative community and the broadcasters alike."

Jaunt's Anderman agrees, claiming that the "smart players" in media don't want to miss another paradigm shift, with recent history providing plenty of reminders about the need to keep up with digital trends. "The folks that waited to make the shift to digital-only music and stubbornly held on to physical distribution models literally got killed – they're no longer in business," he says. "I think in this day and age and across all media and entertainment those that fail to embrace these new trends in how content is consumed will die. I think no media company is going to take that risk." ●

# Magine

## Q&A: Rahul Puri, Magine

Magine chief technology officer Rahul Puri talks about new market opportunities, the importance of Quality of Experience and how to make money from OTT TV.

**What are the key underserved market opportunities in OTT TV and what challenges do content providers face in addressing these?**

The internet creates new opportunities and challenges. Opportunities lie in accessing new markets and audiences globally. You need to be excellent in micro-targeting, branding and online promotion, or find distributors that can promote you locally or in different interest communities. Additionally, there needs to be flexibility in monetisation strategies as one target group in a region may prefer to pay for content differently from another group. The use of analytics is key to success. OTT can facilitate the acquisition of data in near real time that allows marketers and content owners to generate the most value from existing and new customer bases.

Magine's global distribution network and commercial OTT experience are the key pillars of our managed streaming services for content providers that want to go direct to consumer and aggregators who want a secure and reliable platform for anywhere in the world. Our view is that great content coupled with deep analytics in a global framework helps bring new opportunities that would otherwise go unnoticed in the traditional media value chain. This has been validated by both Magine's direct to consumer offerings in Germany and Sweden as well as in our partner network that looks to monetise globally.

**How significant a barrier to achieving sufficient reach is the bandwidth challenge of delivering live and on-demand OTT video at consistent high-quality?**

It is of course crucial. Magine started with the distribution of live and linear channels via OTT so bandwidth optimisation is part of our DNA. No OTT service is better than its weakest link and for example, DSL households will of course have less possibility to have an acceptable multi screen environment.

Increasing deployment of fixed fibre networks and Mobile 4G is needed to meet the new demand from consumers.

The highest barriers exist in emerging markets (APAC, LATAM, Africa) due to lack of infrastructure and more importantly the costs of data. However, these parts of the world are on the cutting edge of mobile networks and usage and this creates new opportunities for OTT in these regions. Magine works with partners, local governments and ISPs to mitigate these issues to ensure that consumers have the best experience at the right price points.

**What do OTT providers need to put in place to ensure that they maximise the bandwidth available?**

No OTT service is better than its weakest link. Magine has focused on creating a reliable end-to-end service from signal ingestion to the home across many different consumer devices. We work very closely with ISPs, cloud providers, and other suppliers to ensure that bandwidth is available from the point we ingest content to the distribution to the home. For example, we are placing our own edge nodes in key telecommunications networks based on our customer behaviour to ensure that there is enough bandwidth at a lower cost.

**How important is consistent Quality of Experience and what do OTT operators need to do to ensure that it is achieved?**

Consistent QoE is critical to success. People are used to the traditional means of consumption – in cable, satellite and terrestrial distribution. OTT needs to strive for the same quality. Magine consistently optimises picture quality delivery to ensure customers are happy with their experience. In addition, to have a stable and reliable back-end platform that can handle the right number of concurrent viewers, the operator needs to add a set of features that can secure a great quality of experience including adaptive bitrates, advanced filtering and algorithms determining local client performance in real time to optimise both back-end and client performance.

**What are the most relevant opportunities to make money from OTT and what do operators need to do to maximise the available revenues?**

There is no single way to monetise content via OTT. Key here is providing an integrated experience to create upsell and new opportunities for monetisation. However, this is not enough. Global distribution with deep analytics creates new opportunities that would otherwise go unnoticed. New markets and segments continue to emerge and micro-targeting them will be the name of the game in the future.

**What is Magine putting in place to broaden the OTT opportunity and what are the minimum requirements for content rights holders?**

Market development is fast. Magine provides faster launch and implementation by offering TV Superhighway end-to-end solutions to reach new audiences. Direct to consumer offerings, in combination with offering distribution via aggregating distribution partners, creates flexible monetisation models without sacrificing the traditional model. In fact, we have incorporated the traditional model, albeit through a facilitation and bet that OTT will be the future model of consumption. It needs to be very simple for content owners so they have time to create amazing experiences. Self-service monetisation, access to analytics, and global distribution are key tenets of what Magine provides to simplify the work of the content industry.

*Magine will be at IBC on Stand 14.E10. **Click here** for more information.*

# The Power of IP Geolocation

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## Q&A: Charlie Johnson, Digital Element

Charlie Johnson, VP, UK & Ireland at Digital Element talks about the merits of IP geo-location for broadcasters.

### What is IP geo-location and what benefits, if any, could it bring to the broadcast industry?

IP geo-location data is a fundamental building block of the internet and allows online businesses to accurately identify user's location – without consumers being personally identifiable. This is useful to a number of online industries from advertising to commerce, and from financial services to criminal detection agencies such as INTERPOL.

Although IP geo-location has long been used within the broadcast industry, broadcasters have taken a rather half-hearted approach to including it as part of their content distribution strategies – despite the use of accurate data providing the first line of defence for content protection, and developing a robust solution for accessing data.

### What are the challenges of using IP geo-location to manage geographic content rights and how can these be overcome?

Accuracy is probably one of the biggest challenges facing broadcasters looking to employ geo-location technologies. With a plethora of low-cost solutions available, it is often easy to run with a supplier without confirmation the technology works or provides accurate data.

Other challenges in using IP geo-location include ensuring the data covers 100% of the world's IP addresses, and checking that proxy detection is in place to help businesses protect themselves against IP spoofing. Some databases carry zero proxy detection within certain countries, which leaves broadcasters open to being targeted by fraudsters masking their location.

There's a lot for broadcasters to contend with so an accurate IP data solution is vital. Digital Element maintains the world's most comprehensive and accurate geo and proxy databases, and is the only Media Rating Council (MRC) accredited service, assuring broadcasters they are working with a leading frontline provider that is trusted by global content leaders.

By working with a premium IP intelligence provider, broadcasters are safe in the knowledge that geographic rights loopholes can be efficiently monitored and minimised.

### How significant a challenge to rights-holders is IP spoofing and what can be done to combat it?

IP spoofing is a growing problem faced by all rights-holders. As content is becoming more accessible via the internet, so are the methods used by fraudsters to overcome rights legislation.

We have recently seen a greater focus on proxy detection from our clients, especially the major players. If you Google how to watch BBC iPlayer abroad, lots of services appear. However, when you then take a look at the forums you will find many irate users who have discovered these solutions do not work. This is where our accurate proxy detection is working.

We highly recommend a strong focus on the numerous types of proxies being used, such as VPN's, DNS, and Tor Exit Gateways, to allow broadcasters to create a solution that addresses their unique requirements rather than creating a "generic bucket" of proxies. Digital Element is the only provider that can help provide the detailed information needed to identify different proxy types and empower online businesses to tailor solutions to their own restriction needs.

### Which of the players in the distribution chain – studios, broadcasters, service providers – should have responsibility for content protection?

Accountability ultimately lies at the point of consumption, but we are seeing more and more of the chain taking on responsibility – and rightly so.

For example, we are seeing an increasing number of contract specifications on providers and the type of content protection they use. It's no longer deemed acceptable to simply rely on services provided by your content delivery network (CDN), for example, as accuracy and data coverage plays a key role. To maintain the value of content, everyone in the chain needs to take accountability – we can't just pass the buck on this!

More and more content creators are adding restrictions to targeting type and pushing this on to the end distributor. If we all work together to provide best of breed services, we can boost content protection success rates and help defend revenue streams to fund more quality content.

### What can Digital Element provide to help content rights-holders and what further technological advances can we expect in this area?

Digital Element's team of specialist data engineers and analysts are working hard to ensure we deliver the most robust and accurate solution to address the problem of IP masking, at a commercial scale.

By working in conjunction with our clients (including those in financial services and government bodies) we are able to achieve the most comprehensive view of the IP space and win the fight against fraud. We are working across the broadcast industry to understand its unique challenges and provide comprehensive targeting solutions.

We have been operating in the IP space for over 16 years and have a unique understanding of IPv4 and, importantly, IPv6 – enabling us to provide an in-depth level of detection. With today's proliferation of devices and content accessibility, the number of challenges for broadcasters has increased, but Digital Element's unique geo-perspective, down to zip +4 or postcode level, which works with device-derived data, has enabled much greater insight.

This area of content protection is ever evolving, but we are proud to say our solutions continue to develop and help protect data.

# Moving media

**The exponential growth in demand for video over mobile means 4G networks will eventually buckle. For 5G to provide the answer, does broadcast capability need to be built into the specification? Adrian Pennington reports.**

**With** video-over-mobile traffic forecast by almost everyone to multiply exponentially in the next five years and represent 70-80% of all traffic by 2021, something, somewhere has got to give. Mobile spectrum is only finite, after all.

"At a certain point the existing 4G LTE technology will not be sustainable to cope with the massive growth in video data," says Volker Held, head of innovation marketing at Nokia. "We need a new structure. This is the kernel of the 5G business case. Utilising it means we won't need to talk about bandwidth constraints for the foreseeable future."

The fifth generation mobile network promises much, but there is life yet in 4G, commonly known as 4G Long Term Evolution (LTE) despite considerable debate about which implementation of 4G matches the ITU standard. Candidates include 3GPP LTE which is often branded 4G-LTE, LTE Advanced (also known as 4G+) and WiMAX which is deployed by some carriers in the US.

"It is uncommon to see operators sell price plans that do not include 4G access if the plan has a data allowance," says Tony Maroulis, research manager, Ampere Analysis. "There was a period around 2010 when AT&T, T-Mobile USA and a few other operators advertised DC-HSPA+ as 4G, even though it only achieved data speeds of 42Mbps. 4G LTE is a more efficient technology and it generally starts at 50Mbps, with the potential to reach higher speeds when more spectrum bandwidth is added."

As an example, in France, Spain, Poland, Belgium, and Moldova, Orange's 4G coverage has surpassed 80% of the population. In the US, Verizon covers 313 million people with 4G LTE, and its VZW 4G LTE network now spans 2.5 million square miles. Some 60% of data consumption over those services is video of some kind including support for YouTube.

"LTE Broadcast – multicast – was seen as a solution to the impending video demand, but it never materialised as the demand shifted from linear TV to video on demand, which requires an individual, unicast, connection," says Maroulis.

4G networks support MBMS (Multimedia Broadcast Multicast Service), which enables broadcasts to multiple devices over cellular

**Ericsson believes that evolved 4G and 5G technologies will be crucial for the growth of mobile video.**

networks. MBMS allows a UDP style of broadcasting to mobile devices by reducing the need for a unicast connection for every device and reducing the bandwidth required for cellular data.

## Can 4G cope?

According to handset manufacturer Huawei, video now accounts for over 50% of total traffic on many 4G networks. Each subscriber consumes an average of more than 3GB of traffic per month, rising 60% a year. It argues that network capacities must be expanded to accommodate more video service connections.

"With sufficient bandwidth and improved video compression a lot of the obstacles faced by current video could be solved," says Maroulis.

Operators are optimising the 4G network using techniques such as ABR shaping and scheduled delivery. T-Mobile USA has launched a premium offer for its customers to receive unlimited video – provided that video is reduced to 480p and is from providers who agree to that limit – with apparent success.

"Adaptive streaming approaches, such as MPEG-DASH, also allow for a fine adaptation



## "With sufficient bandwidth and improved video compression a lot of the obstacles faced by current video could be solved/"

**Tony Maroulis, Ampere Analysis**

of the content delivery to the radio access conditions and the terminal capabilities," says Gilles Teniou, senior standardisation manager, content and TV service at Orange Labs. He thinks the HEVC codec is a clear answer to bandwidth-constrained environments, enabling the delivery of video services in HD.

Since March 2015, a feature called MooD (MBMS operations on Demand) was added to 4G, permitting the dynamic switching between unicast and broadcast. This makes it possible for an operator to identify where and when users are watching the same content at the same time. eMBMS is then seen as a way to control the dimensioning of the network by efficiently offloading the network when needed.

However, video delivery remains the single

biggest challenge facing mobile networks. EE forecast 80% of all traffic on the network will be video by 2020, and Matt Stagg, the operator's head of mobile video and content says that maintaining the quality of mobile video in the face of demand is not just a challenge for operators. "This needs to be looked at end-to-end and new compression technologies can reduce the bandwidth required to deliver HD video by more than half," he says.

In some places the bottleneck will be the backhaul from the mobile tower, notes Ampere's Maroulis. In others the bottleneck will be the radio access network (RAN), when too many devices try and connect to the same tower. "Sometimes the bottleneck may even be the device's modem – not all devices are capable of 150Mbps LTE-Advanced," he says.

