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WORLD IN BRIEF

NHK on course for 8K broadcast

TOKYO – Japanese public broadcaster NHK expects to successfully begin 8K transmissions on Dec 1 this year, when some 300 shows are ready to be viewed on the flagship 8K channel. NHK will also be broadcasting the 2020 Tokyo Summer Olympic Games in 8K.

Over 50 million Asians own 4K/UHD STBs

SEOUL – The number of pay-TV subscribers in Asia owning a 4K/Ultra HD (UHD) set-top box (STB) reached 53.6 million at the end of last year, reported market research firm Dataxis. Led by South Korea and China, more than 30 pay-TV operators have launched 4K/UHD STBs in Asia.

SBS pursues VR journey

SYDNEY – Australian public broadcaster SBS has released its final *Untold Australia* VR immersive experiences, *Every King Tide* and *A Thin Black Life*, which bring to life two diverse Torres Strait Islander stories. The former title can be viewed via the SBS VR app, while the latter title can be enjoyed using Samsung Gear VR.

Leverage efficacy of HDR to enhance viewing experience

BY JOSEPHINE TAN

LONDON – In the 20th century, the migration from black-and-white to colour TV was the broadcast industry's first attempt to bring viewers — from the comfort of their living rooms — into the “real world”.

Technology has since advanced rapidly, bringing forth the introduction of HD technology, the resolution that is currently used by many broadcasters worldwide. With the transition from SD to HD in Asia picking up momentum, TV viewing experience continues to evolve for millions of households in the region.

And at the beginning of the 21st century, this “race for reality” has continued with the emergence of 4K/Ultra HD (UHD) — and in the next few years 8K systems.

One exciting development to note is high dynamic range (HDR)



technology that promises to provide “better pixels”.

HDR can expand the range of contrast ratio. For instance, bright and dark parts of images can be

enhanced to be brighter or darker, hence offering more depth. Combined with 4K/UHD, for example, HDR can empower filmmakers and content producers to bring out

In the UEFA Champions League football game between Juventus and Tottenham Hotspur at Wembley Stadium earlier this March, BT Sport conducted a live broadcast trial of delivering the match in HD HDR direct to mobile.

more details and vibrant colours to the human eyes, making the overall image as close to reality as possible.

In driving demand and interest for HDR, TV manufacturers have begun to integrate the technology into their new TV sets, while video streaming service providers such as Amazon Prime Video and Netflix are also offering 4K/UHD HDR content.

And at the upcoming 2018 FIFA World Cup in Russia this June, FIFA, football's governing body, has confirmed that all 64 matches of the quadrennial tournament will be

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Broadcasters need knowledge to cross the IP chasm

SINGAPORE – In his 1962 book *Diffusion of Innovation*, Everett Rogers popularised the *Innovation Bell Curve* theory, which is used to plot the adoption cycle of new technologies by consumers.

In 1991, Geoffrey A Moore added *The Chasm* to this curve in his book *Crossing the Chasm*, in which he defines the chasm between the early adopters and the early majority.

Citing the above examples, Fintan Mc Kiernan, CEO of Ideal Systems, South-east Asia, told APB: “In the broadcast IP adoption curve, we are still pre-chasm, but only just. In 2018, we are on the precipice — the commoditisation of broadcast IP equipment and the maturation of SMPTE standards will be the drivers that enable the crossing of the chasm into the mainstream.

“However, and most importantly, broad-

casters need knowledge to successfully cross the chasm. Without knowledge, the fear of choosing the wrong technology or deploying it the wrong way, will delay the adoption of IP by broadcasters.”

This, Mc Kiernan explained, is the main driver behind Ideal Systems' decision to work with APB to present an IP Master Class at the Marina

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When Scottish inventor John Logie Baird gave a public demonstration of televised silhouette images in motion at Selfridge's Department Store in London on 25 March 1925, the wheels were set in motion for the birth of a technology that had — and continue to have — a great impact on society today.

Since then, TV has evolved from black-and-white to colour, and onwards to digital. Where resolutions are concerned, 4K/Ultra HD (UHD) has been touted as the "next big thing" — or at least, it was, until a previously unobtrusive 'sidekick' began to edge its way into the limelight.

Today, it is almost inconceivable not to mention 4K/UHD and high dynamic range (HDR) in the same breath. HDR not only provides "more pixels", but also "better pixels", and eliminates the dependence on viewing distance and screen size for 4K/UHD.

In addition, the consumer market is beginning to be inundated by devices supporting 4K/UHD HDR. This, however, cannot circumvent the fact there is a dearth of native 4K/UHD content in many countries around the world, including Asia-Pacific.

For broadcasters in the region who are still broadcasting in SD, or have fledgling HD systems, does 4K/UHD make sense from both technical and cost perspectives?

If not, what is the alternative? Cast an eye, perhaps, to a recent live trial BT Sport conducted at London's Wembley Stadium, where a Champions League football match was delivered in HD HDR to mobile devices.

HDR technology, according to Jamie Hindhaugh, COO of BT Sport, is perfect for getting the most out of the small screen in terms of colours and resolutions. And although BT Sport currently has no plans to roll out commercial HD HDR services for the big TV screen in the living room, Hindhaugh highlighted BT Sport's commitment to continue developing HD HDR.

Again, it should be highlighted that this is not a dismissal of 4K/UHD. Instead, it is a reminder that broadcasters need to exercise due diligence and study

the merits of each technology before deciding which best suits their needs and pockets. In other words, make technology work for you, and not vice versa ... but when technology is poorly implemented, this can bring more pitfalls than benefits.

Thus, nurturing right skillsets will continue to play an important role in allowing broadcasters to better understand technologies, and see how they can be integrated into existing broadcast systems.

To provide broadcasters with a sturdier foothold in the transition to IP, APB, in collaboration with systems integrator Ideal Systems, is presenting an IP Master Class at the Marina Mandarin Hotel in Singapore next month — Monday, June 25.

Entitled *Real-time Media over IP Inside a TV Facility*, the IP Master Class will be conducted by Michel Proulx, a media industry technologist. The IP Master Class is specifically designed to prepare broadcasters for the transition to IP by giving them the knowledge necessary to better understand whether IP is right for them. Participants will also hear about successful real-world IP deployments, and be offered tips on how they can successfully build up their own IP media facilities.

Regardless of whether you have begun your transition to IP, we urge you to join us in Singapore, as the IP Master Class will provide a timely platform for you to not only make a successful transition today or in the future, but also be equipped with useful knowledge on how you can best make IP work for you.

For more information on how you can be part of the APB IP Master Class, visit <https://apb-news.com/event/real-time-media-over-ip-inside-a-tv-facility-by-michel-proulx/>.

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Asia-Pacific Broadcasting (APB) has been the voice of the broadcast and multimedia industry for the past 35 years. It brings news of groundbreaking events and features interviews with decision-makers and professionals in the industry. The publication also tracks and reviews the hottest industry developments and technology trends. APB has been a partner in other major trade events worldwide, including BroadcastAsia, NAB, BIRTV, IBC, CCBN, KOBA, Inter-BEE, Broadcast India, and CASBAA Convention. With its vision and mission to become an integral part of the industry, APB has been organising CEO Roundtables, Forums & Seminars since 1999.

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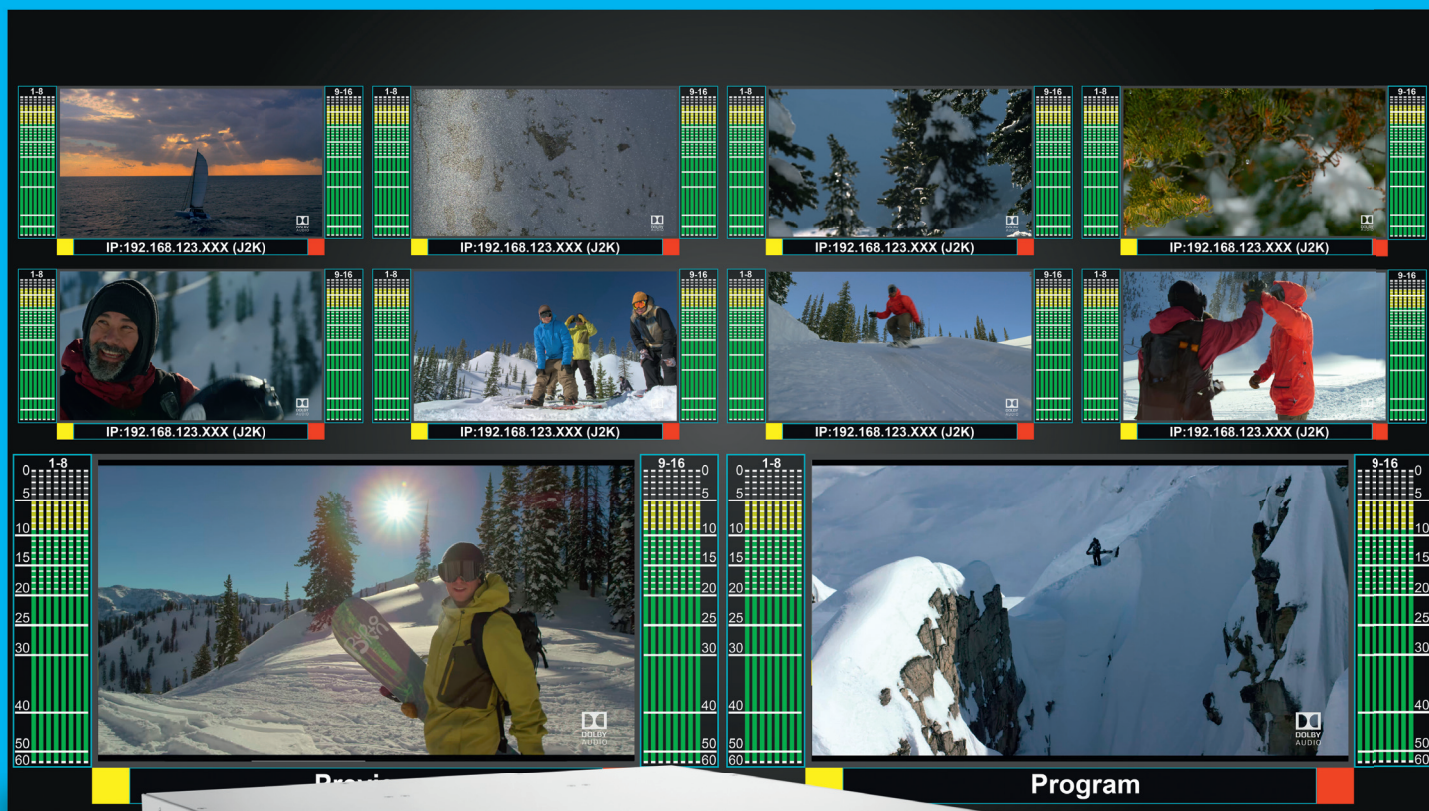
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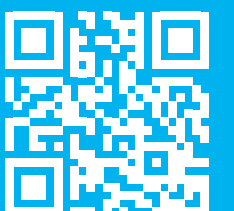
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The eyeball dollar's media battles 2018!

BY SHALU WASU

All the content that is produced around the world garners revenue mainly through the following three ways:

- 1 The projected US\$520-billion advertising spends.
- 2 The declining pay-TV subscription revenue valued at around US\$202 billion.
- 3 The increasing over-the-top (OTT) subscription revenue estimated at US\$46 billion.

There is a lot at stake, and a lot worth fighting for. As we know only too well, this space is in a flux, and battles are being waged for this revenue across multiple fronts. The popular way to describe these battles is along the following lines.

Let's take a closer look to see where things are.

Traditional pay-TV vs OTT and streaming

This is not really that much of a battle, but more of a transition. Delivering content via OTT is easier, more flexible and faster. At the same time, the infrastructure for traditional TV is already in place and, therefore, it is still cheaper to deliver content wherever that infrastructure is at present.

Having said that, making further investments in pay-TV technologies and infrastructures is similar to making new investments in the newspaper business. Even the few remaining profitable traditional publishers are reluctant to make more investments in that business.

So, while pay-TV will be around for a long time, its revenues and penetration will keep falling. Some countries that have not had a big pay-TV market, such as Indonesia and Myanmar, may completely leapfrog straight to streaming.

While traditional cable operators and TV companies are still standing strong in most markets, they will get replaced by online streaming providers like Netflix, and aggregators like Hulu and YouTube TV.

Hence, OTT and streaming will emerge as the winner.

Linear streams vs video-on-demand (VoD)

For a long time now, consumers have been consuming most of their content in the form of linear streams on TV. This is a habit that could go away quickly! It is like in the early days when newspapers went online, and users still wanted to 'flip pages' in the PDF versions. However, no one does that anymore.

The verdict? VoD will win very quickly, except in the news and live sports categories, where linear streams may still appeal to viewers.

The advertising-led model vs paid content

This is one of the most interesting battles and the one where most is at stake.

1 It's a global battle: The battle for advertising and subscription dollars is shifting from local and regional channels, broadcasters and aggregators fighting among each other, to the likes of a handful of global players such as Facebook, Google and Netflix, as well as some regional players like iflix and HOOQ in Asia.

2 It's Facebook vs Netflix: In one corner are Facebook and YouTube, the new 'free-to-air' (FTA) channels of the world. Their content is 'free', and they monetise through ads. On the other corner are the premium ads-free providers — led by Netflix, and also include Amazon Prime Video, Hulu and Spotify.

3 Premium model earns more per hour of content consumed: Facebook is one of the most effective ad supported publishers, and it makes around US\$0.07 per hour of eyeballs. For instance, if there are two billion Facebook users using the platform an hour a day, Facebook earns around US\$12 billion per quarter. Netflix, on the other hand, earns around US\$0.20 per hour of content consumed, and has more headroom to grow.

4 Content needs to be 'free' for the ad-based model to work:



“While traditional cable operators and TV companies are still standing strong in most markets, they will get replaced by online streaming providers like Netflix, and aggregators like Hulu and YouTube TV.”

The ad-based model is able to cover the cost of operations only when the content is free, and is created by users. Examples of user-generated content platforms are Facebook, Instagram and Twitter.

5 Content needs to be 'ad-free and premium' for the subscription model to work: Consumers are willing to pay a subscription fee only when there are no ads and there is premium content that is well-produced.

6 Consumers do not like ads: About 200 million consumers globally subscribe to subscription services such as Netflix and Amazon Prime Video. Although an increasing number of consumers are willing to pay for an ad-free experience, over 700 millions devices around the world have ad blockers installed.

7 Facebook Watch has been a damp squib so far: Facebook Watch, while still in its early days, is not being positioned as an 'ad-supported version of Netflix', but as another version of YouTube. This, in my opinion, is a wasted opportunity, and I will not be surprised if it evolves into a premium and standalone Netflix-like service.