The LTE-B Alliance, founded by Verizon, EE, Telstra and South Korea's KT in April, aims to push for all new smartphones to have the chipset and middleware capable of supporting the technology by the end of 2017.

Consumers are demanding higher quality, fewer delays and buffering screens, and video is not just limited to TV content and film, but a lot of social media is now video. Some 300 hours of video is uploaded to YouTube every

minute, half of which is viewed on mobile devices, reports Huawei. In addition, 75% of Facebook video browsing is performed on smartphones.

The cost of producing HD screens has decreased drastically too. According to statistics compiled by Huawei's mLAB, 77% of smartphones delivered in the first half of 2015 had a resolution of 720p or above. The standard 2K resolution on smartphones is 2560 x 1440, which is three times higher than 720p and Huawei expects that over 10% of new smartphones will be equipped with 2K-definition screens this year.

A premium 2K video experience will be one of the objectives of mobile networks and will become the mainstream requirement in 2018, according to Huawei. It even observes

EE believes 80% of all traffic on its network will be video by 2020.



that smartphones equipped with 4K and 8K screens will soon be available.

"HD video is imposing great challenges on the LTE networks, which cannot yet fulfil all the requirements of 1080p and 2K videos," it warns. "The capacity of a single LTE cell must be increased to accommodate more video connections, while data rates at the cell edge must be increased to meet the minimum rate requirements of video watching."

Its version of LTE is branded 4.5G and, according to Huawei, can deliver peak rates ten times that of a single 4G cell. In December 2015, TeliaSonera and Huawei deployed the first LTE-Advanced Pro (4.5G) network with an outdoor peak rate reaching 1Gbps, claimed as the world's fastest mobile network.
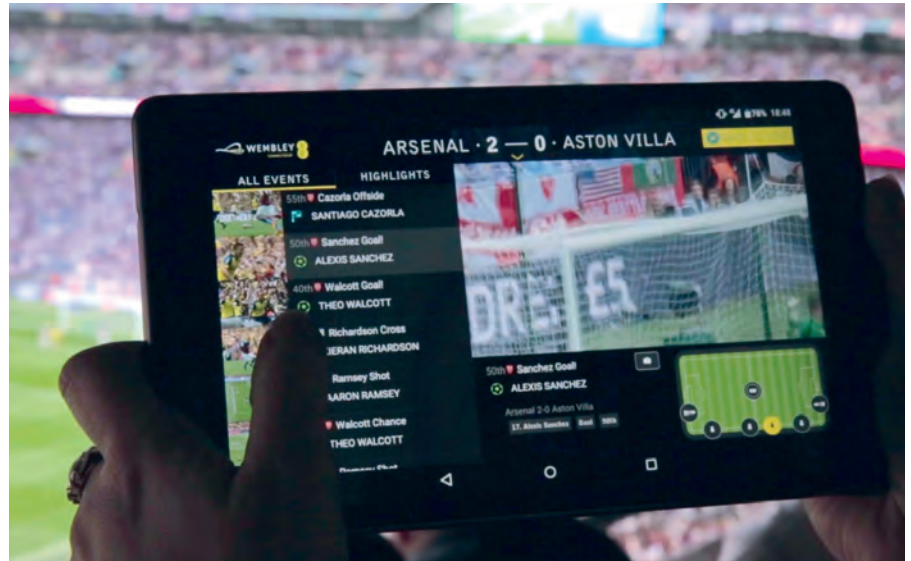
"Even if LTE provides significantly higher rates than the previous access technologies, the increasing demand for high quality content and the increasing number of simultaneous accesses to unicast requests – e.g. SVOD platforms – have to be considered," points out Orange's Teniou.

360° video services for virtual reality also promise a new immersive experience for which the required bit-rates are still to be identified (3GPP SA4, the codec group, is conducting a study on VR in mobile environments). In addition, says Teniou, a high number of simultaneous unicast requests impacts not only the available bandwidth on the access network, but also the load on the cache or edge servers. "Getting the right video content closer to the user may become challenging in such a case," he says. "A new compression format would help, for sure, under the assumption that it is optimised for the upcoming video services such as Ultra HD and VR."

TV and video services are high-capacity services that require fast, reliable data connections. As such, they define the essence of 5G networks, which are focused on providing high-bandwidth, reliable and consistent network services with Forward Error Correction (FEC) capabilities.

"Video consumption is expected to be a continued driver in network traffic for years to come and video use cases are on the roadmap for 5G development," says Adam Koeppe, VP of technology planning at Verizon.

The broad outlines for 5G have been agreed by organisations like EU 5G PPP (Public Private Partnership), initiated by the European Commission with manufacturers, telcos, service providers and researchers.

The specifications – some call them promises – include: regular mobile data speeds surpassing 1Gbps, peaks of 10Gbps (South Korea's SK claim to have lab tested 50Gbps – 1,000 times faster than 4G), and a latency below 1 millisecond.

"While 4G was all about delivering data at high speeds, 5G will enable real-time, live video delivery," says Arik Gaisler, senior director, product management, infrastructure, Kaltura. "This opens up lots of possibilities for real-time communication. We are starting to see live streaming gaining huge traction, with Facebook Live, YouTube Live, Snapchat, and real-time gaming platforms such as Twitch all investing significant resources in live video delivery. 360° video and VR – both for VOD and live – will also benefit from 5G, because VR relies on real-time data tracking and communication between the consumer and the service."

However, 5G is not seen as a direct replacement for existing TV platforms and its use case goes far beyond media. "For 5G to support broadcast it will have to have an efficient broadcast mode which goes beyond the current broadcast features in 4G," says Peter Siebert, executive director of the DVB. "5G will have to support broadcast features such as subtitles and the operator will have to fulfil coverage and quality of service requirements. The necessary tools to provide this have to be included in the 'still to be developed' 5G specification."

Siebert believes that 5G sits at the peak of the Gartner's Hype Cycle. "Even before the technology has been defined, various operators have already promised field trials and equipment manufacturers have given us the impression that 5G technology is just around the corner," he says. "A network would have to be very dense with ample base stations, which need to be connected with high speed links to the network. An important cost factor will be the higher frequencies to be used that will result in a more expensive network and consumer equipment. All in all, building up a 5G network according to the current promises will be extremely expensive for the network operator." The most efficient model, he suggests, is a 'high tower – high power' approach on which current broadcast networks are built: "It would make a lot of sense to integrate this technology in the upcoming 5G specification," he says.

## The hybrid proposition

Ericsson believes it critical for service providers to develop a hybrid approach using the technology that makes the most sense for the situation and type of viewing behaviour.

"We already know that in certain, rural parts of the world a mobile network can compete with fibre and meet the performance of even a fixed connection," says Ericsson's Gordon Castle, head of strategy area mediacom. "Fixed connections will never reach the majority of the world's population so already we're seeing that 4G LTE can be cost effective compared to installed fibre."

# Q&A: Ferdinand Maier, ruwido

ruwido CEO Ferdinand Maier talks about haptic feedback, voice interaction and the central importance of design in TV control devices.

*What key features do consumers value above others in the device they use to control and input choices for the TV?*

Findings of our applied scientific research show that, given the fact that the TV screen in the living room is getting larger, but remains three to five meters away from the user, eyes-free interaction such as haptic feedback are welcomed. People also value reliability, permanent availability and ease of use as key features for convenient TV navigation.

When it comes to the question of which device to use for TV navigation our research showed that even among 19-25 year olds the remote control is rated as being more "natural" to use for navigation than using an app on a tablet. Modern and well-designed multimodal input devices are also rated higher in user experience than current tablet apps, including control features. Our findings have also shown that input devices have to keep up with the evolving TV landscape. User experience was rated higher for tablets and tablets apps compared to standard remote controls that aren't carefully structured and designed.

*How important do you think haptic feedback will be to remote controls and other devices in the coming years, and why?*

Interaction mechanisms of the future need to optimally support user behaviour. Consequently, haptic feedback is and will remain a vital input technology either for new forms of continuous input or to make touch a modality that can be used eyes-free. Haptic feedback enables users to stay engaged with the action on screen while remaining in control of the viewing experience.

*How significant do you think voice will be relative to other input methods for remote controls?*

We do expect to see voice playing a more prominent role in the user experience. Results of our scientific research as well as the emergence of voice-activated assistants, such as Siri, point to the fact that voice in TV will be used predominantly for search.

In addition to search, voice will be incorporated into user identification, user dependent voice recognition, personalization and recommendation. Biometric voice recognition will improve over time and we'll start using voice where other input methods become cumbersome or tedious.

At ruwido we expect about 30 per cent of IPTV remote controls to include some sort of voice input by 2018.

*Are voice and touch complementary or substitute input methods?*

Voice is complementary as an input mechanism. It is fantastic for searching for specific content or for making interaction with TV a more personal experience but not for navigation. Multimodal input devices show the potential of voice but always in combination with an analogue interaction mechanism.

Touch interaction, like developed for smart devices, has got its limitation for precise and eyes-free input on a screen 3-5 meters away from the user. But the combination of touch with special haptic feedback can indeed become a substitute input method.

We will see new combinations of different modalities that will make interaction with TV even more enjoyable and natural than in the past. The key to success lies in selecting the right type of modality to support standard tasks.

*To what extent can the principle of simple, clear design of remote controls ultimately be reconciled with the growing complexity of navigating through layers of TV content including linear, catch-up, recorded content, VoD, SVoD, OTT apps and so on?*

A straightforward design set represents a clear interaction mechanism, giving the user the feeling of always being in control of content. As long as the interaction mechanism is simple in its structure and supports the user to discover and control available content, without the need for complicated control sequences, we can have hundreds of apps and thousands of channels to navigate within.

And this is exactly what we are excited about. At ruwido we are constantly working on evaluating different interaction mechanisms that can be applied to large amounts of diverse content and elements in the user interface always aiming to support what we call: "the synchronization of mind and sense".

*What is ruwido planning to highlight at this year's IBC and why?*

We will demonstrate how to take up and support the kernel behavior of the user and how the human computer interaction can be improved, towards a more natural experience.

At the show, we will unveil a way to transfer the learned usage of smart devices into the living room on the TV. The best elements of touch interaction are combined with haptic feedback enabling eyes-free interaction; synchronized with a corresponding user interface.

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

Ericsson argues that for highly popular short/mid-tail content, broadcast technology continues to make the most sense as its very cost effective. For VOD and niche linear long-tail TV content, service providers can use broadband unicast to improve efficiency.

"Many devices are already connected to several access technologies, such as terrestrial/satellite antennas and fixed or mobile broadband," Castle says. "By integrating content from these different inputs into one user interface, an improved user experience will be achieved and the content delivery costs will be reduced. LTE Broadcast will play an increasingly critical role in the future distribution of video to consumers, given that the majority of terrestrial TV is delivered via broadcasting, whereas mobile video is delivered through cellular networks using unicast through a separate video stream. Mobile networks can also provide broadcast delivery with the mobile network dynamically switching between unicast and broadcast,

5G use cases. Verizon's Koeppe says: "While it is early in the development process, we expect there'll be a need for additional hardware, cell sites, and other infrastructure. Part of the work at our innovation centres and with our partners will be creating much of this equipment – for example, developing even smaller cells with greater network efficiencies.

The availability of spectrum is key to the success and advancement of 5G technology. We are very pleased with the actions the FCC is taking to ensure that 5G moves forward and fully expect 5G to be an evolution of our 4G LTE network."

## 5G trials

A clutch of European telcos, including Deutsche Telekom, Nokia, Telefonica and Vodafone, say they will begin conducting large-scale tests by 2018, with a launch in at least one city in each EU country by 2020.

Some, like Kaltura's Gaisler, believe 5G networks can ultimately replace legacy technologies such as WiMAX, DTT and legacy mobile technologies for broadcasting.

"And with fast, reliable, two-way communications comes the promise of further enhancement of the video streams: time-shifted TV services over 5G," he says.

Ampere's analysis is that while 5G could be used as a terrestrial substitute, it would likely require upgraded terminals – including TVs and set-top boxes.

"Additionally, if 5G was used to replace digital-terrestrial TV, then it would be competing with other data connections for bandwidth, unless it had a dedicated bandwidth assignment, which would make it not too different from the current set up," notes Maroulis.

EE's Stagg strikes a note of caution amid all the hype. "As a service [5G] needs to be looked at end-to-end to ensure an optimal experience and we cannot be complacent and file the requirement under '5G has lots of bandwidth to support 8K resolution'," he says. "Another aspect we are addressing within the industry is ensuring that all video is not treated the same and labelled OTT content. Through our research and analytics we now know that live sport and popular events put completely different demands on the network and must be addressed with a one-to-many technology such as broadcast."