8 Tough times ahead for all other content creators: Other than the top five free publishers and the top five premium publishers, all other

content creators who are not niche do not have enough volume, and who are not 'special' will struggle to monetise content — both through advertising and through subscriptions.

The winners will be the top five publishers in each category, with Netflix and Facebook the big winners. While sports content consumption is being impacted by many of the above changes, the one thing that makes it different is that, for the majority of the time, sports is consumed live.

At Eleven Sports, we are navigating through the changes above, and are continuing to expand at a breakneck pace around the world by using the following mantras:

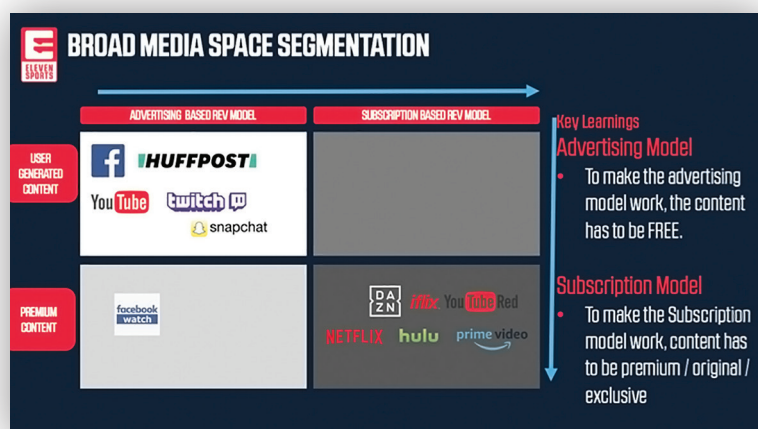
- Our content is available across multiple platforms — pay-TV, FTA, streaming as well as our own OTT service.

- We have moved quickly into streaming with our linear channels, and are now preparing to launch an event-based platform.

- We rely on multiple revenue streams, including subscriptions and sponsorships — although we lean towards subscription. **APB**

Shalu Wasu is managing director of Eleven Sports Network, and an APB panellist.

VIEW FROM THE TOP



To make the subscription model work, content has to be premium, original or exclusive, says Eleven Sports Network.

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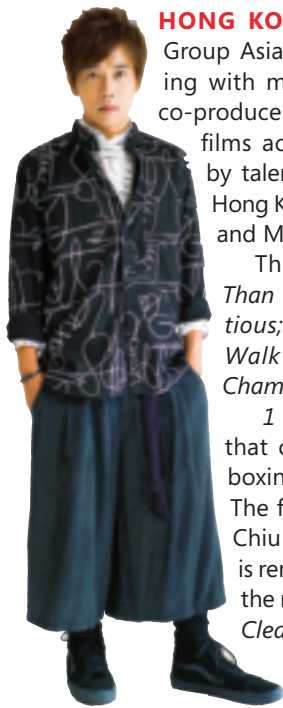
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What's on Screen

Fox-mm2 team-up to expand Chinese entertainment portfolio



HONG KONG – Fox Networks Group Asia (FNGA) is collaborating with mm2 Entertainment to co-produce six Chinese-language films across different genres, by talents and directors from Hong Kong, Taiwan, Singapore and Malaysia.

The six films are: *More Than Blue*; *Gimrls, Be Ambitious*; *Guang*; *Zombiepura*; *Walk With Me*; and *1 Sec Champ*.

1 Sec Champ is a film that combines elements of boxing, action and fantasy. The film will be directed by Chiu Hang (pictured), who is renowned for his works in the movie entitled *Vampire Cleanup Department*.

As for *Walk With Me*, it is a horror movie directed by Ryon

Lee, starring Michelle Wai and Anna Ng.

The movies will be telecast on Chinese movie channel Star Chinese Movies, as well as on the Fox+ streaming platform.

Cora Yim, SVP and head of Chinese entertainment and original production at FNGA, said: "This year, we will be increasing the volume of our original production, both films and drama series, offering Chinese audiences more choice of entertainment. I'm delighted that mm2 and FNGA both sport and nurture new talent, given that we have the opportunity to share these talents' creative vision and ideas with the industry."

MasterChef lands in Singapore



SINGAPORE – With over 10 local versions of *MasterChef* already in Asia-Pacific, the competitive cooking reality programme will be making it way into Singapore

following the agreement between Motion Content Group, a content investment and rights management company, Endemol Shine Group, the producer and distributor behind *MasterChef*, and Singapore terrestrial broadcaster, Mediacorp.

Dubbed *MasterChef Singapore*, the programme will premiere on Mediacorp's Channel 5 later this year.

Parminder Singh, chief commercial and digital officer, Mediacorp, said: "People love watching our food shows — a whole variety of them with unique flavours and cooking instructions — on our different channels. *MasterChef* has clearly struck a chord with many, and we are delighted to be able to premiere it on Channel 5, the channel that brings people in Singapore together, as well as Toggle, our digital entertainment service."

Originally created by Franc Roddam, the format was revived as *MasterChef Goes Large* in 2005 by Shine TV in the UK. To date, *MasterChef* has been adapted in 54 countries, and is seen in more than 200 countries and watched globally by over 250 million viewers.

Folklore reveals the horror side of Asia

SINGAPORE – HBO Asia has slated its new horror anthology original drama series, *Folklore*, to premiere later this year. Created by Singaporean filmmaker Eric Khoo, the six-episode horror series will take place across multiple Asian countries including Indonesia, Japan, South Korea, Malaysia, Singapore and Thailand.

Helmed by different directors from vari-

ous Asian countries, each episode will seek to modernise or update Asian horror, exploring societal dysfunctions in a manner that is specific to the country, yet possessing themes that will resonate across the continent.

Production for *Folklore* has kicked off with Joko Anwar's episode based and shot in Jakarta, followed by Khoo's episode based in Singapore, and Ho Yuhang's episode shot



From left: The directors for *Folklore* are Lee Sang-Woo, Joko Anwar, Ho Yuhang and Eric Khoo.

in Malaysia. The other three episodes will be directed by Takumi Saitoh in Japan, Pen-Ek Ratanaruang in Thailand, and Lee Sang-Woo in South Korea.



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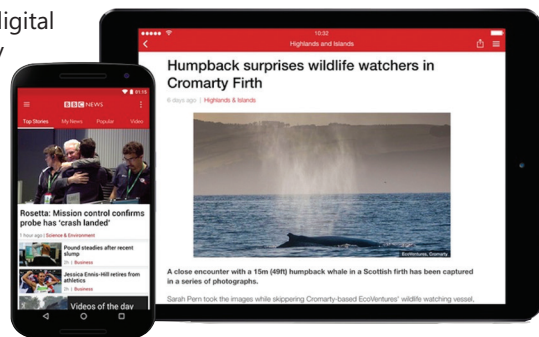
BBC overcomes digital challenges by strengthening role as trusted news media

SINGAPORE – The rise of digital disruption has impacted every aspect of TV creation and distribution, and has changed every existing relationship a media network traditionally had with its viewers.

Despite consumers now spending more time watching streaming videos than traditional TV — which is blurring the lines between linear broadcasting and non-linear delivery — BBC World News, the BBC's international news and current affairs TV channel, reached a record 99 million-weekly audience in the past 12 months, revealed Chris Davies, commercial director for BBC Global News.

He told *APB*: "Live TV is absolutely at the core of what we do at the BBC. It is certainly supported and supplemented by online and other new digital platforms, but our strategy remains unchanged in live TV as it is fundamental for our business in the news space."

Although the rise of over-the-top (OTT) services has provided consumers with an alternative to access content in different ways,



Stories available on the BBC News app are updated with news alerts, keeping consumers informed about the latest happenings that are taking place across the globe.

Davies pointed out that linear TV is where viewers will tune to — especially for news and sports — as they want to be updated on the latest happenings taking place at any specific moment, sometimes from the other side of the world.

Besides keeping live TV as the foundation of its business, the BBC has continuously evolved on new platforms. For instance, 360-degree video and virtual reality (VR) are some of the new technologies that the BBC has been working on to enrich journalism. "We're also starting to work with voice-enabled

media so that users are able to speak directly to their voice-controlled system, such as the Amazon Alexa, and ask for news updates," he added.

With its strengths in live news, the BBC has also launched the BBC News app, which combines the latest news and analysis, as well as stories behind current events, all within one place.

However, the news industry is currently shrouded in the fog of 'fake news', which is compelling news media to uphold their impartial role in providing accurate and credible news.

Davies said: "The rise of fake news is a global phenomenon, and each country needs to work out how best to tackle it. But for a news organisation like the BBC, it is our responsibility to ensure that the information we're providing to the public is true and accurate."

"This is our job, and is more important now than it has ever been, and we will continue to put out content that we believe is fair, impartial and accurate."

Join IP Master Class to simplify IP transition

1 >>

Mandarin Hotel in Singapore on Monday, June 25, this year.

Entitled *Real-time Media over IP Inside a TV Facility*, the IP Master Class will be conducted by Michel Proulx, a media industry technologist and ex-CTO of Miranda Technologies.

"The one-day event is essential learning for heads of technology who are responsible for broadcast systems and infrastructure, and will help guide them across the chasm into the world of the IP media facility," Mc Kiernan added.

Richard Bayliss, director of systems engineering, APJ, Arista Networks, believes that IP networking will bring many benefits to those broadcasters across Asia who are already considering their infrastructure evolution strategies to support higher definition content and new production workflows.

He said: "While IP networking has evolved to support the media and entertainment use cases, not all IP solutions are capable of meeting the reliability and performance required for live broadcasts."

He noted: "The critical new skills required to make the successful transition to IP-based me-

dia delivery may not exist within traditional broadcast engineering teams."

Seeing itself as a leader in IP media networks, Arista aims to simplify the IP transition and play a greater role in educating broadcasters on the common design and operational considerations that will accelerate IP projects.

This is why the company is supporting *APB*'s IP Master Class, where Paul Druce, lead systems engineer, Australia and New Zealand, Arista Networks, will present key components of an IP media network in regard to a recent real-world deployment.

Built upon Arista's

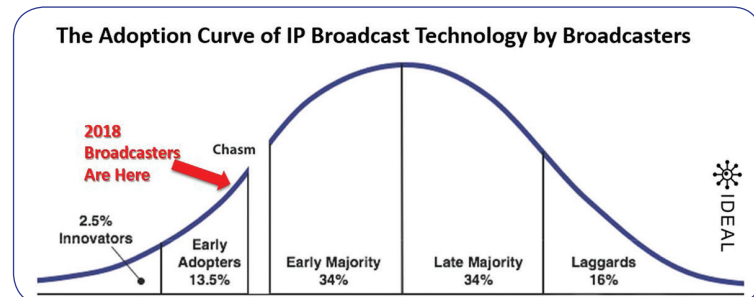
global experience in building modern infrastructure that supports the deployment of SMPTE ST 2110, NEP Australia is now deploying an all-IP SMPTE ST 2110-based remote live broadcast system.

"Not only do these new standards provide a more efficient method of transporting uncompressed broadcast essence streams, but the use of IP networks also creates new opportunities to streamline the production process itself," Bayliss concluded.

For more information on the *APB* IP Master Class, visit <https://apb-news.com/event/real-time-media-over-ip-inside-a-tv-facility-by-michel-proulx/>.



Arista Networks' Richard Bayliss: "The use of IP networks creates new opportunities to streamline the production process itself."



FIFA to produce this year's World Cup in 4K/UHD HDR

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produced in 4K/UHD HDR. According to FIFA, progressive scanning will be used as a baseline production format, and HDR will ensure "improved image quality for all media rights licensees, regardless of their delivery format".

The 4K/UHD HDR programming will be shot with a wider-framed main camera and augmented with immersive audio to offer fans an enhanced viewing experience, FIFA added.

While the combination of 4K/UHD and HDR can be a tantalising proposition, should broadcasters also consider the possibility of integrating HDR into existing HD systems?

One broadcaster that is continuing to look into the delivery of HD HDR is BT Sport, the sports TV division of the BT Group. In March 2018, BT Sport conducted a live broadcast trial, showcasing the world's "first" broadcast of a UEFA Champions League football game between Juventus and Tottenham Hotspur in HD HDR, direct to mobile.

Jamie Hindhaugh, COO of BT Sport, told *APB*: "Mobile is at the heart of BT, following our acquisition of EE, a mobile network operator, and the launch of BT Mobile in recent years, as well as the introduction of the BT Sport app."

"Going forward, mobile viewers will be an important part of our audience base, and we feel HDR has a strong future on mobile — HDR technology is perfect for getting the most out of the small screen in terms of colours and resolutions."

"HD HDR offers us the latest opportunity to extend our track record of innovation."

The live trial took place at London's Wembley Stadium, broadcasting to a beta version of the BT Sport app on a range of devices on EE's 4G mobile network.

For this live broadcast of HD HDR to mobile, BT Sport utilised a 24-camera 4K/UHD set-up at Wembley Stadium, with 17 HDR-native cameras, and the remaining seven cameras converted to HDR 10 PQ.

Suggesting that the trial has reinforced the efficiency of HD and HDR in providing a better mobile experience, Hindhaugh explained that the delivery of HD HDR is also less data-intensive for both the mobile network and the user's data consumption than 4K/UHD.

He continued: "Further, the trial showcased the powerful end-to-end capabilities of BT's Consumer division by combining EE's 4G network with BT Sport. Above all, we are pleased to report that we have received positive feedback from the media and consumers."

Although the trial is specifically targeted at mobile devices, sports fans might argue that the best match day experience, apart from being present at the stadium, is via widespread viewing with a wider group of fans — and when asked if BT Sport has any plans to bring HD HDR to TV screens, Hindhaugh revealed that the network has "no specific commercial roll-out plans" at this stage, but will continue to explore HD HDR technology.

With innovation being at the heart of BT Sport, the network has also showcased different technologies for sports production. For instance, in 2017, BT Sport broadcast the UEFA Champions League final in 4K/UHD HDR with Dolby Atmos sound on its BT TV service at a private screening in London. The match was also made available in virtual reality (VR) 360 to fans, and in 4K/UHD on YouTube, and 4K/UHD with Dolby Atmos on BT TV.

Hindhaugh reiterated: "We

"We feel HDR has a strong future on mobile — HDR technology is perfect for getting the most out of the small screen in terms of colours and resolutions."

— Jamie Hindhaugh, COO, BT Sport

feel HDR is perfect for getting the most out of the small screen. And generally, mobile is important to BT Sport's future aspiration to better serve our customers. Plus, it is worth noting the extent to which HDR-compatible handsets are now broadly available in the market."

Singapore's pay-TV operator StarHub has been offering HD sports content to subscribers across its 12 sports channels, including live coverage of the UEFA Champions League, La Liga and Formula One. StarHub has also launched StarHub Go, a streaming service designed to provide viewers with access to a wide variety of content, including live sports, on mobile devices.

Commenting on the emergence of HDR, Ong Bee Lian, vice-president of TV Engineering, StarHub, said: "Being a relatively new technology, HDR still has some way to go before it gains wider awareness and, eventually, acceptance. Nonetheless, we will continue to monitor the latest technological developments in the market to enhance our customers' viewing experience."

KOBA 2018 addresses convergence of broadcast and multimedia industries



After KOBA 2017 successfully welcomed more than 40,000 visitors, KOBA 2018 is returning to the COEX Convention and Exhibition Centre in Seoul, aiming to highlight the best in South Korean technology.

SEOUL – The convergence of technologies will take centre stage at the 28th edition of the Korea International Broadcast, Audio and Lighting Equipment Show (KOBA).

Taking place at the COEX Convention and Exhibition Centre in Seoul from May 15-18, KOBA 2018 is co-organised by the Korea Broadcasting Engineers and Technicians Association (KOBETA) and Korea E&X, and will highlight the best of South Korean broadcast technology, as well as promote the development of the country's image, sound and lighting industries.

KOBA 2018 will be held over 27,997sqm of exhibition space in three Halls. Hall A consists of pro-audio, pro-lighting and stage equipment, as well as church facilities and musical instrument sections; Hall B consists of post production, distribution and

delivery, digital content, as well as electric display, electric power unit and measuring equipment sections; and Hall D consists of the production and broadcast equipment sections.

According to the show organisers, KOBA, since its inception in 1991, has been the only multimedia exhibition in South Korea that has consistently introduced the latest updates and technologies in the multimedia industry.

This year, KOBA will address how the emergence of new media and the increasing diversity of media are contributing to the creation of different industries and demand.

Visitors can also expect to check out the latest innovations in technologies such as artificial intelligence (AI), big data, the Internet of Things (IoT), virtual reality (VR), and augmented reality (AR), among others.

Away from the exhibition floors, more than 80 international broadcast technology conference sessions will also be hosted by KOBETA, addressing key issues relating to the sound and broadcast industries.

Last year, KOBA attracted 40,191 local and overseas visitors representing 29 countries, a number the show organisers will hope to eclipse this year, as KOBA 2018 aims to provide a platform for the discussion of new concepts in broadcasting, as well as the modernisation of South Korea's video, audio and lighting industries.

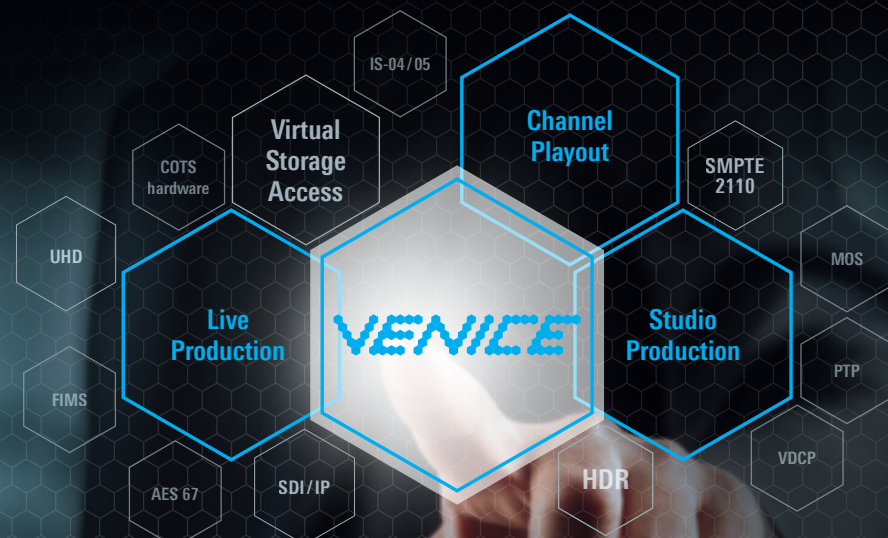
For more information on KOBA 2018, visit www.kobashow.com.

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Tencent to play leading role in reshaping traditional M&E industry

First, can you give us a brief overview of China's media and entertainment (M&E) landscape, and how do you see the industry evolving in the midst of the digital transformation?

Steve Chang: According to a CNNIC report, China mobile Internet users represent 98% of all netizens. More specifically, under the advancement of innovation and technology, the media and entertainment industry in China has brought users a better experience.

With a prosperous and growing market, the industry's border is already being blurred. Meanwhile, Chinese consumers' mindset and consumption habits are changing. For example, they are progressively willing to pay for premium content. The *2017 Internet Trends Report* published by Mary Meeker last year mentioned that Chinese consumers are increasingly willing to pay for online games, live streaming and online video.

The growing paid membership on Tencent Video is a recent example, which had a YoY growth of 121% that reached 56 million by end-2017, and has further risen to 62.59 million by the end of Feb 2018.

Being the majority in the Chinese market, young consumers are heavy smartphone users who often receive information passively during fragmented times. Therefore, apart from popular videos and animation targeted towards young people, short videos have also emerged as mainstream.

Fragmented content is delivered through the use of social media, in which they complement each other. The new social habit has created a cross-regional phenomenon where fans connect to each other based on their interests, and this is important for marketing in China in the future.

The digital transformation of China's media and entertainment industry has an inevitable relationship with "Internet+". Traditional media is facing the adjustment and transformation of its business model. Under the influence of "Internet+", not only has a new business model emerged, but products and services that meet current consumer needs and industry trends have also been created.

The digital transformation of the traditional media and entertainment industry is closely related to marketing strategy. The online media's high-quality content has been recognised by consumers. At the same time, Tencent does not

promotings

One of the biggest and fastest growing Internet and technology companies in the world, China's

Tencent offers services across the social network, music, web portals, e-commerce, mobile games, Internet services, payment systems and smartphone domains. In recent years, Tencent has also expanded its content creation and distribution business exponentially through the creation of its own original content and partnerships with key content brands around the world. APB prompts Steve Chang, corporate vice-president, Tencent, for more details.

just rely on its advantages in social media and games. We also place an emphasis on the comprehensive planning of our ecosystem, which is the key driver for the growth of Internet advertising.

The success of the business is an important factor in bringing high-quality content. Tencent relies on the core strategy of "Technology and Culture" in its planning. The pan-entertainment strategy covers seven aspects: games, information, movies, music, sports, animations and literature, offering a fully comprehensive user experience.

Today, China is the largest Internet advertising market in Asia. With the development of technology and the popularity of mobile payments, consumer behaviour is evolving towards digitisation and mobility. The application of technologies such as big data, location-based service (LBS), cloud and artificial intelligence (AI) is also supporting online-to-offline businesses for both commercial and non-commercial industries.

In the future, optimising the customer experience through full-link operations will create new business opportunities. Tencent will create a comprehensive marketing system for advertisers, continue to uphold an open attitude to provide a mature digital marketing platform for brands, meet the diversified marketing needs of brands, and achieve a win-win situation between Tencent, advertisers and users.

Can you elaborate on the Tencent Open Media Platform initiative, and how it enhances Tencent's overall content delivery network?

Chang: The Tencent Open Media Platform appears in different formats — including news, short video and social media platforms — to

“With the largest content product matrix in the world, Tencent's content satisfies users' and brands' marketing needs in broadness and depth.”

— Steve Chang, Corporate Vice-President, Tencent



better deliver content. Tencent is also developing categorisation functions, which can deliver personalised content to users.

Tencent Open Media Platform was introduced in 2013 and leverages Tencent's various subscription channels to enrich the content for users in a convenient way. For example, users can add their favourite WeChat official accounts of traditional, news and "we media" to QQ news via a subscription function. When the latest information is published, users can browse the content of the media's WeChat official accounts in the subscription channel on Tencent's websites. The integrated information platform allows users to easily obtain subscribed information from any media.

In an era of integrated channels, Tencent is operating content by cooperating with traditional media channels, such as print, broadcast and advertisement — which have great influence and notable content — as well as repu-

table and sustainable professional vertical media and digital media, We Media and MCN, to serve one billion Tencent users altogether.

In order to ensure the quality of information, Tencent not only helps users to screen duplicated data, but also assists the media with high-quality content to build up communication channels with users. Partners who join Open Platform can deliver high-quality information via Tencent's various products, so as to build up subscription relationship with users and maintain sustainable communication with users, thus enhancing revenue.

Why is it critical for Tencent to produce its own original content, and how does this strategy enable Tencent to strengthen its long-term position in the media and entertainment industry?

Chang: In 2015, Tencent announced two focus areas: Connection and Content. As one of the core businesses of Tencent, Content now covers seven areas

via "pan-entertainment", namely video, games, news, animations, music, sports and literature, as well as the creation of original Tencent content and development of IP.

In recent years, various Tencent videos have received overwhelming responses, including original drama series such as *Candle in the Tomb* and *A Love So beautiful*. National animations such as *The King's Avatar*, *Fights Break Spheres* and *The Land of Warriors* have also gained good feedback from our audiences.

QQ Sports develops IP for original games. Renowned celebrities were invited to join *Super Penguin Celebrity Game* and *Penguin Run* last year. The integration of "sports, entertainment and social" attracts citizens' attention and expands the limitless possibilities of sports marketing.

QQ News emphasises thoughts and humanised content by leveraging our own advantages to introduce high-quality content. Meanwhile, politics and financial news specifically target well-educated audiences, helping brands to reach different levels of audiences and continuously build up influence.

With the largest content product matrix in the world, Tencent's content satisfies users' and brands' marketing needs in broadness and depth. Through a professional production team, we ensure the innovation of content and collaboration with brands, producing a strong brand image by leveraging our unique IP resources.

Does Tencent have any plans to expand beyond China and into any other countries in Asia?

Chang: There is still great potential for the Internet market in China. While we will be gradually expanding our business, our content business currently focuses on the mainland Chinese market.

Speaking of global expansion, we are proactively driving cooperation with international brands such as NBA and the BBC, and partnering with six Hollywood movie studios as a video streaming company. Secondly, we provide product services, such as JOOX, a popular music streaming service targeting youths in South-east Asia. We also export our original programmes abroad, covering 10 ASEAN countries, Hong Kong, Macau and North America.

Therefore, we are optimistic about our opportunities and development in the international market, and will continue our global expansion.

Convergence of broadcast and media reunites at 2018 NAB Show



BY JOSEPHINE TAN

LAS VEGAS – Broadcasters are standing on the shoulders of the innovators, creators and storytellers, whose creativity, passion and energy are allowing the industry to see broadcasting as it could be in the future, said NAB president and CEO, Gordon Smith.

In his keynote address at 2018 NAB Show, Smith highlighted: “We have inherited so much from those broadcasters before us, and continue to learn from those in the present. And, standing on the shoulders of these giants, we can imagine a brighter future than we could on our own.

“I believe the future lies in investing in the innovation that is crucial to our long-term growth, so that broadcasters can always be there for the communities anywhere they are, and always for free. There is no better or more reliable resource for information during



The 2018 NAB Show was held from April 7-12 at the Las Vegas Convention Centre, USA.

times of crisis than broadcast stations. But, we also recognise that consumers’ media consumption habits are always changing, and

we continue to evolve with these changes.”

Weeks after its announcement, the acquisition of Snell Advanced

Media (SAM) by Belden — the parent organisation of Grass Valley — was one of the most discussed topics among exhibitors and at-

tendees on the show floor.

At Grass Valley’s show presentation, the company stressed that the combination of Grass Valley and SAM will provide media companies with “more choice, freedom and opportunity”.

According to Grass Valley, the acquisition of SAM will allow customers to navigate the cluttered vendor landscape, and expand the company’s reach into more geographical regions. Now that Grass Valley has brought SAM live production solutions under its umbrella, the combined portfolio will be able to provide media companies with more options when outfitting their studios.

Grass Valley demonstrated multiple live production solutions, including the DirectIP+ remote production solution. Mark Hilton, vice-president of live production, Grass Valley, said: “DirectIP+ enables broadcasters to manage at-home production from any distance, and reduce bandwidth requirements between cameras

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Showing off smart production & helping broadcasters transit to IP

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and XCU cradles so broadcasters can link any camera to any XCU."

Grass Valley also showcased LiveTouch, a multi-camera replay platform. Designed for sports and fast-motion entertainment replay environments, LiveTouch can be scaled to meet HD, 3G and 4K/ Ultra HD (UHD) productions. It features an intuitive touchscreen control panel for highlight selection, playlist editing, and live play-out control.

Systems integrator Magna Systems and Engineering, recently supplied a custom vision mixing solution for the Australian department of Parliamentary Services (DPS). The solution is based on Grass Valley's Korona V Series vision mixers, and will be installed in all of DPS' eight production control rooms.

DPS' new Grass Valley Korona K-Frame V-series systems are designed for low- and mid-range broadcast and media applications, enabling DPS to manage both SD and HD productions. More importantly, the vision mixers are equipped with the ability to produce in 3G/1080p, and are 4K/UHD-ready for parliamentary broadcasting.

At the Rohde & Schwarz booth, the company expanded its R&S Venice media server platform for live and studio productions and channel playout applications.

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Equipped with virtual storage access (VSA) technology in ensuring "reliable transmission", R&S Venice is enhanced with support for the SMPTE ST 2110 video over IP standard, NMOS and SDI.

Suggesting that creativity is one aspect that keeps the media industry more diverse, Tim Felstead, director of strategic and operational marketing, Rohde & Schwarz, explained that the advancement of technology has enabled the change of consumer behaviour, resulting in the change of operators' business models. However, he emphasised that the demand for linear TV is still strong, especially in sports, as widespread viewing experience is still the preferred mode of media consumption for viewers to gather together to catch a live match.

"Smart Production" was once again Ross Video's theme at the show. The company exhibited Ultrix-FR5, a routing/AV processing platform. Now available in a 5RU 144x144 form-factor, Ultrix is able to replace up to five racks of traditional infrastructure products, providing savings in cost energy and cabling, said Stuart Russell, senior communications manager for Ross Video.

Ultrix's feature set offers SD, HD and 3G routing with 12G 4K/UHD software, 3072x3072 audio

and embedded audio processing. It is also equipped with internal gearboxing to integrate with Quadlink/4K signals into a native 12G workflow and up to 24 independent multiviewer heads.

Russell further revealed that Ultrix IP is currently in development, and Ross Video is planning to ship it before the end of this year. He elaborated: "Bringing IP I/O to Ultrix opens up a number of different applications and uses for the product, such as a mid-sized IP hybrid core facility router, an IP to SDI processing gateway, an IP frame sync farm, as IP connected multiviewers, an IP clean switcher, IP audio processing engine or IP-SDI bridge. And, because it supports both SMPTE ST 2022 and ST 2110, it's an IP encapsulation converter as well."