BT and EE are also keen to look at convergence in 5G. To drive this forward, they are part of the consortium supporting the 5GPPP working group (5G-Xcast).

This media delivery solution will have built-in unicast/multicast/broadcast and caching capabilities, and it will enable media services to use any mix of the available mobile, fixed and broadcast networks, explains Stagg.

"The project will take a holistic approach in order to minimise the media delivery differences between the considered types of networks," he says. "It will be end-to-end and cover everything from the physical layer and the radio interface to the transport and application layers including protocols and APIs. The project will contribute to the definition of 5G critical technologies and its standardisation in 3GPP with the development of 5G broadcast. This is a very important topic that has gathered very little, if any, attention so far, and is key to achieving the ubiquity, scalability and cost-efficiency required by the core KPIs for sustainable immersive large scale video." ●

> "Live sport and popular events put completely different demands on the network and must be addressed with a one-to-many technology such as broadcast."
>
> **Matt Stagg, EE**

thereby optimising resource utilisation."

As user behaviour evolves and technology advances, Ericsson expects to see a crossover point where broadband will prove to be a superior form of delivery compared to fixed-to-mobile and where mobile will have a greater impact in terms of reaching television.

It gives the example of in-home solutions that require high spectrum efficiency. "Globally, fixed broadband deployments lack the quality and capacity to provide a high level TV service and the majority of global households are unable to receive a fixed broadband connection," says Castle. "New mobile technologies with higher spectral efficiency, directional antennas and portable home gateways optimised for video distribution, will reduce mobile broadband delivery costs. Evolved 4G and 5G technologies will play a crucial growth role in enabling mobile video to be a cost competitive alternative to fixed broadband and grow at a much faster rate than any other network traffic."

In the US Verizon is trialling fixed wireless

BT and Nokia are to collaborate on 5G use cases and trials, and to jointly develop 5G standards and equipment. The work will underpin the forthcoming rollout of LTE-Advanced Pro and 5G services by EE. Nokia is also already conducting trials of its latest 5G-ready radio equipment at BT Labs in Suffolk. Forthcoming proof-of-concepts will focus on technology enablers for 5G, including millimeter wave radio and convergence, as well as commercial applications of ultrafast mobile broadband, mission-critical services and the Internet of Things.

Ericsson says it has trials with 20 operators in the works and will collaborate with Cisco and Intel to develop the industry's first 5G router. "This will be a critical addition, particularly when you consider the numbers of viewers streaming high quality video content on a daily basis," says Castle. By developing the router, Ericsson wants to enable ultra-high speed wireless bandwidth and facilitate the growth of new internet-connected devices.

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**Does TV need to deliver targeted advertising to survive, or does its ability to deliver reach protect it from the threat of internet video? Stuart Thomson reports.**

**The** promise of targeted advertising has been held up as a way to safeguard the future of free TV – and deliver added value for pay TV – for a long time now. In Europe, the UK has been the pioneer, with Sky and Channel 4 taking the lead in investing in and advocating the benefits of targeting.

Sky has had the advantage of being both a pay TV platform provider with a direct subscriber relationship with viewers and a content provider with advertising inventory in its own right. The company developed its AdSmart platform as a client-side way of delivering targeting, initially for its own channels. AdSmart had run over 4,000 campaigns by February this year, just over two years after it launched, according to figures provided by media agency Group M.

About 2% of potential inventory was taken up by AdSmart campaigns across about 70 channels, which is expected to rise to about 100 by the end of this year. Sky is likely to roll the platform out in Germany in the next two years or so, while Sky Italia is expected to launch targeted advertising a bit sooner, possibly next year or in 2017.

For broadcasters, however, targeting of linear TV ads remains challenging for a number of reasons including the ability to deliver campaigns over multiple distribution platforms to achieve sufficient scale to make the campaign worthwhile.

In the US, the practice of TV networks giving cable distribution platforms the right to sell a limited number of minutes per hour of advertising inventory by ad replacement has created a significant business that can serve as the basis for delivering more sophisticated forms of targeted advertising. Commercial arrangements between platform operators and

broadcasters are already in place.

In Europe, it has proved somewhat more challenging to get operator-based targeting off the ground because broadcasters, who hold the rights to all their own advertising inventory, have to see an advantage in coming to terms with platform operators for it to work.

## Large footprint

For Tim Sewell, CEO of advertising replacement specialist Yospace, the launch of targeting by broadcasters is basically dependent on different elements coming together such as the ability of broadcasters to provide a digital footprint that justifies the investment and media agencies taking an active interest.

Yospace has worked closely with Channel 4 and Scottish broadcaster STV in delivering a platform that enables them to offer targeted advertising. Sewell says that the experience of the Channel 4 in bringing targeted advertising to its digital video-on-demand platform has enabled it to "push targeting to live" as well.

"The key thing about the ability to improve targeting to the end user is that it unlocks inventory that previously couldn't be monetised," says Sewell.

Targeting has often been seen as all about enabling broadcasters to offer advertisers the ability to reach desired socio-demographic groups, and ultimately to deliver truly personalised advertising based on individual tastes and preferences. But more prosaically, it can also enable them to target new advertisers that previously would not have considered TV as a suitable medium such as local businesses with a limited geographical market. The ability to offer highly specific postcode-based advertising enables them also to resell the same inventory to multiple advertisers.

While video-on-demand has been a testing ground for ad replacement, the ability to seamlessly stitch ads into linear streams is potentially far more lucrative. "The view-through rates on linear streams are substantially higher than on VOD," says Sewell, citing a view-through rate – essentially a measure of post-impression response to ads seen – of 97-98% in the case of linear replacement ads against 75-85% for mid-roll VOD ads.

"There are more and more broadcasters doing targeting across linear TV. The technology has matured and it is a viable thing to invest in. It is potentially a differentiator between one

broadcaster and another. While advertisers don't necessarily care about how an audience is being reached, they care about how they can segment their audience," says Sewell, who adds that broadcasters are using the technology both to sell unused inventory and by charging more to reach desired demographic groups.

The key to unlocking the true potential of targeted advertising, however, is data. "Broadcasters with data available can increase the value of their inventory and target more



## "The challenge for sellers is that they are now losing linear audience share to YouTube and Facebook."

**Alex Merwin, SpotX**

efficiently to make the best use of that inventory. Their audience goes further. Targeting strengthens the argument for increased CPMs [cost per thousand impressions] and it also extends the number of campaigns broadcasters can deliver to a fixed number of viewers, as opposed to delivering a million eyeballs for one campaign," says Sewell.

Scottish commercial broadcaster STV has been at the forefront of adopting the technology. Rémi Brunier, product owner for STV Player for both linear and VOD at the broadcaster, says that STV now has about two million registered users, out of a total population in its footprint of five million people. As with Channel 4, it has obliged people to register in order to see premium and on-demand content they would not otherwise have access to. Mandatory fields included name, date of birth and first line of address, with a few more fields added to enable more granular targeting.

STV introduced live ad targeting on STV Player after introducing the technology for its VOD streams. The technology is available on iOS and Android devices and the web. The broadcaster offers targeting based on micro-regions, enabling it to offer advertising to local businesses, and can also segment the audience on the basis of age group and gender. Brunier says that 80% of inventory is "targetable", although the proportion that is actually 'targeted' in practice is considerably less.

For local businesses and niche brands, targeting on a geographical or demographic basis makes sense. For larger brands,

says Brunier, it may make sense to run split campaigns, with creative specially commissioned to target specific segments of the audience with messaging to complement a broader national campaign.

Brunier says that STV is also trialling programmatic – or automated – selling of inventory alongside targeted advertising but that this is at an early stage. For broadcasters, the jury still appears to be out on programmatic – and there remains a question over whether direct sales deliver more value.

For STV, the main gaps in its targetable inventory currently are those on streams delivered to TV platforms including free-to-air platforms Freeview, Freesat and YouView. Brunier says that STV is advancing towards universal targeting. The company plans to test the technology on Freesat next month and plans to develop the service on YouView following its imminent transition from Flash to HTML5. "The TV is definitely of interest," says Brunier. "It also offers a slightly different demographic [meaning] we can cover all bases."

Yospace's Sewell also says that his company is working with a number of player vendors to ensure that HTML5 implementations will support dynamic ad insertion, while MPEG DASH will support insertion later this year.

## Demand-side push

Alex Merwin, vice-president, global programmatic demand at advertising technology provider SpotX, meanwhile contends that requests for targeting – like demand for programmatic buying of spots – is coming from the demand side rather than the suppliers of advertising inventory.

"The challenge for sellers is that the control [of the inventory] they had helped them keep control of their rate-card, but they are now losing linear audience share to YouTube and Facebook. The trick for broadcasters is to maintain the rate-card and the value they bring

to the content in terms of audience and the value of their programming," he says. "There are now other content creators – MCNs and so on – that are starting to compete, along with SVOD providers and that is creating pressure."

According to Merwin, while broadcasters have the high-quality content that advertisers want to associate their products with, they are "not coming to the table with a great targeting story to justify the rates they charge".

He says that some broadcasters are now making some of their inventory available for programmatic buying via private exchanges. Buyers use their own data sets or buy in third-party data to enable them to target their ads. Large corporations have gathered huge amounts of data about consumers as part of their product development activity that they can now apply to advertising "that drives results at lower prices", says Merwin.

While media owners are under pressure, delivery of meaningful targeting requires content to be delivered over addressable IP networks. In Europe, says Merwin, where large numbers of people still consume TV over free over-the-air broadcast networks that are not addressable, "TV is safe for now" from competition. Nevertheless, he says, even mainstream over-the-air TV will inevitably come under more pressure as younger audiences drift towards YouTube. In addition, the global nature of the internet and IP provides a global platform for advertisers that broadcast TV can't match – so there is likely to be pressure in the longer term for TV to give up its legacy – scattered, localised – broadcast platforms and move everything to IP.

"In TV, every market does everything differently – there is no single protocol. Digital has a big advantage over TV because it is global. Whether in the future the market tries to create a global linear TV solution or put linear content onto the existing global platform is an open question, but I would bet on the latter," he says.

Measuring the responsiveness of consumers to TV advertising is a key part of the value of targeting, but it is also challenging. TV, unlike the web, does not provide an instant feedback mechanism in the form of click-throughs.

For Kevin O'Reilly, chief technology officer of advertising data analysis specialist TVSquared, the TV business remains fragmented in terms of platforms and technology. "Putting together a measurement platform that looks like the web is very far away," he says. "People don't interact with the TV. They interact via tablets and smartphones."

TVSquared provides a platform that is designed to help agencies and advertisers measure the responsiveness of TV ads by analysing data to assess the way consumers use second-screen devices to engage with brands.

While only a small amount of TV content is consumed via video-on-demand and live unicast streams, such streams are potentially valuable because it is possible to track who an advert was served to at what time. TVSquared attempts to take this further by figuring out whether consumers respond to such ads by interacting via second screen devices. When TV spots appear, it is possible to judge which of them are driving the best response rates.

## Strength in reach

Not everyone believes that broadcast's days are numbered unless they can deliver addressability across their inventory immediately.

Matthew Huntington, chief technology officer at UK free-to-view satellite platform Freesat, argues that TV has "seen the threat

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## The challenge of delivering scale

One of the key challenges faced by broadcasters in delivering on the promise of targeted advertising is that the fragmented and localised systems in place lack the global scale of internet-delivered video platforms.

Matthew Huntington, chief technology officer of UK free-to-view satellite platform Freesat, says that "there is a real market for addressable advertising". However, a lot of work needs to be done to enable targeted advertising with sufficient scale that makes economic sense.

Huntington makes the point that Sky AdSmart – the major platform enabling



**Platforms such as Freesat could be part of a wider targeted-advertising ecosystem.**

addressable advertising in the UK today – is based on technology that was defined almost 10 years ago, and a lot has changed. AdSmart works without boxes being connected to the internet with ads being synchronised from the internal hard disk. Now, delivering replacement ads on a 'just-in-time' basis from the web is more practical and can help unlock additional value.

Huntington is sceptical that broadcasters in the UK and elsewhere in Europe will be willing to give up inventory to platform operators on the model that prevails in the US. He suggest that something more akin to a 'federated' model could emerge, where equipment manufacturers provide technology that broadcasters can then use to make their own ad inventory addressable.

"If you look at the free-to-air market in the UK it is dominated by smart TVs. Connection rates are impressive and in a few years you will have a very high level of connectivity," says Huntington. In addition, the prevalence of updateable Freeview Play, Freesat Freetime and YouView boxes could help deliver the scale necessary to launch aunified targeted advertising platform.