Lawo was also at the show to help broadcasters transit to IP with its vm_dmv64-4 IP multiviewer. Complementing Lawo's existing vm_mv16-4 and vm_mv24-4 multiviewer line-up, the new vm_dmv64-4 virtual module for Lawo's V_matrix IP routing, processing and multiviewing platform is integrated with support for IP and SDI sources in 4K/UHD, 3G, HD and SD.

The company also displayed the third generation of the mc²56 mixing console, which incorporates key features drawn from Lawo's mc²96 flagship console. Optimised for IP video production environments, the new mc²56 has full



Creativity is a key aspect that keeps the media industry more diverse, Tim Felstead, director of strategic and operational marketing, Rohde & Schwarz, suggested.

native support for SMPTE ST 2110, AES67/Ravenna and Dante.

The mc²56 is available in frames from 16 to 112 faders, and supports up to 8192x8192 crosspoints, 888 digital signal processing channels, 144 summing buses, and 128 aux buses at 44.1-96kHz operation. With a 64-fader surface suited to most outside broadcast (OB) vehicle dimensions, a 16-fader stand-alone extender may be added to an mc²56 for subsequent expansion at any time.

Playing a critical part in connecting computers and workstations via IP within broadcast facilities are KVM (keyboard, video, mouse) solutions providers like Guntermann & Drunck (G&D), which has been developing and expanding its KVM-over-IP technology. However, until now, its portfolio included only one extender system based on KVM-over-IP technology.

One important aspect which G&D identified as having been previously missing is the possibility of switching, which is now addressed with the addition of the ControlCenter-IP as a central appliance. The additional network integration of the ControlCenter-IP turns the extender systems, which have only implemented a point-to-point connection between computer and workstation over IP, into a KVM matrix. Now, every connected workstation can be granted access to any computer connected to the KVM system.

Besides giving basic administration with user and rights management, the device also provides several control room features from

monitoring, scripting and scenario switching to allow collaboration and the integration of video walls, up to CrossDisplay-Switching for intuitive operation at multi-monitor workstations.

On display at Adder Technology's booth was the ADDERLink Infinity 100T (ALIF100T), an IP-based, USB-powered KVM transmitter that enables the use of IT infrastructure to extend computers away from the user environment.

As the newest member to the ADDERLink Infinity range, the ALIF100T can be hung from the back of the source, and can be retrofitted into existing infrastructure. In addition, the ALIF100T is designed to reduce power consumption by using only 2W, which ensures less heat is generated and less cooling is required, therefore reducing costs.

Another KVM solutions provider, IHSE, highlighted its new series of Draco ultra KVM extenders, based on the Lici video codec, that is able to accommodate a full range of video standards. Developed in partnership with the Fraunhofer Institute for Integrated Circuits, Lici provides the "highest possible" efficiency in video, audio and data transmission, said IHSE. The Draco ultra extenders include models that support HDMI 1.3; dual-head, dual-link DVI; DisplayPort 1.1 4K30; 24-bit, 4:4:4; and DVI-I.

IHSE also demonstrated the programmable 444 Series Draco keyboard, a plug-and-play device that can be connected to a keyboard, mouse, and keypad to a KVM system through a single USB port. The remaining USB



Lawo's smartDASH system monitoring and real-time telemetry dashboard, and the vm_dmv64-4 IP multiviewer, were some of the solutions Andreas Hilmer, director of marketing and communications, Lawo, presented to help broadcasters transit to IP.



Carlos Yanez (left) and Jochen Bauer of Guntermann & Drunck (G&D) demonstrated the efficiencies brought forth by the company's ControlCenter-IP solution.

port on the extender CON unit allows simultaneous connection of another USB HID device, while an expansion option allows for an additional 25-button programmable keypad to programme single commands or macros.

GatesAir, which is attempting to help broadcast engineers to remotely manage and secure mission-critical RF and IP systems to support next-generation media delivery networks, focused on the future of control and monitoring in a wireless transmission system, and demonstrated a new networking solution to secure data backhaul over IP networks.

Newly unveiled are HTML5-based graphical user interfaces (GUIs) for its Maxiva transmitters. In addition, the company



also demonstrated how its new Intraplex IPConnect solution can establish "reliable and secure" network connections to the control elements of TV transmitters and excitors, allowing broadcasters to transport Web, SNMP and other remote control traffic.

Rich Redmond, chief product officer for GatesAir, commented: "The IPConnect demonstration correlates with the advanced transmitter security features introduced through our new HTML5 user interfaces, which prevents outside intrusions more effectively. Together, these advances ensure operators are protected as they progress through repack and towards

ATSC3.0, while our HTML5-based GUIs will offer intuitive system navigation, and a responsive interface for monitoring from tablets and smartphones."

On display at the AJA Video Systems booth was the new IPR-10G-HDMI mini-converter, which has the ability to convert SMPTE ST 2110 IP video/audio to HDMI. Besides providing monitoring of HD SMPTE ST 2110 signals via HDMI, IPR-10G-HDMI is also able to receive SMPTE ST 2110 signals over 10GbE connectivity, and format the data for output on an HDMI interface.

Alongside the IPR-10G-HDMI, AJA offered a preview of its new HDR Image Analyser. Designed as a high dynamic range (HDR) monitoring solution, HDR Image



Ron Wong, product and technical manager for IHSE, highlighted the Draco tera KVM switch, which is available in eight, 16, 32, 48, 64 and 80 ports, to support small and mid-sized media installations.

Analyser can be deployed for monitoring and analysing of HDR formats, including perceptual quantiser (PQ), hybrid log gamma (HLG), and Rec.2020 for 4K/UHD workflows.

HDR Image Analyser combines AJA's video and audio I/O with HDR analysis tools from Colorfront. This is the second technology collaboration between AJA and Colorfront, following the successful integration of Colourfront Engine into AJA's FS-HDR last year. Other features of the HDR Image Analyser include advanced out-

of-gamut and out-of-brightness detection with error intolerance, CIE graph, vectorscope, waveform, histogram and data analyser with pixel picker.

Apart from IP, HDR is another technology that has been gaining adoption in the media industry, said Poh Cheng Yong, vice-president, sales, Asia, Postium Asia. "2018 will be the year for technologies like 4K/UHD and HDR, which focus on enhancing picture quality. HDR, for instance, has been gaining interest among media companies

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in the US, South Korea, Japan and China."

The South Korean broadcast equipment supplier released the OBM-X310 broadcast monitor, which is integrated with 4K/UHD and HDR support. Designed for production and post-production colour grading, the OBM-X310 supports various HDR gamma curves, such as PQ, HLG, and S-Log3. Other features of the OBM-X310 include WCG and 3D-LUT for "accurate" colour reproduction.

Celebrating its centennial anniversary is Panasonic, which exhibited the AK-UC4000 4K/UHD HDR studio camera. Compatible with a 2/3 lens mount, AK-UC4000 features a newly developed large 4.4K sensor and is packed with new functions such as HDR, BT.2020, and high-speed shooting. With this HDR support, cinematographers are able to capture "rich gradation" to render contrast, colour and shadow in dark image areas that could not previously be reproduced due to blackout, thus resulting in a "more realistic" image quality, said Panasonic.

The Japanese broadcast equipment manufacturer also demonstrated VariCam LT V. 6.0 CineLive firmware update, which features the addition of multi-camera capability. The V. 6.0 firmware brings broadcast shading and multi-camera control, plus tally and return video management, to the VariCam LT camera. This update will allow cinematographers to shoot with CineLive on VariCam LT cameras, bringing VariCam image quality and colour science to multi-camera environments, and creating cinematic shallow depth of field with VariCam's Super 35mm sensor.

Another supporter of HDR is ARRI, which has been integrating HDR support across its digital cameras — such as Alexa 65, Alexa, Alexa Mini, and Amira — since 2010.

ARRI showcased a complete camera system that is based on

a large-format 4K/UHD version of the Alexa sensor. The camera package comprises the Alexa LF camera, ARRI Signature Prime lenses, LPL lens mount and PL-to-LPL adapter. Alexa LF features native 4K/UHD recording capability, empowering cinematographers to explore a large-format aesthetic while retaining the sensor's natural colourimetry, and can be deployed for HDR and WCG workflows.

And with the slogan "Bigger, Brighter, Better", ARRI also announced Firmware 4 update for its SkyPanels lights. The latest Firmware update offers new features for advanced control including extended colour control; light engine DMX control; four additional pre-programmed lighting effects; x,y coordinate colour selection via the on-board control panel; and stage mode for dimming to zero in live audience applications.

For Litepanels, a brand of the Vitec Production Solutions division, the company released a firmware update for Gemini, its 2x1 soft panel. The new Gemini firmware includes a new Lighting Effects mode for adding the following effects: TV, emergency, lights, lightning, fire, hue burst, paparazzi, fireworks, party lights, pulsing, square and strobe. All effects are customisable, providing users with the ability to

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control rate, colour, depth and other factors when crafting a look.

In addition to the new Lighting Effects mode, the 2x1 Gemini soft panel includes four additional lighting modes: Correlated Colour Temperature (CCT) mode for bi-colour with +/- green adjustment; a new RGBW mode that allows independent adjustment of red, green, blue and white; hue saturation and intensity (HSI) control for full-colour and saturation control; and Gel mode that provides users the ability to dial up a variety of gels.

Meanwhile, Miller Camera Support announced that its CompassX Fluid Head Series (CX) has commenced shipping worldwide. The CompassX series is available in five diverse models — CX2, CX6, CX8, CX10 and CX18 — and incorporates Miller's CB Plus enabling technology.

CB Plus offers 16 positions of counterbalance with a selection system. The counterbalance radial selector has eight steps, allowing users to find the approximate amount of counterbalance required. Moreover, the CB Plus switch enables the addition of half a step providing even more "precise" balance.

Riedel's Bolero wireless intercom solution celebrated its first birthday with new features and standalone operation capability. The Bolero Standalone Application is available as a licence-enabled upgrade that provides several performance enhancements along with standalone capabilities.

For instance, antennas can be daisy-chained to each other in a line or a redundant ring via a low-latency, synchronised TDM network. The Bolero Standalone Application also comes with a single-RU, half-width external interface box, with six analogue 4-wires and three GPIOs, and can be directly connected to any antenna and then patched into an existing intercom system.

Other new capabilities provided by the Bolero update include individual rotary programming, bluetooth headset support, and a new belt pack QuickMute feature that allows users to set the volume of all channels to zero.

For Dejero, the company aims to enhance transportation of video from the field through HEVC/H.265 video compression standard. Combining this standard with its auto-transport and adaptive bitrate (ABR) encoding technology, Dejero developed the EnGo mobile transmitters and PathWay rack-mounted encoders/transmitters.

PathWay is designed for installation in newsgathering and remote production vehicles or in fixed locations, and allow users to have the option of blending cellular connectivity with an Ethernet or Wi-Fi connection. For additional reliability in the field, users can deploy PathWay as part of the Dejero CellSat solution to automatically blend cellular and Ku-band IP satellite connectivity from Intelsat.

As for EnGo, the mobile transmitter can be camera- or vehicle-mounted, or used as a wearable for live event broadcasting from remote locations. Equipped with adaptive HEVC/H.265 encoding, EnGo is able to blend up to eight network connections, thus allowing users to broadcast live from virtually anywhere, even when in motion.

To enhance the delivery of linear broadcast video for IPTV, cable, satellite and over-the-top (OTT) applications, ARRIS developed the ME-7000 converged compression platform. Combining ASIC-based compression technologies, coupled with ARRIS video pre-processing software enhancements, the ME-7000 provides multi-codec support of HEVC/H.265, MPEG-4 AVC and MPEG-2 encoding.

Furthermore, ME-7000 features 24 HD and 96 SD channels per 1RU



With content at the heart of MediaGeniX, the company's flagship WHAT'S'ON solution is able to help media companies manage complex multi-format workflows, said Wouter Verheylezoon, senior business consultant and product owner, MediaGeniX.

chassis, and is able to manage output formats in 4K/UHD, HD, SD or multi-bitrate (MBR) transcoding for ABR multi-screen IP video delivery.

ARRIS also collaborated with Cadent, a TV advertising network, to demonstrate an integrated, dynamic advertising solution that supports both QAM set-top boxes (STBs) and IP devices. The solution enables cross-platform ad insertion, client measurement and video delivery combined with cross-platform ad management.

The ARRIS Manifest Delivery Controller (MDC) performs network-based ad insertion, while Cadent provides a campaign management and ad decision service that unifies the business side under one system. This, according to both companies, allows for both traditional zone-based ad targeting and impression-based targeting using demographic data on any device.

At the Imagine Communications booth, the company introduced xG Scorecard, an analytics and business intelligence (BI) tool. Designed to empower media companies to make advertising sales and programming decisions, xG Scorecard enables operators to concentrate all data relevant to optimising their business into a single view that can be customised to meet the needs of specific users.

Joe Khodeir, vice-president of sales, Asia-Pacific, Imagine Communications, elaborated: "The expansion of content distribution options has made it difficult for media companies to easily and accurately track consumption and

demographic data, inhibiting their ability to maximise advertising revenue. This brings forward the requirement of more target advertising, as today's media companies need a holistic approach on selling ads with audiences profiles."

xG Scorecard combines data from traditional sales and traffic systems, operational databases, rating, clickstream, and even social networks to build a holistic view of audiences with insights. It also provides an interactive display that brings together information from across the business, and enables ad-support media companies to explore, interpret, customise and organise data.

Exhibiting at the NAB Show for the ninth year, Edgeware brought along its new product for personalised TV commercials, the Edgeware Ad Enabler, which adds precision to commercials.

With the implementation of Ad Enabler, the live stream, including the SCTE-35 markers, will first be ingested into the Edgeware Origin. The Ad Enabler will then detect the SCTE-35 markers and perform "frame-accurate" segmentation to ensure that the length of the segments correspond with the length of the ad break. Next, the segmented stream is repackaged based on the client device into the requested ABR format in the manifest, and the manifest is then delivered to the client or the ad stitching system.

VSN, a software development company providing solutions for the broadcast and media sector,

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by Michel Proulx

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demonstrated VSNE Explorer MAM, an enhanced version of its media asset management software (MAM). VSN has integrated its editing tool, Wedit, and other new functionalities such as voiceover capability, to VSNE Explorer MAM.

Wedit is a tool developed in HTML5 that allows journalists and editors to edit videos and prepare them for broadcast from a single interface. And now with advanced editing and voiceover capabilities included in the Wedit tool, users will be able to record voiceover tracks to the timeline, while pre-viewing the sequence proxy video with frame accuracy, said Nick Morgan, sales director for Asia-Pacific, VSN.

The latest version of Wedit also allow users to drag-and-drop existing audio assets into the timeline, and display the waveform pictures of each audio track to improve the user experience. Morgan continued: "As a result, users will save time when editing their final news and videos, thereby becoming more efficient and being able to meet tight deadlines."

Meanwhile, Vizrt showcased the latest version of Viz Story, equipped with a cloud-based workflow for journalists to search, edit and publish media. Viz Story allows media companies to create compelling video stories with 3D graphics, and distribute to online and social media platforms.

Viz Story incorporates Vizrt's meta-graphics workflow when using the Viz Story plug-in in a newsroom control system. Meta-graphics offer storage of graphics up to the time of playout, and allows editors and journalists to save the graphics metadata

alongside newly-edited video, saving both to a MAM system. Other key features of Viz Story include a browser-based workflow, keyframed clip panning, timeline editing and Facebook Text on Video.

Merging both linear and on-demand programming into one content workflow is MediaGeniX, who urge media companies to reinvent their business models in order to meet new viewer expectations, and all the complex workflows that this entails.

At the show, MediaGeniX highlighted WHAT'S ON, its broadcast management system, which is designed to streamline the entire content lifecycle into one workflow. In managing multi-format workflows, the WHAT'S ON software solution has the ability to manage from budget plan to fully fledged playlists, and schedule content automatically in line with rights, regulations, business rules, branding and marketing targets. Globo, Discovery Communications, A+E Networks and Viacom are some of the international media networks that have deployed WHAT'S ON to maximise their content lifecycle for both video-on-demand (VoD) and linear scheduling.

Interra Systems is another company that aims to help media companies to deliver live and VoD content across all screens in the most efficient and cost-effective manner possible. The company offered its Orion-OTT, a software-based OTT solution, for monitoring of ABR content for quality and compliance.

The latest version of Orion-OTT features an edge performance monitor (EPM) for end-to-end monitoring. EPM can be integrated with third-party device monitors to



collect QoE parameters for management of issues. Additionally, Orion-OTT includes a new origin performance monitor for active and passive monitoring of origin servers, with the ability to monitor average response time and bandwidth served, server availability, and HTTP response codecs.

Anupama Anantharaman, vice-president, product marketing and business development, Interra Systems, said: "This year, we are focusing on extending video quality, and all the other aspects surrounding video. The industry has seen the emergence of OTT, which, in turn, prompts media companies to customise their content offerings to individuals instead of traditionally targeting the market as a whole."

Alongside Orion-OTT, Interra Systems also displayed the newest version of its Baton QC solution, which leverages artificial intelligence (AI) and machine learning-based advanced algorithms. The Baton file-based QC solution includes support for VAST protocol, hybrid QC workflows, as well as enhanced support for HDR content, and audio language detection capabilities.

Ooyala showcased its Flex Media Platform, an open and extensible content production and delivery platform that is designed to simplify and streamline the process of managing, curating, orchestrating, publishing, analysing and monetising video content. With an integrated content supply chain ecosystem like the Flex Media

Platform, media companies can harness the metadata that runs throughout all stages of operations to create and deliver the targeted content that they need today, said Ooyala.

The company has also collaborated with Avid to integrate the Flex Media Platform into Avid MediaCentral. This integration, according to both companies, empowers users with advanced metadata modeling using metadata aggregated from a variety of sources. Media assets can be transferred from cloud-based storage to existing Avid production environments.

For Avid, the company unveiled Avid On Demand, a cloud services and solutions platform that provides media production capabilities on-demand. Avid On Demand enables creative teams to manage and deliver content to any device anywhere, and empowers them to automate many content transformation and QC tasks, and auto-provision the level of cloud resources needed to complete a job.

Avid On Demand includes the new Avid AI suite, which applies machine learning and cognitive services to production workflows. This new suite of Avid and third-party capabilities automates content indexing, such as closed captioning verification, language detection, facial recognition, scene detection and speech-to-text conversion.

Furthermore, the Avid On Demand cloud solution also includes Shared Library On Demand for storing, sharing, and accessing indexed content libraries. Also new, Editorial On Demand enables editing teams to share folders, projects, bins and media for greater collaboration.

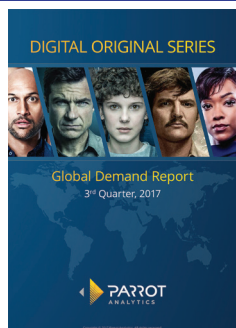


White Paper @ www.apb-news.com

❖ Demand as the new paradigm

In this eighth edition of Parrot Analytics' Digital Original Series Global Demand report, the demand for 30 recent, popular or otherwise interesting digital original series in 10 global markets is analysed.

The purpose of the report is also to provide the industry with global insights into the demand for these shows, backed by empirical data for the first time.



2018 **Calendar of Events**

MAY

May 15 - 18
KOBA 2018
COEX Exhibition Centre, Seoul, South Korea
www.kobashow.com

JUNE

June 5 - 8
IEEE INTERNATIONAL SYMPOSIUM 2018
Valencia, Spain
<https://bts.ieee.org>

June 25
IP MASTER CLASS - AN APB SPECIAL EVENT
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June 26 - 28

BROADCASTASIA2018
Suntec Singapore
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June 26 - 28

COMMUNICASIA2018
Marina Bay Sands, Singapore
www.communicasia.com/

AUGUST

August 22 - 25
BIRTV 2018
China International Exhibition Center, Beijing
www.birtv.com

SEPTEMBER

September 13 - 18
IBC 2018
RAI Amsterdam
The Netherlands
www.ibc.org

OCTOBER

October 2 - 4
APSCC 2018
Shangri-La Hotel
Jakarta, Indonesia
www.apsc.or.kr

October 9 - 11

IEEE BROADCAST SYMPOSIUM (BTS)
Keybridge Marriott Arlington, VA, USA
www.bts.ieee.org/

October 25 - 27

BROADCAST INDIA 2018
Bombay Exhibition Centre, Goregaon, Mumbai, India
www.apsc.or.kr

October 30 - November 1

CASBAA CONVENTION 2018
Hong Kong
www.casbaa.com

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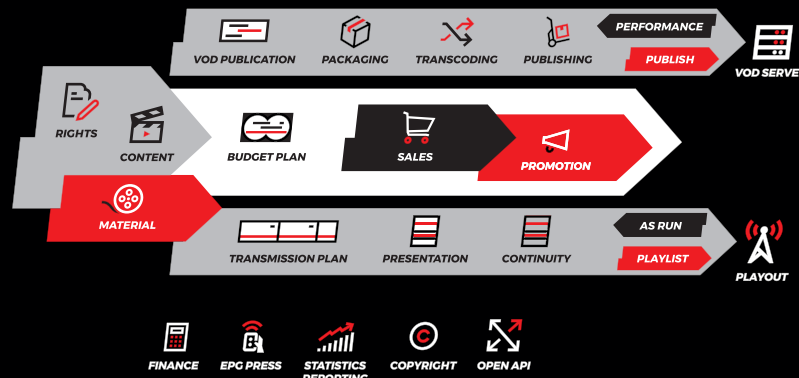
November 14 - 16
INTER BEE 2018
Makuhari Messe, Tokyo, Japan
www.inter-bee.com

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APB CREATION

Michael Dosch to lead product management for Lawo Radio



Lawo has appointed Michael Dosch as senior product manager, Radio OnAir. He succeeds Stephan Türkay, who assumes the position of senior product manager,

Networked Audio. In his new role, Dosch will manage Lawo's entire portfolio of radio products, which includes a variety of physical mixing surfaces, audio processing and routing engines, next-generation virtual radio software, as well as networked audio nodes that use the AES67/Ravenna standard.

Stage Tec now part of Ravenna

Stage Tec, a Berlin-based manufacturer of professional audio mixing consoles and routers, has become the latest manufacturer to join the Ravenna partnership. The Ravenna technology supports real-time distribution of audio and other media content in IP-based network environments. With its engagement in Ravenna, Stage Tec will be able to provide an even wider spectrum of IP solutions to its customers, said Helmut Jahne, CEO of Stage Tec. "We have been providing IP-based technology since 2012 with the Nexus Dante card XDIP. With the launch of our RIF67 router interface last year, Stage Tec also offers IP audio transport via AES67."

Next Month @ Creation

Broadcast AoIP Networking Solutions

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Shooting through the prism of the most advanced camera lenses

In the world of media production, camera operators have been innovating by adding new elements in shooting scenes. And as **Josephine Tan** discovers, camera lenses, used in conjunction with a camera system, are helping to turn every second into a long-lasting moment.



ARRI has introduced 16 large-format Signature Prime lenses, ranging from 12mm-280mm, which are integrated with the company's LDS-2 Lens Data System, which offers high data rates and encoders for fast initialising.

Every picture tells a story. And behind every image capture by the camera, it is only completed with the lens — a transmissive optical device that brings the world into focus. Through the array of glass pieces within the lens, cinematographers are able to capture different types of shots — from portrait to panoramic photography — empowering them to add more creative control into digital cinematography.

The era of digital cinematography has brought forth the feature of large-format sensor. While a larger sensor generally provides higher resolution by including more pixels, it also has the potential to capture a wider range of colours and skin tones.

For instance, ARRI has introduced a complete camera system that is based on a large-format 4K/Ultra HD (UHD) version of the Alexa sensor. The camera package comprises the Alexa LF camera, ARRI Signature Prime lenses, LPL lens mount and PL-to-LPL adapter.

Equipped with native 4K/UHD recording capability, the Alexa LF camera, according to ARRI, enables filmmakers to explore a large-format aesthetic while retaining the sensor's natural colourimetry, "pleasing skin tones", and suitability for

high dynamic range (HDR) and wide colour gamut (WCG) workflows.

Accompanying the Alexa LF camera are 16 large-format ARRI Signature Prime lenses, ranging from 12mm-280mm, and fitted with the ARRI LPL mount. Besides the ability to exemplify optical precision, the Signature Prime lenses is able to render "organic, emotionally engaging" images while "softening and texturing" the large format, said ARRI.

Dan Lausten, ASC, DFF, who is renowned for his work on *The Shape of Water* fantasy drama film, is among a number of cinematographers who have shot with the Alexa LF camera and Signature Prime lenses. He says: "We were trying to tell a story about wideness and freedom; the Alexa LF worked really well. The depth of field is so small, creating its own world."

"The lenses are lightweight and are not too sharp, but with a certain softness and very specific. With the 25mm lens, you feel like you are there in the scene with the actors."

Another cinematographer who has shot with the ARRI system prior to its release was Wang Yu, who used it to explore the atmospheric studio and creative inspirations of the Chinese artist and furniture-maker, Shao Fan. Wang

explains: "The camera and lens captured every tonal nuance with unmatched detail, gradation and colour. I love how the out-of-focus areas are rendered, contributing to a rich and vivid overall look."

Additionally, the Signature Prime lenses also feature LDS-2, ARRI's next-generation Lens Data System (LDS). LDS was first introduced in 2000 with the LDS Ultra Prime and Master Prime lens series, then used in combination with ARRI's film cameras. As a companion for visual-effects work, LDS was later incorporated into ARRI's digital camera systems, including the Alexa series of cameras.

LDS is designed to describe digital lens settings. Lenses with LDS functionality are able to deliver information about its current settings — such as focus, iris and zoom — to the camera; the camera then interprets these values and transmits the information to its recording module.

Shooting wide open with ARRI Signature Prime lenses for shallow focus and "gorgeous bokeh", French cinematographer, Matias Boucard, worked with natural light and available sources when he tried out the new system in Thailand. Describing the Alexa LF camera and Signature Prime lenses as an "elegant combination", he adds that the combination "strikes a wonderful balance between modernity and character".

The Zeiss' CP.3 family is the latest innovation from Zeiss to support creative filmmaking, and features an interchangeable mount system and full-frame coverage.



Digital technologies have transformed traditional filmmaking and refashioned the industry with latest innovations being introduced into both production and post-production spaces. For Zeiss, the company aims to "turn imagination into a motion picture" via the introduction of the Zeiss Compact Prime CP.3 and CP.3 XD lenses.

Ranging from 15mm-135mm, the 10 focal lengths available in the Zeiss Compact Prime CP.3 or CP.3 XD series are capable of covering applications from wide-angle to telephoto. The Zeiss CP.3 lenses feature advanced lens coatings to support HDR projects, painted lens rims, and light traps within the barrel to eliminate undesired veiling glare and flares. The result, according to Zeiss, is higher contrast, richer blacks and more saturated colours.

To allow fast changeover of equipment while empowering filmmakers with creative freedom, Zeiss Compact Prime CP.3 and CP.3 XD lenses are embodied with a "compact and lightweight" design. The lenses enable filmmakers to use different stabilising systems and to have a compact set-up that is suitable for shooting in narrow spaces and for capturing dynamic shots. Filmmakers are able to deploy the lenses for handheld, gimbal, drone and Steadicam applications.

Zeiss Compact Prime CP.3 and CP.3 XD lenses are also integrated with the Zeiss eXtended Data technology, which is designed to simplify and increase the accuracy of the image capture and processing workflow. Zeiss eXtended Data is equipped with the ability to unify two data sets: key lens data based on the open/i* technology standards, and Zeiss lens data that contains "precise" lens characteristics.

In addition to providing information about the lens' distortion and shading characteristics, the documentation of the lens'

Digital technologies have transformed traditional filmmaking and refashioned the industry with latest innovations being introduced into both production and post-production spaces.

characteristics also enhances creativity by allowing more complex shots to be managed in post production. Particularly in post production, Zeiss eXtended Data offers benefits such as image fine-tuning, editing and colour grading, visual effects, virtual reality (VR) and augmented reality (AR), multi-cam live productions, projection and 3D imaging.

Christophe Casenave, product manager, motion picture, Zeiss, tells APB: "The eXtended Data technology allows the filmmaker to record valuable lens data on-set for a more efficient post-production workflow. For instance, when integrating CGIs, it is important for the compositing department to know the focusing distance and the depth of field, so that they can match the CGI with reality. This information is provided by the lens, and is recorded into the video stream.

"Furthermore, Zeiss has embedded other lens characteristics such as distortion and vignetting, which will be recorded and passed to compositing. For example, in the scenario where green screen shots are embedded with two video streams, these features are able to simplify heavily, the stitching of scenes."

Another photography and imaging company is Fujifilm, who recently installed 22 Fujinon 4K/UHD HDR TV lenses at BBC Studioworks, a commercial subsidiary of the BBC. Since the opening of its studio and post-production facility at Television Centre in London last September, *Strictly Come Dancing*, *It Takes Two*, and *The Jonathan Ross Show*,

are some of the first BBC productions to be recorded at the facility.