TV manufacturers looking to join the conversation will need a Europe-wide approach. Huntington believes that this could happen when Sky launches AdSmart in Germany and Italy, which would boost interest and concentrate minds. Ahead of targeting being widely deployed, says Huntington, broadcasters would do well to focus on other innovations that can add value to advertising, such as mearuing the viewing of ads on "a census basis rather than a panel basis" by using connected devices to measure what ads have been viewed and for how long. Another possibility is using the ability to measure viewing on connected TV platforms to enable targeting of ads on non-TV digital platforms, something he describes as 're-targeting'. "A lot of digital advertising is wasted because it only works if a brand impression ad is delivered to the viewer first," he says. "If you know which consumers see which TV ad, you can target a digital ad and that combination makes digital advertising a lot more effective."

It would be important to enable this kind of targeting while at the same time avoiding the sharing of personal data, says Huntington. At the same time, consumers could be given incentives to opt in, he suggests.

from the internet come and go" and contends that budgets that previously migrated to digital platforms are in many cases returning to TV.

"Watching TV is done in a different mental state than surfing the web. Part of the value is its ability to deliver a message when you are more open to brand messaging. There is not an imperative to improve what it does, although there is an argument that unless TV advertising is fully measured money will disappear," says Huntington. "However, the problems with measurement on the web are far greater than for BARB in the UK, for example, and in some ways TV is a better position."

Huntington believes that the real threat to free TV is not the web, but pay TV, which has put in place platforms that have the capability to deliver addressable advertising. He says that free TV broadcasters will need to deliver something similar or better, given their much greater dependency on advertising as their chief source of income.

None of this is to say that targeting is seen either as an absolute immediate imperative or as a panacea in the face of a perceived online onslaught on TV advertising budgets from the web. Many observers believe that the ability of TV to deliver a common brand message to a very large audience remains one of the medium's strengths.

Thomas Bremond, commercial director, northern Europe, at advertising technology company FreeWheel, believes that reach remains a strong selling point for TV.

"Broadcasters have a pretty powerful message for advertisers in terms of offering reach," he says.

Bremond believes that targeting will have an appeal for certain types of channels, such as smaller niche services whose audiences does not appear on BARB ratings or their equivalent and whose inventory is typically packaged up with that of other channels and possibly undervalued. However, the key remains measurability and data, as well as targeting in a way that advertisers can make sense of.

"Some operators want to offer more than 50 attributes. No one is going to target to that many because you run risk of targeting no one. It makes sense to focus on two or three – age gender, geo-location, kids, no kids, degree of affluence – those kind of things. You don't want to get down to things that are too uncommon," says Bremond. "TV is not direct response marketing. Advertisers are looking for brand affinity rather than specific product targeting."

For Bremond, advertisers already have tried-and-trusted ways of measuring responsiveness of audiences to TV spots. The key to realising the value of targeting, however, is in using it to unlock hitherto untapped markets.

"People who have always advertised on TV will continue to do that. The interesting piece is identifying the brands that could go to other channels that are currently given away as part of the brand campaign because they are not measured by BARB. It could make sense for people who have never advertised on TV, as they now have impression-based advertising measurement and can target their audience a bit better," he says.

Further down the line, says Bremond, broadcasters will see a lot of value in integrating linear and non-linear platforms to be able to offer integrated campaigns targeting consumers across multiple devices for both linear TV and VOD. FreeWheel is currently working on a platform that can deliver this, which Bremond says is being beta-tested with a number of broadcasters.

## No crisis

Adam Smith, futures director at WPP-owned global media agency Group M, also strongly believes that TV still provides a unique selling

cites the statistic that 70% of Sky AsSmart users were new to TV advertising as of February this year – and adds that this represents a decline on the previous year's figure of 80%, probably because earlier users were satisfied with the product and came back for more.

The overall numbers remain relatively small, however. Smith cites eMarketer research that shows worldwide addressable TV advertising totaling US$400 million (€350 million) in value in 2015, a figure he describes as "plausible". The value of UK addressable TV advertising was estimated at US$50 million last year. Smith says that global addressable TV ads could be worth US$2 billion by the end of next year – still only 1% of total TV investment.

"Our first priority has to be to get TV and gaming content measured across various platforms," says Smith. "These platforms are not substitutes for one another. Reach has a time dimension as well just being about the numbers. Marketing comes with time constraint attached. You need to achieve your reach within a given month, for example."

Online video comes with other problems attached. While marketers often want to achieve an immediate response to a campaign, this can be difficult to achieve in a digital-only domain. In the absence of direct response to ads, advertisers need to be able to measure both reach and the frequency with which videos are



"Broadcasters have a pretty powerful message for advertisers in terms of offering reach."

**Thomas Bremond, FreeWheel**

point, which online platforms simply can't match. "What advertisers buy is reach," he says, adding that recent predictions of TV's imminet decline are misplaced. "TV isn't in crisis because it has not lost much reach."

While a significant number of younger people may not watch TV – or watch a lot less than previously – TV as a medium has lost "only about three points of reach", according to Smith. TV, he says, is not in the same spiral of decline as newspapers.

Smith agrees that addressability can help TV by extending the market for TV advertising. Local ad replacement can open up the market to local restaurants and other businesses. He

consumed. Large amounts of online video are being consumed by a small proportion of the overall population, meaning that advertising around that could create a problem of ads being seen too frequently by a small number of people while others never see them at all.

Nevertheless, Smith concedes that TV will need to embrace targeting, because it remains quite likely that TV's lost audiences at the younger end of the spectrum will remain lost as those people grow into adulthood.

"'Addressable advertising will maximise TV's reach in the fragmented future, because it replaces broad demographics with real individuals aggregated at scale," he says. ●

# Content Innovation Awards 2016:
## The preview

**Following last year's successful event, the 2016 Content Innovation Awards returns to Cannes' Carlton Hotel in October.**

**Digital** TV Europe and its sister publication TBI have now unveiled the shortlist for this year's Content Innovation Awards, with entries from a wide range of top-tier pay TV operators, content companies and technology providers competing for the top honours across 18 awards categories.

Following the success of the inaugural Content Innovation Awards in 2015, this year's event, which Digital TV Europe is hosting in partnership with TBI, will be even bigger and better, celebrating the most impressive innovations in TV content creation, distribution and technology over the past year.

The awards ceremony will take place on Sunday October 16, 2016 at the Carlton Hotel in Cannes.

Launched in 2015, the Content Innovation Awards is the premier event celebrating innovation in content, distribution and delivery and the wide-ranging achievements of the companies and individuals who bring video content to the world.

The awards recognise innovation from content providers, distributors and technology companies that are helping transform today's television industry.

New categories this year include Advanced TV Innovation of the Year, Most Innovative Digital Project, OTT TV Initiative of the Year, UHD Initiative of the Year, the Millennials Award and Virtual Reality Initiative of the Year. Other categories include Best Content Distributor, Best New Channel Launch, Best Series Launch of the Year, Breakout International Drama, Channel of the Year, the Content Discovery Technology Award, Industry Innovator of the Year, Pay TV Initiative of the Year, the Second Screen Experience Technology Award, Social TV Innovation fo the Year, and the Multiscreen TV Award.

This year's shortlist comprises a total of almost 90 top-flight companies spanning content creation, distribution and technology.

The list features pay TV operators including Liberty Global, Sky, Vodafone, Orange and Modern Times Group, and broadcasters and content providers including Euronews, Channel 4, AMC, Scripps Networks Interactive, Fox, Red Bull Media House and NBCUniversal, as well as a host of leading OTT TV service providers, top-flight production companies and industry-leading technology providers. For the complete shortlist, visit www.contentinnovationawards.com/2016-shortlist.

The winners will be decided by a panel of 14 expert judges that includes media investor and entrepreneur Bruce Tuchman, Arris' Cornel Ciocirlan, Cisco CTO Ken Morse, Endemol Shine executive Mark Lawrence, RTÉ CTO Richard Waghorn, TalkTalk head of pay TV content Will Ennett, Sonar Entertainment's David Ellender and StoryTechLife's Claire Tavernier, among others.

The 2015 inaugural event welcomed over 120 guests with BT, Discovery Networks International, Eurosport and Videocon d2h among the big winners.

The highlight of this year's Awards will be a glittering awards gala dinner at the Carlton Hotel where over 150 of the industry's most senior executives will attend the reception, awards dinner and ceremony and network at the after-party. The ceremony will take place in the hotel's Grand Salon from 20:00-24:00, with entertainment provided by award-winning singer-pianist Liane Carroll.

For more information about the Content Innovation Awards, visit www.contentinnovationawards.com. ●

# IBC 2016: the preview

This year's IBC exhibition will take place at Amsterdam's RAI from September 9-13. Digital TV Europe takes a look at some this year's highlight technologies.

## ABOX42
**STAND 14.J20**

**WHAT'S NEW?**
M30

**WHAT DOES IT DO?**
ABOX42 will use IBC to unveil its new Smart STB platform M30 with a built-in Smart Home Gateway. The box contains a radio package to communicate with the latest standards required for connecting sensors in the home. The M30 communication interfaces supports Thread, RF4CE and WiFi extensions. In addition it supports the latest ZigBee 3.0 standard. The device can connect to in home sensors like door/window open detection, smoke, fire and gas-sensors, water leak detectors, motion sensors and light bulbs. Via WiFi the M30 can control sensors like cameras with optional microphone and speaker functionality. The M30 provides advanced built-in security and encrypted data transmission to the ABOX42 cloud services. Alongside the M30 Smart STB, ABOX42 offers a range of SaaS/cloud IoT backend services to communicate with the gateway, to collect sensor data, to aggregate and store the sensor data. On top of these SaaS services, a range of Smart Home Solutions can be implemented. The M30-Series Smart STB is based on Broadcom's latest HD high performance 5,000 DMIPS ARM based system-on-a-chip BCM7250. The M30 platform can decode HEVC with up to 60 frames per second. The box supports an HTML5 browser-based user interface and application environments including HbbTV. All major streaming formats for OTT, IPTV and DVB are supported. On the DRM/Software-CAS side the M30 is ready for Verimatrix VCAS, Marlin, Playready, SecureMedia and WideVine. The M30 SmartSDK is upgraded to support HEVC on Full-HD in all combinations and with all streaming formats like HLS and DVB-T2, according to ABOX42. An OTT/IPTV version is available for pure IP operators. M30 Hybrid-DVB versions are available for DVB-C, DVB-T/T2 and DVB-S/S2 networks to support traditional Pay-TV environments in combination with hybrid-DVB and OTT/IPTV.

**CONTACT** www.abox42.com

## Access
**STAND 14.D14**

**WHAT'S NEW?**
Access Twine

**WHAT DOES IT DO?**
Access will use IBC to demonstrate its extended Access Twine multiscreen media sharing and management platform. The company says that the product is designed to ease the development and operation of multiscreen services. It provides support for secure media sharing in order to deliver assets to authorised consumers.

The platform has been extended to adapt to increased time-to-market pressures, and to offer compliance with the latest media sharing and security standards. Client SDKs are available for a wide range of devices such as set-top boxes, TVs, iOS, Android, Windows mobile devices as well as Mac OSX and Windows computers. This enables operators to utilise the same technology for all devices, improving reach at a fraction of the cost. To help operators better understand subscribers, Access Twine provides data generation and aggregation over its cloud-based service components together, which can be integrated with existing tools, such as the Verimatrix Verspective operator analytics solution, to deliver user-friendly analytics. This development is part of the extended ACCESS and Verimatrix partnership, which prepares the ground for a fast and easy integration of the Verimatrix ViewRight technology as a CA/DRM complementary and separate add-on to Access Twine, in order to secure media sharing within the entitled domain. This ensures the same level of protection for all media sources, including premium assets and the consumer's private library, as well as local and remote, free or premium, subscribed or owned content, according to Access.

**CONTACT**
www.access-company.com

## Agama
**STAND 5.A73**

**WHAT'S NEW?**
New video service assurance solution

**WHAT DOES IT DO?**
Agama Technologies will use IBC to launch the new version, 5.1, of its video service assurance solution. Agama will showcase its solution for monitoring, assurance and analytics. Highlights include enhanced incident and problem management for cable. Fault detection and visualisation tools pinpoint where in the RF-access network problems have occurred and what the impact is. Another feature is support for Ultra HD/4K service monitoring, with analysis of HEVC-encoded content so that video operators' UHD video services meet expectations, according to Agama. The third new feature introduced by Agama at the show is an extended solution for OTT service assurance. The Agama Analyzer and Analyzer OTT enable proactive monitoring in all stages of OTT playout and delivery - from ingest to edge cache and from manifest to video content - with support for HLS, MPEG-DASH, Smooth Streaming and now HDS. Combined with Agama monitoring in subscriber devices, such as tablets and smart TVs, the solution is designed to give insight and transparency to the quality for each customer and stream, according to the company.