The facility is set up for 4K/UHD and HDR

productions with the installation of a new fleet of TV cameras, screens and switchers. For this project, 22 Fujinon 4K/UHD HDR TV lenses were also installed, enabling productions to be shot in both 4K/UHD and HDR. The full Fujinon kit provided includes two Fujinon UA80x9 1.2x EXT, five Fujinon UA14x4.5BE, and 15 Fujinon UA27x6.5BE lenses.

Incorporating a 1.2x extender in the existing UA80x9, the UA80x9 1.2 zoom lens is designed to support 4K/UHD, high contrast and HDR across the entire zoom range. In addition, using the 1.2x extender, it covers the final length from 10.8mm in wide angle to 864mm in telephoto, enabling even further telephoto recording in relay broadcasting of sports and concerts.

The UA14x4.5BE is packed in a "compact lightweight" package, and is able to cover the "ultra" wide-angle focal length of 4.5mm. Equipped with support for 4K/UHD compatibility across the zoom range, the UA14x4.5BE is able to achieve "natural bokeh" with the adoption of nine aperture basis, says Fujifilm.

As for the UA27x6.5, it is a 4K/UHD-compatible 27x zoom lens that is designed for in-studio applications such as news and variety programmes. With the wide-angle focal length of 6.5mm, it can also be used to provide a full view of a concert venue in live coverage. The UA27x6.5 is integrated with a built-in extender, which doubles its focal lengths, covering up to 360mm in focal length while maintaining image quality.

Elom Bell, procurement manager at BBC Studioworks, comments: "Television Centre needs to offer our clients the very latest technologies, with full capability of hosting 4K/UHD and HDR productions. In the case of the lenses we provide, we need to ensure they last for many years to come. Fujinon delivered on time and spent a whole day on site, helping to test and configure all of the lenses."

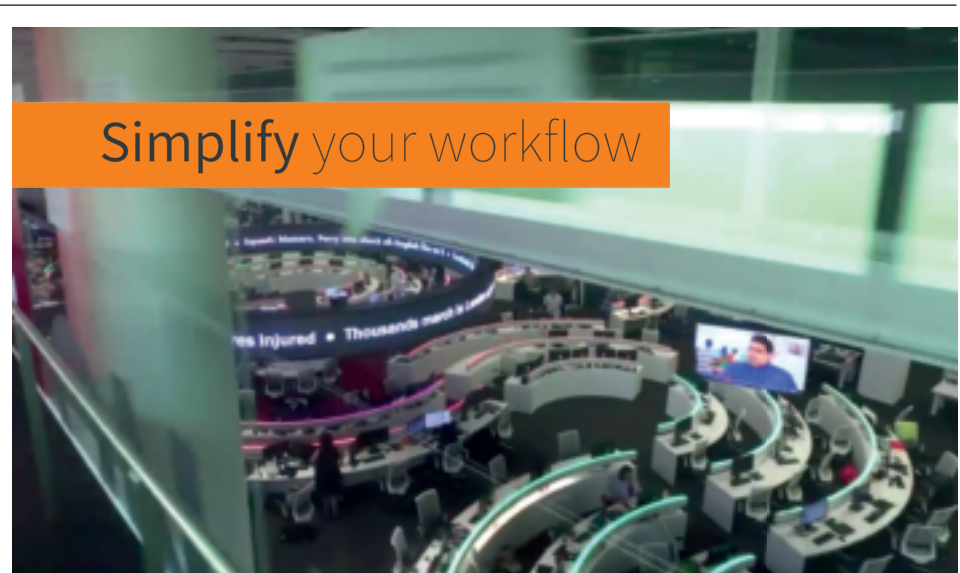
And in catering to the cinematography market, Fujifilm has launched two cinema lenses — MKX18-55mm T2.9 and MKX50-135mm T2.9 — for its X Mount cameras. The MKX18-55mm is able to cover a focal distance from 27mm-84mm, and the MKX50-135mm covers a focal distance from 76mm-206mm. Combined with the X Series' colour reproduction technology, Fujifilm adds that the MKX lenses further broaden the expression for video shooting.

Simon Becker, national sales manager optical, Fujinon Optical Devices for Fujifilm Australia, concludes: "The growing cinematography market has moved to large sensor cameras requiring high-quality, lightweight zooms for speed, high-resolution and creativity in the expanding 4K/UHD market.

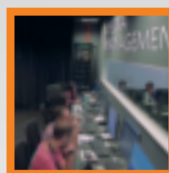
"Fujifilm and Fujinon dedicate a great deal of resources to research and development for all our lenses and optical products. Moving forward, Fujinon lenses will answer the needs of the market, and if history has taught us anything, this means our lenses will be faster, and offer even better quality to produce better results." APB



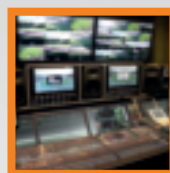
Fujifilm's MKX50-135mm covers a focal distance from 76mm-206mm, and has T2.9 aperture across the entire zoom range, which facilitates the style of bokeh effect with shallow depth-of-field.



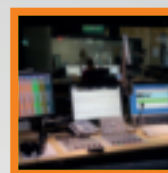
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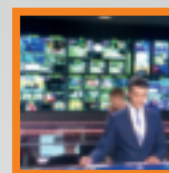
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APB MANAGEMENT

HBO picks Wazee Digital for archiving needs

HBO is using the Wazee Digital Core cloud-native digital asset management platform to digitise and archive sports content currently stored in endangered videotape formats. In doing so, HBO can preserve its deteriorating content while providing access to the archive for stakeholders who need that content. Michael Castro, vice-president of HBO, said: "Many of HBO Sports' assets are on legacy tape formats that need to be migrated to digital because the physical formats are deteriorating, and the videotape machines that play them back are quickly becoming extinct. ... Through Wazee Digital, we are rediscovering these historic moments and making them available for future use."

NexGuard watermarks KT Skylife's content

South Korean satellite broadcaster KT Skylife is leveraging the NexGuard watermarking technology to meet studio requirements for the protection of high-value content. A Nagra customer since 2010, KT Skylife can now meet forensic watermarking requirements mandated by MovieLab's Enhanced Content Protection for premium content, including 4K/Ultra HD (UHD) and high dynamic range. Nagra's NexGuard forensic watermarking technology adds a unique, invisible identifier to video content delivered to set-top boxes, smart TVs and other video players. It embeds a unique watermark for any video shown, making it the only way to tracing illicit re-distribution back to a specific content.

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Managing Director - Media
Nielsen

How broadcasters are still 'switched on' to live production needs

Some things just never go out of vogue. As multiple formats emerge to present more technical and operational challenges, production switchers continue to be the heartbeat of any live production environment. **Shawn Liew reports.**



Ross Video's line-up of production switchers include the Carbonite Black, which has been joined by the new Carbonite Black Solo 13, a self-contained production switcher and hardware panel combination with 13 inputs and six outputs.

At a time when Ontario-based Ross Video is highlighting its commitment to the live production sector with its new "Living Live!" branding, its very first product range is still playing a key role.

Les O'Reilly, marketing product manager for production switchers, Ross Video, tells *APB*: "Ross started out as a switcher company in 1974 and we've obviously grown and diversified a great deal since then, but production switchers remain an incredibly important part of our business. Production switchers also remain one of the key pieces of equipment during a live production environment."

At the recent 2018 NAB Show, Ross Video introduced versions 8 and 13 respectively of its Acuity and Carbonite switchers, as well as launched the Carbonite Black Solo 13. This new product, said the company, is a self-contained production switcher and hardware panel combination with 13 inputs and six outputs, giving users more I/O to work with in productions. It also retains the form factor of the Carbonite Black Solo.

And to allow customers to better understand its full range of production switchers, Ross Video started in February this year the first of a series of four production switcher webinars.

Some of the key topics discussed, O'Reilly reveals, included the role switchers play in both HD and 4K/Ultra HD (UHD) productions.

On the latter, he elaborates: "4K/UHD



"Ross started out as a switcher company in 1974 and we've obviously grown and diversified a great deal since then, but production switchers remain an incredibly important part of our business."

— Les O'Reilly, Marketing Product Manager for Production Switchers, Ross Video

productions are most than just about picture resolution. We have many customers looking at multiple methods of transport — quad-link 3G in both QSD and 2SI variants; quad link carried over IP connectivity in QSD and 2SI; and 12G single link that has interested many

small and medium installations where the benefits of SDI can still be valuable."

IP, O'Reilly accesses, is also becoming prevalent in HD workflows, when installations are able to pack dense amounts of data on fewer cable, and where connectivity scale can create system architectures that are able to exceed the sizes that a conventional SDI router is capable of achieving.

Connecting these discussions, is another hot topic — high dynamic range (HDR). "Yet again, we have an issue about production and delivery formats, along with 'vendor'-specific models that are not necessarily an 'industry standard,'" O'Reilly argues. "Having to support these different models is not an issue for a production switcher since the inputs all come in as SDI 10-bit video. We just need to process the pixels."

The problem arises, he points out, when all of the input modes do not match, and thus need to be made to match. In this instance, a transmission output is required, O'Reilly says, illustrating: "[HDR] transmission to the home may be done in Hybrid Log Gamma (HLG) 709 because you do not want two separate channels — one to support HDR in a format that is not compatible with standard dynamic range (SDR) monitors, and another that would be an SDR channel."

Calling Ross Video an "evolving product company" offering software- and field-programmable gate array (FPGA)-based solutions, he highlights how this



XVS-9000, Sony's new live production switcher, supports SMPTE ST 2110 and 12G-SDI in 4K/UHD, as well as a hybrid system of both.

approach allows the company to adapt to the latest technology trends by releasing timely new features on their switcher platforms. For instance, Ross Video is actively working on solutions required for the different modes and profiles of HDR, while new software and firmware allowed the delivery of full 4K/UHD solutions for customers.

O'Reilly continues: "With 12G-SDI, it did require some new hardware but for our modular solutions like the Acuity, existing customers could swap out their I/O modules for these new single-link cards.

"The frame did not need to be changed and this shows the kind of approach we bring to system design. Our customers who need the flexibility of moving between HD/3G and 4K/UHD can achieve this with software upgrades, while the move to a single-link 12G-SDI requires minimal hardware upgrades."

While Ross Video offers products tailored to specific applications, most of them also offer the flexibility to be applied across multiple applications. Citing the company's production switchers, O'Reilly says: "When customers have an application that needs more than 12 external sources, they shift from a Graphite, which has Xpression clip players and internal CG channels, into a Carbonite series switcher that offers a larger I/O.

"When the system needs the switcher to have more than 36 inputs, that is where the scale into an Acuity begins, along with the ability to build out a system in a modular fashion to tailor to design specifics."

A recently launched production switcher designed to address the demands of 4K/UHD and HD productions as HDR content becomes more popular is the Sony XVS-9000.

Offering up to 80 inputs and 40 outputs in 4K/UHD and up to 160 inputs and 80 outputs in HD, the XVS-9000 supports SMPTE ST 2110 and 12G-SDI in 4K/UHD, as well as a hybrid system of both. A core part of the company's strategy, according to Sony, is a commitment to delivering fully interoperable solutions that are ready to be implemented today.

This is why the XVS-9000 not only supports SMPTE ST 2110 and the AMWA NMOS Device Discovery specification, but also offers 12G-SDI interfaces in order to provide greater choice to users.

Hiroyuki Takahama, assistant general manager, content creation solutions marketing, professional solutions Asia Pacific (PSAP), Sony Corporation of Hong Kong, adds: "The need for 4K/UHD production is increasing across the globe. We are committed to enabling our customers to build brands and audiences through engaging content, and the XVS-9000 will join a strong portfolio of solutions to meet the needs of 4K/UHD production and IP live transmission with the choice of the latest interface."

To be made available this October, the XVS-9000 features a larger capacity processor with "evolved signal processing technology" to handle live 4K/UHD video sources. It also inherits the functionality and operability of Sony's XVS series, including the modular ICP-X7000 panel with OLED display.

Up to four newly developed 4K/UHD DME boards can be installed into one XVS-9000 switcher, enabling users to configure up to four channels of 4K/UHD 3D DME for live production with a variety of video effects. The new 4K/UHD DME boards are compatible with the XVS series, allowing two channels of 4K/UHD DME to be configured in the cur-

rent XVS-8000.

Like its predecessors, the XVS-9000 is equipped with resource-sharing functionality, where users can allocate the resources of one single processor unit — such as inputs/outputs and mix-effect — to several programme productions simultaneously. This, says Sony, creates a virtual environment with several switchers, allowing the configuration of a scalable and flexible system depending on production schedule while being operated by a single switcher.

For Panasonic, the company is supporting IP-based workflows through the AV-HLC100 live production centre, which combines a 1M/E switcher, remote camera controller (up to eight cameras), graphics overlays, streaming/recording and audio mixer functions.

According to Panasonic, the Live Production Centre facilitates video and audio creation where a limited number of operators are available, such as live streaming and live event video production. The AV-HLC100 is also equipped with NewTek's Network Device Interface (NDI) technology, acting as a hybrid device that bridges baseband inputs and outputs — with NDI inputs and outputs allowing users to transition to IP.

Kazunori Masamura, chief, Panasonic Corporation, Connected Solutions Company, Media Entertainment Business Division, Product Strategy Planning Department, tells APB: "Previously, Panasonic's focus was on develop-

“Previously, Panasonic's focus was on developing hardware-based switchers, but we came to realise that IP technology improves workflows dramatically.”

— Kazunori Masamura, Chief, Panasonic Corporation, Connected Solutions Company, Media Entertainment Business Division, Product Strategy Planning Department



Panasonic is supporting IP-based workflows through the AV-HLC100 live production centre (shown in the background), which combines a 1M/E switcher, remote camera controller (up to eight cameras), graphics overlays, streaming/recording and audio mixer functions.

It is time, even for those still working in HD, to start considering 4K/UHD products, including switchers.

ing hardware-based switchers, but we came to realise that IP technology improves workflows dramatically, such as easy installation, live streaming without extra PCs, and multiple control functions.

"Having worked with NewTek to connect Tricaster with Panasonic pan-tilt-zoom (PTZ) cameras for a long time, we decided to select NDI for the AV-HLC100. NDI is a unique technology with low latency, reasonable bitrate and excellent compatibility with software. And because there are many partners using NDI technology, our customers can, at a reasonable price, build an NDI system with existing components."

For remote camera operation, the AV-HLC100's connections and settings can be easily executed using the Easy IP connection function, which is fully automatic if the connection is to an NDI-enabled camera. PTZ and focus operations can be performed with one hand using a joystick or two hands in combination with a dedicated zoom lever and focus/iris knobs.

The AV-HLC100 also works directly with Panasonic PTZ and systems cameras, discovering and deploying them automatically using IP video transport, although user can also choose to work in SDI.

Masamura also recommends those working in 4K/UHD to consider the AV-HLC100. Demand for 4K/UHD is increasing in the US, Europe and Japan, and is a trend that is being expanded worldwide, he added, before advising: "There are many 4K/UHD interfaces (I/F) in the world — single SDI, multiple SDI, IP, HDMI, and so on. However, there is no one strong standard yet, and we recommend that our customers study and pick the most suitable

I/F for their systems."

It is time, even for those still working in HD, to start considering 4K/UHD products, including switchers, Masamura suggests, while highlighting an increasingly software-based approach adopted by Panasonic. "We have been developing hardware-based switchers, which offers high stability with low latency. They are very important for live production; however, it is difficult to add new functions without a hardware change.

"The AV-HLC100 is a software-based switcher that makes it easy to add new functions without a hardware change. We will continue to listen to our customers in order to improve our products to satisfy their needs."

The production switcher will continue to play a critical role in live production, says Ross Video's O'Reilly. In Asia-Pacific, he sees an increase in production across different verticals, and across diverse content types. The emergence of e-sports and the increase in mobile productions also require more complex features and reliability, and as production switchers represent a relatively long-term investment, several factors should be considered before a purchase is made.

O'Reilly elaborates: "Customers would want, firstly, to purchase a product from a stable and reliable manufacturer, like Ross Video, who has been manufacturing production switchers for more than four decades.

"Other factors include how the production switcher can help improve production in the technical, creative and business sense. Gone are the days when a selection is based just on the number of I/Os, keys and MLEs."

Perhaps more importantly, consider the technical advantages that the product has in terms of features, ease-of-use, integration with other equipment, workflow and the ecosystem around it. "Creativity ties in closely with the technical advantages," O'Reilly continues. "How flexible and how much more can you get out of the equipment? The quality of production will determine if the user is able to capture and engage audiences."

And last but not least, what is the business sense of the investment?, he asks. "There may be more cost-effective products in the market at the point of purchase, but reliability, long-term cost of ownership, and after-sales support are just some considerations that will make a long-term business impact." **APB**

APB

DISTRIBUTION



Thaicom, Canal+ sign capacity deal in Myanmar

Satellite operator Thaicom has signed a multi-year agreement with Canal+ Overseas Myanmar. As part of its launch of a new pay-TV, direct-to-home (DTH) service platform, Canal+ Overseas Myanmar has leased four transponders on the Thaicom-6 satellite. On the Ku-band broadcast platform, Canal+ Overseas Myanmar will deliver a new bouquet of a preliminary 80 channels.

LiveU launches global IP satellite service

LiveU is combining its HEVC/H.265 bonding technology with satellite connectivity. This, according to the company, gives users a hybrid live solution that fits their production needs, streamline workflows and simplifies the billing structure. Mike Savello, VP of sales (Americas), LiveU, said: "Customers of LiveU's award-winning LU600 can now, not only broadcast double the number of hours with the same data using HEVC/H.265 encoding, but also have the ability to include a satellite connection (fly-away or drive-away options) whenever it is desired, without needing a reservation or getting multiple bills from different providers."

Next Month @ Distribution
IP-based Remote Production

PANELLISTS



Martin Coleman
Executive Director
Satellite Interference
Reduction Group



Amitabh Kumar
Director, Corporate
Zee Network



Shalu Wasu
Managing Director
Eleven Sports Network

Fibre providing the pipeline for broadcast transmission

Whether in-facility or in live production environments, fibre has replaced copper as the connectivity matrix for multiple broadcast applications. **Shawn Liew** finds out more.



Riedel continues to be at the forefront of being able to maximise the use of fibre for live productions with solutions such as the Mediornet MicroN.

M

any of the connection speeds required today are no longer feasible on copper, making fibre the cabling of the future, declares Cameron O'Neill, director, APAC, Riedel Communications.

Fibre, he tells *APB*, will also play a key role for IP in live production, which has been given a major shot in the arm with the ratification of many of the standards within SMPTE ST-2110. "To me, the older SMPTE ST2022-6 was basically 'SDI by another name' — same payload, but transported over Ethernet instead of coax cable," O'Neill continues. "But 2110 is different; video, audio and data are all separated but synchronised on a single network. It means you are no longer sending unseeded audio to your vision switcher or video to your audio console."

This, he explains, can significantly lower the amount of bandwidth that is required in some applications. "Even a '12G' 4K/Ultra HD (UHD) stream takes less bandwidth than 10G when it's only handling video signals."

And O'Neill is convinced that Riedel continues to be at the forefront of being able to maximise the use of fibre for live productions, for both broadcasts and live events. The company, he reminds, has always been a fibre-based company, long before IP was even a discussion topic. "The Artist Fibre Ring for intercom

was around even before Dante was ever being tested. Riedel's Mediornet brought network topologies and distributed routing over fibre to the market in 2009."

And while SMPTE ST-2110 is arguably a game changer, Riedel also sees it as "just another signal" that needs to be moved between devices. At IBC 2017, the company demonstrated the MicroN IP, a software update for the Mediornet MicroN frame, which has four times 2110 converters on board. "It's a great gateway between legacy SDI, existing Mediornet networks and 2110," O'Neill explains. "We highlighted MicroN IP again at NAB Show this year, alongside our NMOS controller."

One often overlooked aspect of the IP/fibre discussion, he adds, is how to actually find a connect devices on a network. "In a traditional router, this is easy. A traditional router's CPU knows where each input and output physically exists, so it can easily make the connection.

"But when you use an IP network, that information is shared across a number of possibly independent switches, devices or computers."

This, O'Neill suggests, is where the door opens for the NMOS protocol from the Advanced Media Workflow Association (AMWS). NMOS contains three components: device discovery, connections man-



“Finding devices and connecting their signals over a network are factors that are crucial in the new IP world, where it's hard to imagine using anything but fibre.”

— **Cameron O'Neill, Director, APAC, Riedel Communications**

agement and network management, of which Riedel is focusing on the first two. “Finding devices and connecting their signals over a network are factors that are crucial in the new IP world, where it’s hard to imagine using anything but fibre,” he says. “Connections are already at the 10/40Gb range on most devices (a 40Gb QSFP is effectively 4x10G SFPs bonded together) and we saw the first 25/100Gb devices at this year’s NAB Show.”

IP, O’Neill believes, is beginning to come of age, compared to as recently as 2017. “If you asked me this time last year what I thought about IP, I would have said that we’re only really pretending at this point,” he ponders. “Sure, some signals were being converted into formats such as SMPTE 2022-6, but they were still being routed and processed like SDI signals.”

Today, there are high-level installations that use switchers instead of video routers. And while O’Neill believes that it will take some time before people fully make the transition, telcos are already able to provide enough bandwidth for a true remote production.

This is exciting, he says, as it is going to allow the utilisation of equipment to really be ramped up in the future. “Incidentally, I think full utilisation of investments will be one of the biggest challenges for content creators and equipment buyers over the next five years.”

As for how fibre infrastructures can be best set up, O’Neill offers a simplistic approach: “The rule is to install only fibre, and install twice as much as you think you will need! And as a side note, if anyone tells you to install multi-mode fibre, get them out as quickly as you can. There are practically no devices that use multi-mode fibre anymore, because it simply can’t support the bandwidths that single mode can.”

As for copper cabling, it is becoming obsolete — in most instances, fibre is much cheaper than copper cabling, strand-for-strand, and a strand of fibre can offer 50 times the signal density that a coaxial cable does, O’Neill points out, while describing a proliferation of “anything-over-fibre” devices. “It doesn’t matter if the device is a pure electrical-to-optical (EO) converter, a proprietary system (like Mediornet) or an IP network — there is no signal that you’re using today that can’t be sent over fibre.”

He goes on to illustrate how most camera manufacturers are now offering some form of camera-to-CCU connection that can go purely over fibre. Even for



Lynx Technik's greenMachine provides two fibre ports, a feature also prominent in the company's yellowbrik products — all geared towards supporting different bandwidths in IP infrastructures.

Copper cabling is becoming obsolete — in most instances, fibre is much cheaper than copper cabling, strand-for-strand, and a strand of fibre can offer 50 times the signal density that a coaxial cable does.

those who do not, camera cable-to-LC converters are readily available. And for sound consoles, the majority comes with a stage box of some kind that supports fibre connections.

“There is no good reason to be running copper cable for anything other than power,” O’Neill reiterates. “If you are building a new facility, make sure you install fibre points in every corner of the stage floor.”

“Then, just buy the break-out boxes you need, instead of patch bays. Just think of all patch bays that are wired up, fixed to a wall, and hardly ever used. Wouldn’t it be more efficient and cost-effective to have a ‘throw down box’ of some type that can plug directly into a fibre point on the wall? Today, it might be a mic rack, tomorrow a camera, and next week, a return video feed for a director.”

He also advocates for a policy of “buying smart”, in contrast to “buying cheap”, and to challenge the assumptions that have kept TV stations running for the past 50 years. “As all of us face tighter budgets and increased demand for high-quality content from our customers, we’ll have to focus on utilisation of all of our infrastructure. This include not just cameras and vision mixers, but also cabling. In other words, if you have cabling that is sitting idle, you’re basically throwing money away.”

The competition of the future, O’Neill concludes, will not be coming from familiar sources like other TV stations or outside broadcast (OB) providers with similar equipment. Instead, it will be the Googles or Netflixes of the world, backed by large amounts of capital. “They will be able to make the choice to get the best systems available, and TV stations who do not adapt fast enough are setting themselves up to fail.”

Another company that is pro-

viding support for an IP world is Lynx Technik, which announced itself as a member of the Alliance for IP Media Solutions (AIMS) earlier this year. This, says Sebastian Schaffrath, CTIO of Lynx Technik, is an “obvious move” as SMPTE ST 2110 proves itself as the *de facto* standard for uncompressed video over IP.

“With greenMachine, Lynx Technik provides a versatile software-based processing platform that is ideally suited for both SDI and IP infrastructures. A SMPTE ST 2110-capable version of greenMachine has already been tested by some customers using Lynx Technik’s app-based processing, as well as AWA NMOS control of greenMachine,” he adds.

greenMachine is Lynx Technik’s concept of a video and audio processing platform. The processing hardware is a generic processing unit with a certain set of inputs and outputs, as well as processing power. By installing different apps, the greenMachine units can be turned into a tailored processing unit.

Its hardware also provides two fibre ports, a feature also prominent in Lynx Technik’s yellowbrik products, as the company looks to support different bandwidths in IP infrastructures. “Customers planning new infrastructures are already looking at 25GbE and 100GbE, and using 10GbE for edge devices,” says Schaffrath. “IP-based infrastructures will see tremendous growth in the coming years as customers have started with

initial IP infrastructures, while real greenfield projects are rare.”

Migrating existing infrastructures will be a major challenge, he acknowledges, while highlighting how Lynx Technik is continuing to develop products to facilitate the migration from SDI to IP. “As a provider of processing infrastructure, Lynx will also be a central processing and core component in a facility.”

In live production environments, greenMachine enables operators to distribute signal processing power across several hardware systems, thus eliminating a single point of failure. “In live production environments, security and fail-over safety is critical, which determines the choice of redundancy; for example, SMPTE 2022-7, as well as the choice of signal types; for example, 2-SI UHD versus square-division UHD connections,” Schaffrath concludes.

For Bexel, an NEP Broadcast Services Company, fibre optics continues to be a core speciality offering, and represents a key area of growth. The company supply custom announce booth kits with fibre solutions that can handle multiple video, audio and data signals.

In a recent expansion of its fibre-optic rental inventory, Bexel invested in a quarter of a million feet of fibre-optic cable. This ranges from TAC-4 to TAC-72 strand cable, plus SMPTE camera cable, as well as fibre transport solutions from Multidyne and Studio Technologies.

Tom Dickinson, vice-president, technology, Bexel, explains: “Fibre optic has grown as a core component of any production as HD and, now, 4K/UHD require increased bandwidth beyond copper cable. Extended cable lengths and increased signal count are increasing the demand for higher capacity fibre optic.”

One of the key components of Bexel’s recent investment is the acquisition of Multidyne

SilverBULLET fibre transport solutions, designed for the transmission of SD, HD, 3G and 12G-SDI signals on a single-mode fibre. Bexel is also now deploying the VF9000 fibre transport system with 12 HD 3G-SDI and one Ethernet path over two strands of fibre. For conversion and re-conversion back to SMPTE standards, the Multidyne “Hut SMPTE to tactical fibre cable” has been added to Bexel’s HDX Shed fibre inventory.

As for Bexel’s fibre strategy when it comes to the transition to IP, Dickinson says: “Fibre signals are a conversion of an electrical signal to optical for long distance and increased signal capacity. IP is an easy transition; it is just another electrical signal.

“One reason for the purchase of the Multidyne solutions is that they provide an Ethernet channel — a basic building block for some IP signals.”

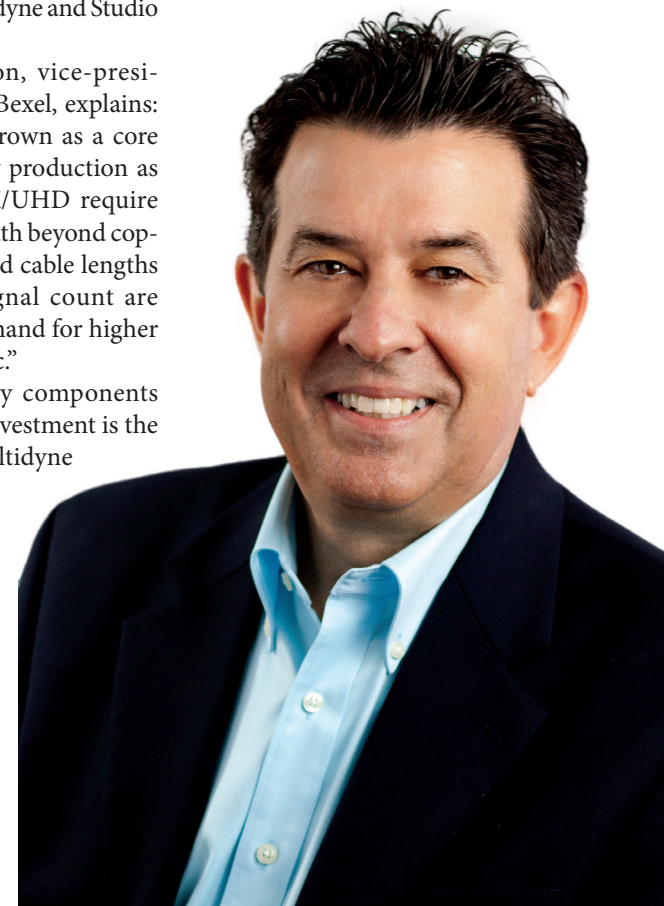
And to prove the effectiveness of fibre in a live set-up, Bexel recently provided fibre-optic hardware, cable and engineering for the coverage of the National Basketball Association (NBA) All Star Game in Los Angeles.