**CONTACT**
www.agama.tv

## ATX
### STAND 14.G16

### WHAT'S NEW?
VidiPlay; DigiVu II; VersAtivePro; UCrypt

### WHAT DO THEY DO?
ATX is highlighting four product lines – end-to-end IPTV solutions, encoding with reliable video delivery over the internet, licence-free transcoding, and an IP to PAL mini headend. VidiPlay middleware is a part of ATX's end-to-end IPTV solution. The system can include IP set-back boxes and smart TV clients to deliver IP video to TVs as well as clients for PCs, tablets and mobiles. VidiPlay also manages client authentication and access control, provides UI customisation and supports advanced features such as an interactive programme guide, VOD, nPVR, digital signage and more. DigiVu II multichannel encoders are designed for encoding locally generated content and studio feeds as well as for transporting video feeds between locations. Video inputs include HD/SD-SDI, CVBS, HDMI, and Component. Outputs include MPEG-2/H.264, SD/HD, and multiple output profile encoding. They feature optional integrated Zixi Feeder or VideoFlow DVP technologies for reliable video delivery over the internet.

ATX's VersAtivePro licence-free transcoding platform is designed to be a budget-friendly solution in the professional quality transcoder market, according to the company. The UCrypt IP to PAL (IP2PAL) mini-headend is designed for conversion of IP video streams to PAL in a space-efficient and cost-effective manner. This device can ingest up to 60 MPEG-2/H.264, HD/SD video streams and convert them to PAL.

**CONTACT** www.atxnetworks.com

## Broadpeak
### STAND 5.B72

### WHAT'S NEW?
BkS350 Origin Packager V2.0

### WHAT DO THEY DO?
Broadpeak will highlight multiscreen video delivery on managed networks and the open internet through on-the-fly packaging and cache management. New at the show is a TS input for the BkS350 Origin Packager, allowing use of a single packaging process in the content delivery workflow, according to the company. Broadpeak will show nanoCDN Multiscreen for satellite, allowing satellite operators to deliver live and on-demand services across tablets, smartphones, connect TVs, and other OTT devices by leveraging a STB and Broadpeak's nanoCDN technology. Also on show is the Broadcache box, a local cache solution for content providers to reduce CDN costs. The Broadcache box is a local cache closer to end-users. For OTT TV providers, Broadpeak will showcase umbrellaCDN CDN selection, enabling content providers to choose the most-adapted CDN for delivering video content. umbrellaCDN offers a variety of advanced capabilities, including CDN Diversity, a new technology that allows content providers to take into account the instantaneous quality of several CDNs as a service to deliver the content with the highest quality possible. Broadpeak will also highlight its new standalone video analytics solution for displaying key video parameters to IBC2016. Other highlights include Cloud PVR, enabling operators to deliver start-over, time-shift, and catch-up TV, as well as impulsive recording, while only storing content once, according to the company. Broakpeak will highlight nanoCDN multicast ABR – multicast ABR solution for 4K content. It will also demo its CDN in a box solution to provide operators with

## BT to highlight Ultra HD outside sports STAND O.C01

BT is to unveil the latest UHD outside broadcasting links truck at this year's IBC conference in Amsterdam. The vehicle will be used by BT's Media and Broadcast division to broadcast BT Sport's live coverage of the round two Aviva Premiership Rugby Matches in 4K.

The TES52 truck, which was designed and built by systems integrator Megahertz, is the first vehicle in the UK capable of transmitting multiple HD and UHD/4K visions via fibre and satellite simultaneously, according to BT Media and Broadcast. The truck will use the latest encoding equipment, which has been specifically designed for premium live sports broadcasting, according to the company.

BT's digital and media broadcast services arm will display the TES52 truck on its stand in the outside exhibition area.

The showcase will also host panel speaker sessions which will include experts from Adstream, the BBC, Ericsson, Eurovision, Megahertz and Nevion. The sessions will cover The Next Generation of Networking, 4K HDR and Beyond, Designing a Broadcast Truck for the Future and Cyber Security.

BT Media & Broadcast recently completed work upgrading 20 leading football stadiums around the UK with a fibre network that can support multiple camera feeds simultaneously. The upgrade means that 40Gbps of fibre capacity will run directly from each Premier League football ground to the BT Tower. The fibre cabinets which are part of the new network will also be on display at BT's IBC stand.

BT recently signed a deal with the BBC to provide the broadcaster with global IP network services for at least seven years. Under the agreement, BT is delivering a fibre network designed to give the BBC network capacity to support its needs.

**CONTACT** www.btplc.com

essential capabilities, such as CDN management, video analytics, video streaming servers, and origin packaging. Broadpeak's CDN services support a variety of OTT applications for operators, including disaster recovery, overflow, and fail-over scenarios.

**CONTACT** www.broadpeak.tv

## Comigo
STAND 3.B52

**WHAT'S NEW?**
EI Cloud; EI Mind

**WHAT DOES IT DO?**
Comigo will highlight its Experience Intelligence (EI) product line. Comigo EI is described by the company as a holistic approach to content and user interaction as well as automatic metadata enrichment, leveraging TV with the best of the Internet. Comigo will demonstrate its EI Cloud, which drives contextual, personal, and social viewing experiences with EI

Mind – claimed by the company to be the TV industry's first form of artificial intelligence. During the show, Comigo will also highlight its Android STB range, running EI Middleware that interacts with the EI Cloud. Comigo says that EI Cloud is capable of working with any OTT back-end in the market, while exposing a full set of APIs to support any front-end, whether it is already deployed or in development. EI Cloud provides Experience Management tools to operators, empowering content-related applications and services that encourage contextual viewer engagement. EI Cloud also houses Device Management functionalities to simplify multi-device registration, maintenance, measurement, upgrades, and STB-specific operations, according to Comigo. EI Middleware is Comigo's software solution for STBs and TVs, which supports both AOSP and Android TV platforms. The platform can be used for OTT, IPTV, or hybrid (i.e., terrestrial, cable, satellite) TV services. EI Middleware also includes support for a range of WatchApp HTML widgets that offer contextual interaction with content for sports, ads, commerce, and many more applications. EI Middleware can be created

based upon Comigo's widgets catalogue or custom-developed leveraging the WatchApp SDK. EI Mind uses big data and deep learning algorithms on top of NLP to create a cloud-based Platform as a Service (PaaS) that uses artificial intelligence to boost TV experiences, according to Comigo. EI Mind drives a new set of AI capabilities to video front-ends, and is built to work in tandem with the EI Cloud, according to the company.

**CONTACT** www.comigo.com

## Fastcom
STAND 5.C35

**WHAT'S NEW?**
MCAS

**WHAT DOES IT DO?**
Fastcom is a licensing authority services company for connected devices. According to the firm, MCAS can manage multiple security assets throughout their respective lifecycles and is based on industry standards. Typical connected devices are set-top boxes. Thanks to MCAS, the operator keeps direct control over STBs deployed in the field, while preserving the security level of

leading solutions (e.g. CAS, DRM, SSL), according to the company. MCAS allows operators to choose the applications, middleware and the security solutions for its STBs, according to Fastcom. If required, a multi-vendor approach is also possible. Updates and changes can be done at any time for a minimum cost, even when the STBs are deployed in the field. Customers include Foxtel, which used MCAS to control iQ3 set-top-boxes while leveraging two proprietary CAS solutions running in parallel on the box, according to Stephen Joyce, Senior Platform Security Lead at Foxtel.

**CONTACT** www.mcas.ch

## Genius Digital
STAND 5.A59

**WHAT'S NEW?**
Joint QoS solution with Verimatrix

**WHAT DOES IT DO?**
Analytics specialist Genius Digital will be on the Verimatrix stand at IBC demonstrating the companies' joint secure QoS data-gathering solution. ''We still see large operators using different systems to collect from multiscreen devices and set-top

boxes, causing inherent technical and operational challenges. It's our philosophy that making the most of big data needs a holistic view of the customer – and this can only be achieved via a single system, rather than a number of disparate, cobbled-together options," said Tom Weiss, CEO, Genius Digital. "Through combining the science of data through our holistic data gathering technology with the instinct and experience of our 'data artists' we use big data to make and save money for our customers. For us IBC is all about communicating why the revolutionary effects of big data

insight can only be delivered successfully by a holistic approach to data gathering and analysis."

**CONTACT** www.geniusdigital.tv

## Harmonic
STAND 1.B20

**WHAT'S NEW?**
VR with native UHD resolution

**WHAT DOES IT DO?**
Harmonic will use IBC to showcase what it describes as the industry's first native UHD virtual reality (VR) technology demonstration

in collaboration with Dutch research institute TNO. Powered by TNO's HEVC tiling technology, which enables distribution of VR content over existing CDNs, the demo will include a VR experience on head-mounted devices, with video resolution 10 times higher than that offered by existing commercially deployed VR services, according to the tech company. Harmonic will also showcase its VR innovation alongside Viaccess-Orca through a new multiview app. Using space-related content from Harmonic on a Samsung Gear VR headset and leveraging

Viaccess-Orca's Connected Sentinel player, the demo will simulate a live VR environment by providing synchronised, multiple perspectives. Additionally, during IBC, Thierry Fautier, vice-president, video strategy at Harmonic, will share his expertise on VR technology as a presenter at a conference session dedicated to new ideas in VR and 360° immersive media. His paper presentation, titled 'VR Video Ecosystem for Live Distribution,' is slated for Saturday, September 10, at 10:45 at the RAI. Harmonic is also participating in the DVB Commercial Module Study Mission Group report on VR. The group's main objective is to investigate the commercial case for VR technology. Based on findings, the DVB will then offer insight into commercial requirements, and consequent technical specifications, for distribution of VR content over broadcast or IP networks. Results of the study are expected to be published after IBC.

**CONTACT**
www.harmonicinc.com

## IBC launches interoperability zone STAND 8.D10
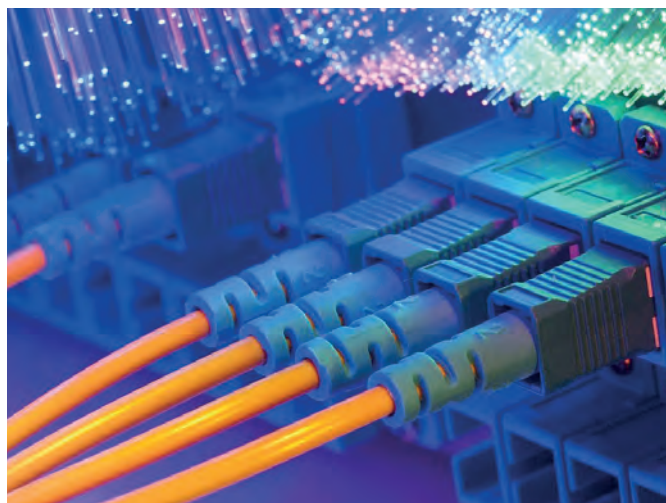


IBC is launching a zone specifically dedicated to IP interoperability at this year's show.

According to IBC, the transition to IP is one of the biggest challenges facing broadcasters and media companies today, with fears over limited inter-working and a lack of recognised standards the most common brake on progress.

The IBC IP Interoperability Zone, presented for the first time this year with the cooperation of the Alliance for IP Media Solutions (AIMS) and the IABM, will demonstrate the work of the JT-NM (the Joint Task Force on

Networked Media: a combined initiative of AMWA, EBU, SMPTE and VSF) and the AES on a common roadmap for IP interoperability. Central to the IBC Feature Area will be a live production studio, based on the technologies of the JT-NM roadmap that Belgian broadcaster VRT has been using daily on-air as part of the LiveIP Project: a collaboration between VRT, the European Broadcasting Union (EBU) and LiveIP's 12 technology partners.

The new initiative will see a 150 square metre area in Hall 8 given over to the zone. With dedicated demonstrations show-

casing interoperability and the IP studio at its heart, the zone also provides space for visitors to discuss the benefits and challenges of IP workflows, according to the IBC.

"Visitors will be able to see verified technical interoperability over IP from more than 30 companies and the same technology being used in a real production environment. It will be a showcase for the reality of the technology and a demonstration that the industry is converging on a common roadmap," said Michael Cronk, VP of core technology at Grass Valley and chairman of AIMS.

Peter White, CEO of IABM, the body that represents vendors across the broadcasting industry, said, "For a number of years now the industry has needed a way forward to collaborate on IP interoperability. It was critical that the industry's vendors came together to achieve this and at IBC we will see the fruits of the labours of the organisations behind the JT-NM and the Live IP project."

**CONTACT** IBC.org/IPzone

## Massive
STAND 14.B20



**WHAT'S NEW?**
Axis Video UI solution, Halo

**WHAT DO THEY DO?**
Massive's Axis Video UI solution is a platform for app creation and control across multiple platforms. It includes an app management server and reference apps. Massive empowers clients such

as BBC Worldwide, Channel 5, Lionsgate and Sony Pictures Television to shape the long-term evolution of their video offerings and maximise their investment. At IBC, Massive will also share news of key deployments and discuss the drivers for its rapid growth, including the creation of Comic-Con HQ, the new SVOD channel that Lionsgate unveiled earlier this year for Comic-Con International in San Diego, as well as the launch of Massive Halo, described by the company as the industry's first video UI server solution designed to bring managed multiscreen video UI to market for mid-tier video operator clients. Also at IBC Massive will highlight its selection by DAZN to deploy a new live and on-demand sports streaming service with unlimited access to over 8,000 live sporting events per year, and its partnership with Ooyala to launch Ooyala AppStudio – a new platform that enables video providers to build and deploy app and web-based entertainment services.

**CONTACT** www.massive.co

## Media Links
**STAND 1.C31**

**WHAT'S NEW?**
NetGazer

**WHAT DOES IT DO?**
Network management system NetGazer monitors and manages both local and wide area IP networks and is designed to enable performance optimisation for high bandwidth multimedia services, according to Media Links. For live remote production over IP, NetGazer helps carriers and broadcasters deliver signals on time and in the right order by enabling users to send services across a WAN and providing status information at every step, according to the company. The

platform has been designed to provide topology maps which display network elements across the LAN and WAN. An integrated SDN (Software Defined Networking) and MDN (Media Defined Networking) platform allows performance optimisation for high bandwidth multi-media services. Several NetGazer editions are available that scale from single studio environments to large enterprise and global networks, according to the company.

**CONTACT** www.medialinks.com

## Net Insight
**STAND 1.B40 & 1.D30**



**WHAT'S NEW?**
Sye

**WHAT DOES IT DO?**
Net Insight's demo of its 'true live' OTT solution, Sye, will showcase its frame-accurate synchronisation and fixed low-delay to deliver live OTT video across multiple screens and discuss the impact it expects to have on social TV and real time social media interaction. By true live OTT it means harmonising the first and second screen, which opens the door to more interactivity such as advertising, betting and voting. Net Insight believes Sye is a game changer for the live OTT market, providing unprecedented TV experiences – all of which have the potential for enhanced viewer engagement and the ability to monetize OTT content in new ways. In addition, Net Insight will launch and demo a number of solutions that it says will simplify workflow and network complexities. This includes live

contribution, facilitating the live media production ecosystem, media contribution over the internet, customer and application provisioned networks with focus on Ethernet data services and FileTeleport, and resource scheduling solutions for media, broadcasters and transmission businesses.

**CONTACT** www.netinsight.net

## Nevion
**STAND 1.B71**

**WHAT'S NEW?**
VideoPath 5

**WHAT DOES IT DO?**
Nevion is launching its new VideoPath software to meet the emerging network and service management challenges for broadcasters and service providers of IP production in a world where the distinction between facilities and contribution is blurring, and where virtualization will play an increasing role, according to the company. The new VideoIPath 5 is described as a major software upgrade in terms of architecture and functionality to enable higher scalability, responsiveness and ease of use. it will be shown for the first time at IBC 2016 both on Nevion's booth and in the LiveIP set-up used by IBC TV (Hall 8.D10). It will demonstrate how operators can handle more devices and larger network infrastructures, simplify the set-up of devices and links and provision end-to-end paths across COTS routers/switches using Software Defined Networks (SDN) and technologies like IGMP (Internet Group Management Protocol), OpenFlow and native interfaces, says Nevion. The upgraded software also provides support for third party products, and increases openness and integration with the third party interfaces thanks

to its new REST-based API. It also offers new features to enhance the monitoring of links, devices and services, according to the company. LiveIP is a proof of concept of a complete live production that relies exclusively on IP. The VideoPath service management platform formed the backbone of the set-up used in the live production and was used to assist the European Broadcasting Union (EBU) and Belgian public broadcasting company VRT in delivering the first live on-air broadcast using the VRT Sandbox LiveIP Studio.

**CONTACT** www.nevion.com

## TV2U
**STAND 9.LP12**



**WHAT'S NEW?**
IVAN

**WHAT DOES IT DO?**
OTT/IPTV technology specialist TV2U is using IBC to unveil its new real-time analytics service and content aggregation engine and is also showcasing its Intelligent Video Accessible Network (IVAN) white label OTT/IPTV delivery service that unifies the delivery of content straight to the playout device. The company says that a key objective of the IVAN platform is to offer customers the advantage of tapping into real-time analytics, which are gathered from multiple sources including the delivery platform, player applications, and social media. The analytics generate detailed insights about users such as their demographics, location (with the ability to pinpoint their postal code) and viewing habits including their

content consumption patterns, details on which devices they use, and their likes and dislikes. The real-time analytics engine, lets content owners and advertisers know to what extent customers are engaging with their material, according to the company. Also being highlighted at this year's IBC is the TV2U's vision of the merging of new media, connected homes and Internet of Things and the Karaoke2U platform-as-a-service for karaoke content owners and publishers.

**CONTACT**
www.tv2u.com

## V-Nova
**STAND 14.K17**

**WHAT'S NEW?**
Perseus

**WHAT DOES IT DO?**
Perseus is V-Nova's encoding software that the company says can support UHD video delivery at HD bitrates, HD at SD and SD at sub-audio rates on current infrastructure and on deployed devices. The IBC demonstrations in Stand 14.K17, Balcony Suite BM15 in Hall 1 and multiple partners' stands will include mobile VoD platforms The on-stand demonstrations include the use case of FastFilmz in India which deployed Perseus to provide quality video streaming over the 2G networks that 70% of the region's consumers use for Internet access. In its launch in the Tamil language South Indian region, V-Nova has enabled FastFilmz to expand its total addressable market from 30 million to 120 million consumers, the company claims.  Thanks to

its better user experience and lower data rate cost per minute, FastFilmz is expanding its user base and demonstrated increases in mobile data consumption per user. Other applications of Perseus include live full HD sports over mobile, delivering high quality full 1080p HD video to mobile devices at less than 1.5Mbps. For IPTV distribution V-Nova claims Perseus can extend service reach to existing deployed STBs by eight times or more, via a software upgrade. The on-stand case study is based on a deployment for Sky Italia, which it says has reduced

the bitrate for its HD IP service from 8Mbps to less than 4Mbps. For 4K contribution, V-Nova is demonstrating the contribution of 4K international feeds of the Euro2016 championship to Eutelsat for the launch of RAI's UHD channel. According to V-Nova, the demonstration shows how Perseus enables the contribution of intra-only visually lossless 4K/UHD video alongside HD using today's telco contribution circuits. For VR/360 video: V-Nova says that Perseus increases quality and reach to power mobile devices capable to

display HD or higher. V-Nova will also take part in a number of IBC speaking engagements, including: IBC Future Zone (Hall 8): Video encoding to boost the value proposition of VR and 360 video, Saturday September 10 at 16:30-16:50; IBC Content Everywhere Hub (Hall 14): Turbocharging video delivery, Sunday September 11 at 11:30 -1:50; IBC Business Transformation track (Emerald Room): 'Is there a business case for UHD?', Sunday September 11 at 17:00-18:00.

**CONTACT** www.v-nova.com

# WISI to demonstrate Katamaran STAND 4.B50



**WISI will present a live demo of its multiscreen and OTT delivery platform Katamaran for the first time at IBC 2016.**

**WISI has combined key components and software infrastructure of the platform it has acquired from US firm Aereo with its established WISI Tangram, and Chameleon reception and processing platforms and the high-density, modular linear and multiscreen ABR transcoding platform WISI Inca 4430 for MPEG-2 and MPEG-4 AVC. The result is a solution that meets the multiscreen and OTT delivery needs of network and independent video operators.**

**Katamaran is initially aimed at independent video operators and provides the opportunity to deploy and support scalable multiscreen services on IOS, Android, and Roku, with further HTML5 browser support. The platform features cloud DVR capabilities, catch-up TV, authentication, back office, EPG management and other administrative tools.**

**WISI is also showcasing its 5420 packager and origin server suitable for integration into both Katamaran and non-Katamaran multiscreen and OTT applications. The 5420 continues support for Inca's famous Vid-**

iOS Intelligent Video Delivery solution and introduces new features including support for subtitling, multilingual and multi-track audio, capacity for up to 5000 simultaneous user connections, and support for publishing to third-party CDNs such as Akamai.

WISI has meanwhile also equipped its headend system Tangram for IPTV and analogue/digital TV deployments with a new software architecture. This in-house development doubles the performance of Tangram modules for the reception and play-out of IPTV streams without any more energy consumption, according to WISI. It has also equipped its headend system Chameleon with its new software architecture and xView. WISI's headend systems Tangram 3.0 and Chameleon now also can be monitored with the end-to-end network management system xView. This allows for status monitoring and the control of any device in the entire transmission chain from headend to HFC network, according to WISI.

**CONTACT www.wisi.de**

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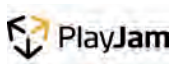
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# Technology in focus

## Infrastructure, equipment and product news for digital media distribution

## McClelland: Industry at 'front end' of upgrade cycle

Arris' new CEO Bruce McClelland says that the industry stands "at the front end of a significant upgrade cycle" as operators seek "more bandwidth into residential as well as corporate networks".

There will, however, be no radical shift in strategy under McClelland, recently named as successor to long-serving CEO Bob Stanzione, who is to take on the new role of executive chairman within the cable and video technology company.

Interviewed after the announcement was made in August, McClelland told *Digital TV Europe* that the pay TV market remained robust and that the service provider consumer premises business – encompassing both set-top boxes and IP gateways – remains "very strong" despite earlier concerns that it faced long-term decline.

Arris' recent acquisition of Pace can be seen as a vote of confidence in the continued robustness of this business. McClelland said that the acquisition gave Arris "more scale"



**McClelland: content delivery is moving to IP.**

as well as a route into the satellite business where it lacked a strong presence. He added that most of the work to integrate the Arris business has already been done.

"The business is going to change," said McClelland. "At some point, all delivery of content will be over IP. Operators are doing that to provide an enhanced user experience and bring in OTT content as well as their own services' content. That will mean evolution of the type of devices they deploy. However, the majority of pay TV service providers market services around the consumer experience in the home and they highlight the capabilities of their devices – and that is a crucial part of the

foundation of what they offer. It is a way to generate confidence in the service."

He said that CE devices will become more relevant as consumers seek to move content around the home wirelessly. However, McClelland said he did not expect the set-top market as a whole to see significant growth as operators focused on a wider range of client devices, including gateways.

McClelland said that cable operators, including in the US, had shown their strength as they ramped up growing numbers of broadband customers. One task for companies such as Arris is to help these operators manage the migration to all-IP networks, he said.

Looking forward, McClelland said that he wanted Arris to address some gaps in its presence internationally, which could possibly be through further acquisitions. International business is likely to be the key driver for Arris' future growth as a company, he said.

## Espial closes acquisition of Arris' Whole Home

Espial has completed its acquisition of Arris' Whole Home Solution (WHS) platform, the end-to-end, cloud-hosted video service that it agreed to buy in July.

Espial said that the deal will enable service providers to quickly meet increasing consumer demand for next-generation video services.

The acquisition includes the WHS software engineering and operations teams in Kirkland,

Washington, the WHS Network Operations Center, and two geo-redundant data centres.

Ron Miller will move from Arris to lead the business as general manager for Espial.

"WHS expands our solution portfolio with a cloud-hosted video-as-a-service platform that is complementary to and will leverage Espial's current solutions for next-generation IP video services," said Espial's CEO, Jaison

Dolvane.

"Espial gains a broad base of new customer relationships and further scales our world-class integration, operations, and software development teams. We look forward to collaborating with Arris to enhance the Whole Home Solution, strengthen support, and expand the customer base going forward," he said.

Terms and conditions of the deal were not disclosed.

# Cisco unveils DOCSIS 3.1 reference design

Cisco has unveiled a reference design for Full Duplex DOCSIS, the latest iteration of the cable broadband technology that is designed to deliver fibre-type speeds over hybrid fibre-coax networks.

Cisco says the technology will let cable operators deliver multi-gigabit speeds over their HFC networks, enabling the deployment of new services such as 4K TV, security and managed business services without the need to drive fibre to the premises.

The company says that Full Duplex DOCSIS will also enable the deployment of symmetrical bandwidth services.

Cisco has developed a reference design for a 'multi-slice' digital echo canceller for the Full Duplex DOCSIS specification that can support return paths from 200MHz/1.7Gbps up to 1.2GHz/10Gbps.

CableLabs revealed its plans for Full Duplex DOCSIS in February at its Orando winter conference. The technology taps techniques currently used by wireless networks to combine upstream and downstream bandwidth rather than having a dedicated upstream channel.

According to the standards body, the technology could double the capacity available for upstream traffic by simultaneously using the same spectrum, unlike current technologies such as frequency division duplexing – currently used by DOCSIS – and time-division duplexing, used by WiFi and G.Fast networks.

Cisco is making its own technology available on an open source basis. "By making this royalty-free design available to the industry, we can help our cable customers evolve to more rapidly deploy virtualised, fibre-deep, and all-IP infrastructures," said John Chapman, Cisco fellow and CTO, cable access business. "We hope to accelerate the transformation of the cable industry to deliver multi-gigabit speeds and new high bandwidth services and products, and in the near future, customers can begin to enjoy the benefits of Full Duplex DOCSIS technology."
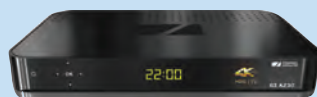
# GS Group unveils first Russian 4K UHD TV box

Russian technology provider GS Group has unveiled the first Russian-made 4K UHD TV set-top box.

The GS A230, to be marketed under the General Satellite brand, is equipped with a ST Microelectronics processor, WiFi router and built-in 1 TB hard drive.

Pay TV operator and GS Group strategic partner Tricolor TV has previously launched the first bundle of three UHD TV channels in the Russian market. GS Group said that about 15,700 4K TV sets were sold in Russia in 2015.

The device is available for sale from General Satellite authorised dealers in Russia. The box provides access to interactive services such as Kinozaly. Tricolor TV, and is equipped with two DVB-S/DVB-S2 tuners. It is powered by a new quad-core single-chip STMicroelectronics microprocessor and a co-processor designed by GS Group. It also comes with an integrated 802.11ac dual-band WiFi router and an HDMI 2.0 interface.

"GS Group has made a new generation of television affordable for millions of Russian viewers. The first Russian set-top-box for UHDTV is a brand new device not only for the domestic market: it can easily compete with western and Asian equivalents when comparing technical performance and cost. As a national technology leader in the field of consumer electronics development and manufacturing, GS Group is the first to bring a home-produced modern device for UHD content viewing to the Russian market," said Andrey Bezrukov, director for strategic marketing of GS Group.

Separately, GS Group has launched the first IPTV set-top box under the General Satellite brand, aimed at internet service providers, OTT operators and content aggregators. The GS H5912 device is designed to provide TV over IP-based networks and supports HD channels and video-on-demand functionality. GS Group said that the box, which was developed over six months at GS Group's GS Labs centre, is initially targeted at IPTV providers but will be available for OTT service providers in the near future.

"We follow global trends and strive to provide access to the high-quality digital TV services to an increasing number of users across the country," said Bezrukov. "We've analysed the rapid spread of OTT technologies and have discovered great prospects in its development in Russia."

The boxes will be manufactured at GS Group's facility in the Kaliningrad region.

## In Brief

### ADB adds second-screen

Technology provider ADB has launched new second-screen companion app features to its graphyne2 TV software platform. The platform is due to be launched at IBC. The second-screen application, which is free of charge, is designed to allow service providers to give users access to features such as global search, management of multiple recordings and channel lists, along with the capability to browse multiple personalised VOD libraries on their chosen device, according to ADB. The app is also designed as a communication channel. Clickable push messages and ad displays allow operators to execute personalised communication campaigns, while interactive messages allow viewers to complete additional actions, such as selecting a movie or activating a new service, according to ADB.

### Oculus Rift for Europe

Virtual reality headsets from Facebook-owned Oculus Rift will be available in Europe and Canada from this month, the company has announced. Rift headsets and in-store demos will be available from Amazon.co.uk, John Lewis, Currys PC World, Game Digital and Harrods in the UK, from Amazon.fr and Fnac in France and from Amazon. de. MediaMarkt and Saturn in Germany. In Canada the devices will be available via Best buy and Microsoft Store Online. The suggested retail price for the UK is £549 and, for France and Germany, €699. Oculus Touch, the company's hand-movement-mapping control software, is meanwhile being showcased at the Gamescom event in Cologne, Germany

# Intel unveils new 'merged reality' system

Intel CEO Brian Krzanich has used his company's Developer Forum in San Francisco to unveil a new integrated virtual reality system – Project Alloy – that allows users to untether themselves from computers and other external devices and interact with the real world. Intel has also teamed up with Microsoft to optimise Windows-based content on Intel-based VR devices.

Project Alloy will be offered by Intel as an open platform next year, enabling developers to create their own products from the Alloy design.

The design demonstrated by Krzanich in San Francisco has computing power located in the head-mounted device, giving users free range of motion across open spaces. The device integrates collision detection and avoidance technology. Intel RealSense cameras attached to the headset take the place of any external sensors or cameras placed around a room.

The device allows users to use their hands to interact with elements in the virtual world, creating "merged reality", in Intel's parlance.

Intel's collaboration with Microsoft will see the pair work to build a range of devices for the consumer and business markets based on a specification for 'mixed reality'-ready PCs and

*Krzanich: Project Alloy will "take the cord off the VR headset".*

head-mounted displays. The pair plan to publicly release version one of the spec at the Windows Hardware Engineering Community conference in Shenzhen, China, in December.

Microsoft also plans to release an update of its Windows 10 operating system next year that will enable PCs to run the Windows Holographic shell – a framework that allows for the blending of 2D and 3D apps simultaneously along with mixed reality applications.

"Project Alloy takes the cord off the virtual reality headset," said Krznanic during his keynote. "It is completely contained... It is a completely self contained virtual world all in one package."

He said that the device provided the ability to "merge the physical and virtual world together".

# BBC Worldwide teams up with Thoughtly

BBC Worldwide has teamed up with artificial intelligence start-up Thoughtly to explore how machine learning can help it understand which genres of content are most in demand in which territories.

Following an initial trial of Thoughtly's technology, the pair have completed a detailed analysis looking at synopses and descriptions of programming alongside data mining to figure out how best to categorise individual programme titles.

Thoughtly's flagship platform, Ellipse, is designed to map themes, generate summaries and identify anomalies in text. It was originally designed to assist researchers in academic institutions to draw insights from very large volumes of text, such as helping medical researchers identify unexpected anomalies

in large clinical data sets or help scientific researchers navigate unstructured text for automated screening of 'noisy' data sets.

BBC Worldwide is using the technology to identify themes that are under or over-represented in its content, to identify recurring and possibly unseen patterns across the various genres in its catalogue, identify which themes have grown and which have declined over the years and generally build a deeper understanding of its content with the objective of matching it with the most relevant audiences, according to David Boyle, EVP of insight.

"Through working with Thoughtly, and utilising machine learning, we are building a deeper understanding of our content so that it can be paired with the most relevant audiences for both the BBC Worldwide and our
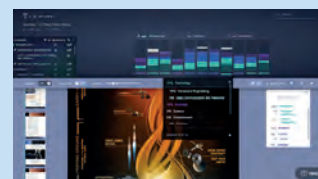
partners," said Boyle. "We are working together to answer some key analytical questions including: What are the recurring and elusive patterns that transcend the various genres in our catalogue? And how have themes evolved over the years – which have grown, declined, appeared and dissipated?"

Chase Perkins, founder and CEO of Thoughtly, said: "Thoughtly makes machine learning-based research tools for non-technical professionals. If you want people to reap the utility of AI, you need to provide them with an immersive, app-like experience."

# Chinese telecom group to acquire Spacecom

Israeli satellite operator Spacecom is to be sold to China's Beijing Xinwei Technology Group for US$285 million (€253 million) in a deal that values the operator of the Amos satellites at a significant premium to its average stock price for the last month.

Under the terms of the deal, the Chinese conglomerate will reportedly take on ILS1.478 billion in debt (€347 million). Spacecom's majority owner is Eurocom, Israel's largest privately owned communications group.

Under the agreement, which reportedly could face regulatory hurdles in Israel, Spacecom will be under the control of Israel-domiciled company Big Bird, led by a former head of the communications arm of the Israel Defence Force. The company is a wholly-owned subsidiary of Beijing Xinwei-owned, Luxembourg-based, Luxembourg Space Telecommunications.

Telecom group Beijing Xinwei

is led by chairman, CEO and Chinese billionaire Wang Jing. The group is known to have close ties to Great Wall Industry, China's main space industry group, and is involved in plans to launch a group of low-Earth orbit satellites to enable mobile communications in China following a move in 2014 by the Chinese State council to open the country's telecommunication infrastructure to private investors. It has also reportedly been involved in satellite plans in a number of international markets, including in Latin America.

"The global market for commu-nications satellites is undergoing a consolidation process, enabling the merging companies to improve their competitiveness," said Spacecom CEO David Pollack in a statement.

"Beijing Xinwei is a strategic partner, expert in the field of telecommunication, planning to expand its business the communication satellites field, The merger will provide the company with financial strength and will enable further development and growth."

Major General (Res.) Ami Shafran, representative of Beijing Xinwei Group said: "The impressive accomplishments and capabilities of Space Communication is well known in the industry. The merger perfectly fits the Group's moves to expand its operations in the worldwide communications market. At the same time, the transaction will provide to Space Communication financial stability and will boost its growth."

# LG units roll out Connect

Liberty Global-owned cable operator UPC Central Europe, which operates in Switzerland and Austria, is to provide 300,000 new Connect routers free of charge to customers across both countries.

UPC is to deliver the new Connect boxes to existing customers as part of an ongoing upgrade programme. The 300,000 devices are expected to be installed by the end of next year, replacing older routers. Some 160,000 boxes will be rolled out in Switzerland this year, with Austrian customers to receive their boxes next year.

The initiative follows a Swiss pilot where over 75% said they were happy with the new device.

# Vodafone offers 'Smart Router'

Multi-play service provider Vodafone Portugal has launched a new 5GHz 802.11ac WiFi-enabled 'Smart Router', provided as an integrated part of its TV Net Voz OTT TV offering.

According to The Portuguese operator, the router delivers internet around the home four times faster than current devices.

The device also supports Guest WiFi, a service that allows subscribers to create an additional WiFi network that can be shared with friends and family while protecting the security of the main network.

The Guest network can be customised with regard to speed or time of availability.

Other features available to

Vodafone subscribers include the Smart Router App, and Android app that allows users to control their home network remotely, turning the signal on or off, changing the name of the password and determining which devices are connected.

The router is being offered as part of Vodafone's TV Net Voz OTT TV service for new customers at a promotional price of €28.90 a month for 24 months.

The launch of the Smart Router follows Vodafone Portugal's launch of a 4K UHD TV offering, along with other recent additions to its TV service including access to SVOD service Netflix, and the recent launch of Brazilian international TV channel Globo.

### AMC teams with Snapchat

AMC Global has teamed up with Snapchat to create an exclusive *Fear the Walking Dead* zombie-themed 'Snapchat Lens' ahead of the launch of the second half of season two of the show. A Snapchat Lens allows users of the mobile messaging app to apply filters and animations to their selfie snaps, transforming the images which can then be shared with contacts. The *Fear the Walking Dead* Lens will allow fans of the series to transform themselves into the undead within the Snapchat mobile picture messaging app, according to AMC. The company says that this is the first time that a Snapchat Lens has been created for a TV series across multiple territories.

### Microsoft buys Beam

Microsoft has agreed to buy Beam, a live-streaming video-game service that lets viewers watch and play along with other gamers in real-time. The Seattle-based company, which launched in beta in January, claims to have evolved game streaming from a passive, watch-and-chat experience into one with real-time participation by the viewer. Viewers can perform tasks like choosing weapons, setting challenges, selecting quests and making movements using "simple visual controls", with interactivity designed to work with any game. "We at Xbox are excited about this convergence between playing and watching, and want to provide gamers with the freedom and choice to have great multiplayer experiences across all of Beam's platforms," said Chad Gibson, partner group program manager, Xbox Live.

## In Brief

### NextVR raises US$80m

Virtual reality broadcast specialist, NextVR, has raised US$80 million (€72 million) in Series B funding, which it said will help to expand its global footprint. With the new financing, NextVR said that it will accelerate development of its virtual reality platform and international operations. The company, which specialises in streaming live VR content, said that it plans to deliver "considerably more live entertainment" to consumers – including concerts, sports and other performances. The majority of the Series B funding came from Asian investors involved in the entertainment, content and technology markets, as well as new US investors.

### Telekom Euro-network

Deutsche Telekom has moved forwards with plans to build a pan-European network by opening the first production site for the project in Budapest. The Hungarian development will be followed by the launch of two further production sites in Poland and Greece in 2017, which together with Hungary will form the back-end of Telekom's future European infrastructure. The Hungarian facility will be fully operational and ready to run the first services for all European subsidiaries by the end of this year. The company has a long-term project to migrate fixed and mobile services to a pan-European infrastructure that will simplify its operations and remove inefficiencies – Telekom currently operates up to 13 different TV platforms, for example. Local operational subsidiaries will use the modular functionality to create services for individual markets.

# Virgin Media unveils new V6 box and TiVo UI

Virgin Media has unveiled new details about the Liberty Global EOS platform-based box it is to release, and has launched its updated TiVo user interface, including a new feature that will enable users to find, save and group together content across linear, on-demand and online TV services.

Virgin Media will market the Liberty Global EOS box design in the UK as the Virgin TV V6.

"We have confirmed that the box will be called the Virgin TV V6 and it is of course powered by TiVo. It is 4K UHD ready on Netflix and YouTube. Apart from that we are not releasing any further details at this stage, but please stay tuned, because there will be more news to come," the company said in a Tweet response to a consumer who used social media to complain about the quality of previous Virgin Media boxes.

The EOS box has been designed by Liberty Global as a standard advanced TV hardware platform that will be rolled out across its European footprint and in Latin America. While the device will carry the updated Horizon interface elsewhere, the UK operation is sticking with an updated version of its TiVo interface for the time being.

That new TiVo interface has now gone live, featuring Series Link+, a capability that, according to the operator, will enable users to group together TV services into one place, including live channels, on-demand content and online services including Netflix and BBC iPlayer.

By using Series Link+, viewers will be able to instruct their boxes to record entire series but also to find all related episodes available on-demand, including on streaming services such as Netflix. All of the shows will be put into a My Shows folder ready for them to watch later.

Other key features of the update are: smart search, enabling viewers to find shows by entering only the first letter of the programme title; a reduction in the number of lists and text on the guide in favour of more images; the ability to pick up on-demand programmes as well as recorded content from the moment viewers stopped watching; and bookmarking of programmes in a folder.

# Ooyala launches AppStudio user interface

Telstra-owned OTT TV specialist Ooyala has teamed up with Massive Interactive to launch Ooyala AppStudio, a new platform to enable video providers to build and deploy app and web-based entertainment services.

The AppStudio is designed to enable providers to deploy OTT services with simple interfaces without the need to hire technical staff to build or manage services, according to the company.

Ooyala says that content providers can use the AppStudio to automate the building of OTT apps for devices including Apple TV, Roku, Amazon Fire TV and Chromecast as well as iOS and Android devices and the web.

The AppStudio was developed in partnership with Massive Interactive and includes capabilities to deploy, manage, track, analyse and make money from all

**Lepe: media companies have been held back by the cost of apps.**

components of a cloud-based OTT service, according to Ooyala. Revenue models supported include subscription or advertising-supported VOD as well as hybrid models.

User registration is provided via Massive Interactive's Massive Halo product, while video management and delivery, content recommendation and analytics and ad server support is provided by Ooyala.

Other contributions include payment management and subscription billing from Stripe, Quality of Experience analytics from Nice People at Work and page-level analytics delivered by Google Analytics.

"Media companies want to tap into the fast-growing opportunity OTT represents, but have been held back by slow pace and high cost of developing apps for the broad array of connected devices in the consumer market. Ooyala AppStudio changes that. There is tremendous growth in OTT demand particularly outside of the US, where broadband and 4G connectivity is improving, making offerings accessible to huge new audiences. For local content providers who want to hedge against larger OTT incumbents entering their market, Ooyala AppStudio is a perfect fit," said Ooyala's co-founder and senior vice-president of products and solutions, Belsasar Lepe.

The product will be demonstrated at IBC in Amsterdam.

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# On the move

TV Liberty Global's co-chief financial officer **Bernie Dvorak** is to retire from the group, with **Charlie Bracken** (*pictured*) taking over as sole CFO. Dvorak, who currently serves as EVP and co-chief financial officer responsible for accounting, compliance and investor relations, will retire at the end of this year. Effective from January 1, Bracken, currently EVP and co-CFO responsible for finance and treasury operations will become the group's sole CFO. Liberty Global has also named **Jason Waldron** as senior vice-president and chief accounting officer, reporting to Bracken. Waldron is currently a partner for KPMG in its telecom practice in Denver, Colorado and served as KPMG's lead audit partner for Liberty Global from 2010 to 2014.

Polish broadcaster Polsat Group's chief financial officer, **Tomasz Szelag**, has been made a member of the supervisory boards across the companies of parent company Solorz-Zak Group. Szelag, who is already a member of the supervisory board of free-to-air TV arm Telewizja Polsat Sp. z oo, ZE PAK SA and Plus Bank SA, will now also serve on the boards of pay TV operator Cyfrowy Polsat SA and telecom arm Polkomtel Sp. z.oo. As part of the change, Szelag will no longer serve on the separate management boards of Cyfrowy Polsat and Polkomtel. His place will be take by former deputy **Katarzyna Ostap-Tomann**, who already sits on the management board of Telewizja Polsat. The changes will take effect on October 1.

Cable and video technology group Arris has appointed **Bruce McClelland** as CEO, with current chief executive **Bob Stanzione** taking on the role of executive chairman. McClelland, who will take up the role on September 1, is currently president, network and cloud and global services, responsible for overseeing the development and delivery of Arris's portfolio of broadband and video network infrastructure products and cloud-based software, along with an its technical and professional services organisation (*see separate story, p.44*).

Canada-based video app platform You.i TV has hired **Dan Beer** in the new role of chief operating officer to help drive international growth. He previously headed up two groups at IBM – the performance management software division, at which he was responsible for strategic direction and operations, and mergers and acquisition integration, for which he led due diligence and integration of more than 20 acquisitions.

SFR Media, the recently created content arm of Altice-owned French service provider SFR, has named **Clément Courvoisier** as director of digital. Courvoisier will join on September 19 and will report to Damien Bernet, deputy CEO of SFR Media. Courvoisier previously served as director of marketing at newspaper publisher Group Figaro and as director of digital activity at financial daily *Les Echos.*

Fox Networks Group has hired a former senior CNBC executive to become general manager of a restructured African operation. **Gary Alfonso** (*pictured*) will lead FNG Africa, taking control of sub-Sahara operations for the broadcast group and sister business National Geographic Partners. **Nami Patel** and **Makhosazana Khanyile** have also landed senior roles in a rejigged FNG operation, Patel is promoted from VP, business development, Europe and Africa, to CFO, UK and Africa, while FNG Africa marketing head Khanyile has been named director of sales and marketing. Alfonso joins from Nigeria-based broadcaster Gotel Communications, where he was COO, and was previously managing director of CNBC Africa and GM of Summit TV. The news comes soon after **Adam Theiler**, FNG's executive VP, Nordics, Turkey, Greece, Israel and Africa, tweaked FNG management in Turkey, promoting **Cenk Soner** and **Mehmet Icagasioglu** to new top-level positions. It is the latest change at FNG Europe and Africa, which came into being in January with the 21st Century Fox-owned networks business dropped its Fox International Channels moniker and said goodbye to long-serving international chief **Hernan Lopez**.

Bonnier Broadcasting-owned Finnish commercial broadcaster MTV's CEO **Jarkko Nordlund** has named a new management team, with Discovery's **Sami Vikback** taking charge of the group's advertising business and Viasat's

**Johannes Leppännen** becoming head of pay TV. Nordlund has hired Vikback from Discovery Networks Sweden, where had the role of revenue director, to take charge of the advertising-led business as vice-president. Prior to joining Discovery, Vikback was president of SBS Finland. Leppännen, who was previously CEO of Modern Times Group's Viasat Broadcasting in Finland and the Baltic states, becomes vice-president, consumer business, taking charge of the broadcaster's pay TV operations. Other new recruits to MTV's management team include HR director **Manne Tiensuu** and CFO **Marina Ruohonen**. Nordlund, who took over at MTV in January, was previously managing director of Universal Music Finland and the Baltic states.

Scripps Networks Interactive has hired A+E Networks UK's **Kasia Jablonska** to become VP, affiliate sales in EMEA. Jablonska has been with A+E for three years, but will now report to SNI's senior VP, commercial, UK and EMEA Ross Hair. She will be responsible for distribution of Scripps' lifestyle channels, including Food Network, Travel Channel and Fine Living, and the soon-to-launch HGTV, which debuts in Africa and the Middle East in November. At A+E, she was director of distribution, UK, central and eastern Europe, Benelux, Africa and the Middle East. ●

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> *"Hedging your bets is a good idea. All media companies with any sense are doing the same because although the times they are a-changin', there is still a lot of money and branding potential in linear TV channels."*

# Content is still King

**The** march towards convergence has been going on a while but it has taken the digital darling of the moment Vice Media to remind TV executives that "millennials are now a bigger group than baby boomers" and that anyone not embracing the new audience and appetites is facing extinction.

Well, maybe. The remarks were from iconoclastic Vice founder Shane Smith, never shy to express a self-aggrandising opinion, speaking at the Guardian Edinburgh TV Festival. His view is that the traditional media faces a "convergence bloodbath" as it tries to keep up with more nimble online folks like Vice. This is both a thinly-veiled appeal to traditional media players to work with – or invest in – Vice as much as a reminder that tech-enabled, younger viewers act a lot differently than audiences in the past.

Maybe Smith's most interesting warning was not to discount the appetite that younger audiences have for "real stories" as long as they are presented to them by peers and not in a condescending, "old media" manner.

Broadcasters would do well to heed warnings. In the UK, BBC broadcast TV viewing dropped by 8% in the second quarter of 2016 compared to 2015, according to Ofcom. In the same period, viewing fell a staggering 18% among those aged 16 to 34, which was driven in large part by the BBC Three TV channel becaming online only. Interestingly, BBC iPlayer online viewing was only up by 4% in the same period.

Meanwhile, online giants like Facebook and Twitter are adding live video to their social media platforms, while Yahoo has recently teamed up with eSports company ESL to offer live streams of ESL-produced gaming tournaments. But who has taken a big stake in ESL, betting that eSports is at least one of the next big things? The answer is traditional media outfit Modern Times Group. Both Turner and Scripps Interactive Networks are investing in eSports as well.

Vice has itself attracted the attention of old, traditional media companies, including Disney, 21st Century Fox and A+E Television Networks. And it is interesting to note that, although its video output was born online, the youth-oriented business is now embracing "old" distribution, with the rollout of a linear TV channel. Viceland aims to be up and running in 50 countries by next year. Many of those launches will be in partnership with more traditional media companies with local connections, including The Times of India and Greece's Antenna Group.

Hedging your bets is a good idea. All media companies with any sense are doing the same, because although the times they are a-changin', there is still a lot of money and branding potential in linear TV channels. Traditional TV companies know that having the best content is key and the best content includes exclusive content and, in the future, high-value 4K UHD content.

Sky has known this for a while now – the joining together of its three European TV operations under one content chief, Gary Davey, is all about creating programming that will work across its operations. Meanwhile, Liberty Global has unveiled its first original series deal with its part-owned All3Media.

So everyone agrees that having the right content is key, which is good for producers and consumers living in a world of nearly infinite choice from a variety of sources. Hence the predictions of a "convergence bloodbath" as companies jockey for position.

## A sharper picture

4K UHD content is increasingly seen as a key differentiator. Despite recent surveys like one from Irdeto and SNL Kagan that found that 64% of video service providers and 73% of content producers believe that consumers are willing to pay 10%-30% more for access to 4K content, there is still a lot to do to make it mainstream, including creating enough content to drive screen purchases. On the plus side, the Consumer Technology Association predicts that 2016 will see 4K UHD TV shipments reach 15 million units in the US.

There is a danger, however, that 4K resolution could be superseded and leapfrogged by 8K. Given that both Panasonic and Sony have planted the 8K flag in the ground in partnership with NHK, and given that the next Olympics – always a driver for consumer uptake of new tech – is in Japan in 2020, maybe there is a case for delaying 4K and waiting for 8K. Japan plans to begin full-scale 8K broadcasting as early as 2018.

Liberty Global boss Mike Fries is taking a wait-and-see approach to 4K because he is concerned there isn't enough 4K content available to make it a strong selling point. However Liberty's new set-top boxes will be 4K capable. Perhaps some of that original content Liberty is commissioning from All3Media will be in 4K. Given that attracting consumers is a key strategic ambition in a media landscape awash in choice, that's not much of a leap. ●

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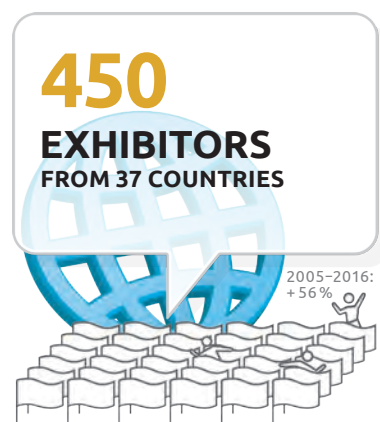### EXHIBITION & CONGRESS

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