Dickinson elaborates: “Bexel’s primary fibre responsibility during the game was to design, implement, manage and maintain all video signal transport from the broadcast compound to inside and around the Staples Centre.

“We managed more than 500 individual fibre strands during the week, consisting of Tac-72, Tac-48, Tac-24 and Tac-12 ST/ST cables. In addition to the fibre-optic paths, we provided a variety of hardware components to facilitate the signal movement between mobile units, studio set locations, court-side camera positions and executive screening areas.” **APB**

“Fibre optic has grown as a core component of any productions as HD and, now, 4K/UHD require increased bandwidth beyond copper cable.”

**— Tom Dickinson,
Vice-President, Technology, Bexel**





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Cybersecurity concerns in the satellite industry – how vulnerable are you?

BY TOMAŽ LOVSIN

Imagine reading this headline: *Major news channels and 13 other TV channels hacked at playout centre.*

Thankfully, it is pure fiction and completely made up. But the title, though written in a yellow paper-style, carries a grave warning. Just imagine a targeted attack on one of the larger teleports, playout centres or satellite operators. In fact, can you really imagine such a scenario?

The year 2017 saw some of the biggest cyber threats in recent history, with millions of consumers and thousands of businesses affected by everything from the WannaCry attack to the Equifax and Uber data breaches.

Gartner reports that worldwide, information security spending will reach US\$86.4 billion by the end of 2017, and the *2017 Cybercrime Report* anticipates cybercrime damages to cost the world \$6 tril-

As most, if not all, of a teleport's or playout centre's infrastructure is already based on IP, the question of cybersecurity inherently increases its importance.

lion annually by 2021.

As most, if not all, of a teleport's or playout centre's infrastructure is already based on IP, the question of cybersecurity inherently increases its importance. The threat of various malware needs to be taken seriously and our industry will indeed need to focus more and more on the issue and address it sooner rather than later. The ostrich approach of burying our heads in the sand simply will not work here.

What about the (in)famous cloud? Can it be a safe haven? Unfortunately not, and it is likely that ransomware or other malware will not only continue to reign terror on the world, it will likely do so from the cloud. Because cloud computing businesses store huge

amounts of data for companies, they actually make prime targets for cybercriminals.

The growth of the Internet of Things (IoT) has also been phenomenal for innovation. The IoT alone has played a humongous part in transportation route planning, accident prevention, safety and even the development of the autonomous car.

In our homes, the rise of Alexa, Cortana and Siri home devices have simplified ordering and ushered in a new era of voice control. Smart fridges, toasters and homes — almost everything is "smart" and connected to the Internet nowadays.

The bad news is that every connection is a doorway, and that is

exactly what attackers are looking for. In 2016, hackers used an army of connected Web of devices to shut down the Internet in major parts of the US, in what has now been called the Dyn DDoS Attack. Because many IoT products are manufactured with poor security, they become easy targets for deploying malicious software. And when you coordinate an attack between a million of them, the results can be catastrophic.

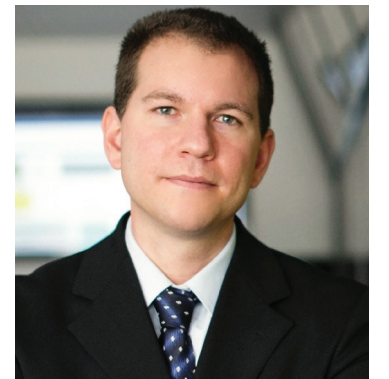
Traditionally, cybersecurity has been about the "fortress metaphor", whereby intruders are kept at bay by building high walls and deep moats. Unfortunately, the reality of the world we live in now means that no matter how high the wall, malicious actors can simply build a higher ladder — or hire somebody to do it for them.

So what does this mean for our industry? What we can do is enhance awareness, education and training of our employees and IT staff. Our employees are on the

front lines of this cybercrime battle and one avoided click can save hours of down time for IT. At the same time, our solutions need to evolve with the threats and provide multiple layers of protection.

With the New Year, we have a fresh start and a new security page to write for 2018!

For more information about STN, visit www.stn.eu.



Tomaž Lovsin is CTO of STN, a provider of satellite and teleport services.

Arianspace ready to provide launch pad for satellite launches in APAC

In Asia-Pacific, the business of broadcasting content over satellite continues to promise a rosy future filled with opportunities, suggested Vivian Quenet, managing director and head of sales, Asia-Pacific, Arianspace.

Quenet, who joined the satellite launch services provider earlier this year, told APB: "In regions such as Europe and the US, everything can basically be connected via terrestrial networks. This, however, is not the case in Asia-Pacific.

"If you look at countries like Malaysia, Indonesia and the Philippines, which are interspersed with many islands, it is very difficult to put in place a cable or fibre network. If you want to deliver content, it is still easier to do so via satellite."

Quenet also believes that a lot of the advantages that terrestrial networks — such as speed and latency — had over satellite have now fallen by the wayside, in part due to emerging technologies.

He identified these as inclusive of high throughput satellites (HTS), Ka-band, adaptive code modulation and optical links between satellites that can compete with fibre. "For example, a link between Japan and New York could be faster over satellite thanks to optical link than it would be over fibre," Quenet explained. "This is relevant because if you combine this with artificial intelligence (AI) and machine learning, the competitive advantage you are going to gain is the faster speed of sending information from point A to B."

Another advantage that ter-

restrial networks had over satellite, was latency, or lack thereof. This, he suggested, is being gradually addressed by low-Earth orbit (LEO) constellations. "With no latency and a link faster than fibre, HTS is helping to compete against 4G, and maybe 5G in the future. You also have new constellations, which, beyond integrating new technologies, also provide global coverage, which no mobile network has ever addressed."

With these in mind, Arianspace is targeting a record number of launches this year; last year, the company carried out 11 successful launches, signed 19 additional launch contracts, including three for the Vega C and Arian 6 launchers.

Ariane 6 and Vega C, according to Arianspace, will benefit from the opportunities offered by satellite global connectivity projects and Earth observation systems — within a context that forecasts "unprecedented growth" in the space sector over the next two decades.



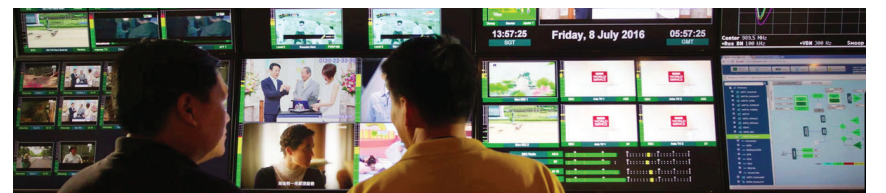
Vivian Quenet, the newly appointed managing director and head of sales, Asia-Pacific, Arianspace, believes that satellite will continue to have a prominent role in Asia-Pacific, including in the transmission of broadcast content.

In Asia-Pacific, these platforms will also allow broadcasters and telecommunication companies to launch new satellites at a very affordable price, and be very flexible in offering their services, highlighted Quenet.

Asia-Pacific, he reiterated, is a land of opportunities, driven by the fact that satellite connectivity remains critical in the region.

"A lot of rural areas are still not properly served by cable or fibre networks. Developing countries such as Laos and Myanmar still need satellite to deliver content," Quenet concluded.

Speedcast teleports achieve WTA's provisional certification



Three of Speedcast's teleports in Australia have achieved provisional certification from the World Teleport Association.

The World Teleport Association (WTA) has announced that Speedcast has achieved provisional certification of three teleports in Australia: Bayswater (Perth, Western Australia), Henderson (Western Australia) and Mawson Lakes (Adelaide, South Australia) under the WTA Teleport Certification programme.

Introduced at IBC 2015, the Certification programme currently has 16 teleports engaged in the quality evaluation process and certifications already issued to teleports owned by Eutelsat, du, Signalhorn, Optus, Globecom, Horizon, Media Broadcast, Elara Comunicaciones, GlobalSat, Talia, Telenor, Vivacom, Cyta, Batelco and Arqiva.

To achieve provisional certification, a teleport operator completes a +170-item questionnaire and submits it to WTA, which then analyses the data based on standards established by its certification committee, and issues the provisional certification based on the self-reported information.

For full certification, a WTA auditor visits the teleport, provides independent validation of the data submitted in the questionnaire, and identify additional factors that may positively or negatively

affect the score. Full certification is issued at a tier number from 1 through 4, of which 4 represents the highest degree of excellence, and which remains in effect for three years.

Keith Johnson, COO of Speedcast, said: "As Speedcast continues to expand our global infrastructure to support customers who are increasingly reliant on connectivity and higher throughput, we are focused on becoming the business partner of choice providing the highest quality of service."

"The WTA certification programme demonstrates our focus on quality by meeting the requirements of the only certification programme for teleports, facilities and technical infrastructure in our industry."

The teleport industry is facing increased competition for complex managed services, according to Robert Bell, executive director of WTA. These, he added, are sought for by satellite operators and cloud service providers, and are the specialty of operators like Speedcast. "Certification defines the quality difference that will keep teleport operators competitive in the market," Bell concluded.

APB

X-PLATFORM

Ooyala, MPP Global tie up to drive video revenue

Ooyala and MPP Global, a provider of the eSuite subscription platform, have announced a worldwide partnership to bring a suite of services for broadcasters, operators and media companies to monetise over-the-top (OTT) and IPTV video services. According to the companies, MPP Global's subscription management platform and Ooyala's cloud video services have already been deployed by media organisations globally to support large OTT viewership in Europe, North America and Asia-Pacific. Calling the partnership a "natural fit", Jonathan Huberman, CEO of Ooyala, said: "We're able to build on [MPP Global's] content monetisation and customer acquisition and retention capabilities by providing a solution to help media companies build out new subscription offerings while improving existing ones."

Enter IBM Aspera on Cloud for file transfers

IBM Aspera says it is helping media organisations to overcome the file transfer challenges of hybrid cloud workflows with the IBM Aspera on Cloud. Designed to allow media companies to move their content across on-premises and multi-cloud environments, IBM Aspera on Cloud offers a file-system structure that allows users to move folders across data centre and cloud platform using drag-and-drop. Users will be able to send large files from on-premises or cloud storage out to their clients and partners, and invite them to upload content directly to their storage locations.

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One standard, multiple viewing experiences

As a standard that combines broadcast with broadband, hybrid broadcast broadband television (HbbTV) adds an additional layer of on-demand services with linear programming. **Josephine Tan** elaborates on how HbbTV is able to extend the services of linear channels, making them accessible to viewers' convenience.

In the summer of 2016, British public service broadcaster BBC made an announcement that it was collaborating with other industry groups to move away from MHEG, which is used to provide interactive TV services via the Red Button technology, and to introduce hybrid broadcast broadband television (HbbTV) services.

By moving towards HbbTV, the BBC says it aims to take advantage of newer technologies, designed for the Internet age, and ultimately to bring viewers an "improved and richer" interactive experience. The BBC then worked alongside industry partners such as the HbbTV Association, and successfully launched its HbbTV application last year.

The HbbTV Association is a non-profit organisation that is established with the aim to develop and promote open specifications and solutions for hybrid broadcast broadband and IPTV systems. To date, the consortium has more than 70 members globally — including broadcasters such as the BBC, as well as manufacturers and solutions providers.

Angelo Pettazzi, chair of the HbbTV marketing and education group, tells

“From the viewer perspective, in the early days, the most relevant HbbTV activity came from public service broadcasters, and the most common apps were EPGs and teletext replacement apps. Today, the industry is witnessing growing activity from commercial broadcasters, with services appearing even in IPTV networks, with apps that add value to broadcast services.”

— **Angelo Pettazzi, Chair, HbbTV Marketing and Education Group**



HbbTV is a standard that combines broadcast with broadband, allowing viewers to catch their preferred linear programming anytime at their convenience.

APB: "The UK and Italy are the most recent markets that joined the group of HbbTV early adopters, such as Germany, Spain, Austria and the more recently fast-growing deployments in Poland, Czech Republic and other Northern and Eastern European countries. Although HbbTV is enjoying

reasonable success in Europe with its adoption by most TV and set-top box (STB) manufacturers — with more than 50 million HbbTV devices — and its deployment in 20 key European countries, there is still a risk of losing momentum.

"For instance, in France, where due to a lack of commitment by the industry stakeholders in building a 'conformance regime programme' — a process to foster the adoption of a new technology to a high quality level, combined with the use of a logo that helps consumers and the industry to have confidence in the technology — the market ended up in a high device fragmentation and insuperable interoperability issues with the decision of the major French broadcasters and operators to abandon HbbTV; this is a key point to take into account in new market adoptions."

And in Asia-Pacific, Pettazzi reveals that several countries, including Australia, New Zealand, Malaysia and Vietnam, have already adopted



HbbTV on their digital terrestrial television (DTT) networks. Other countries such as Thailand, Indonesia, Brunei and Myanmar, are either performing trials or are evaluating the adoption of HbbTV, he adds.

The HbbTV Association has also published a new version of the HbbTV 2.0.2 core specification. This update is designed to enable HbbTV applications to benefit from new 4K/Ultra HD (UHD) video and audio technologies, such as high dynamic range (HDR), high frame rate (HFR), and next-generation audio (NGA), delivered as streaming services using, for instance, MPEG-DASH.

“Besides, it is also a way to enable the use of new audio and video technologies to deliver HD and 4K/UHD with much better pixel quality to HbbTV-compliant devices,” Pettazzi continues. “One relevant use case is the capability of delivering enhanced 4K/UHD content to DTT/HbbTV-enabled connected devices, where DTT networks are normally unable to deliver 4K/UHD content.

“The HbbTV 2.0.2 specification has been under development since October 2017. Many HbbTV devices already support these technologies today, but there has been no standardised way to use these features. The new specification defines a common standard mechanism for accessing them from HbbTV applications.”

Calling the HbbTV specifications as “industry standard” that provide enhanced solutions to broadcasters and operators, Pettazzi explains that these standard specifications allow media companies to directly control the design and the distribution of applications to the widest possible audience using HbbTV-enabled TV sets from every manufacturer brand.

More importantly, he suggests that the specifications bring forth the advantages of granting access to interactive services from broadcasters and operators, thus allowing them to exploit the wider reach of their channels.

Pettazzi concludes: “In today’s broadcast ecosystem, broadcasters and media operators are looking to enhance their channels offerings. The Internet competition is requiring that TVs, as a result of the connectivity enabled through smart TV features, would be able to offer additional functionalities provided by the nature of bi-directional connectivity.

“From the viewer perspective, in the early days, the most relevant HbbTV activity came from public service broadcasters, and the most common apps were electronic programme guides (EPGs) and teletext replacement apps. Today, the industry is witnessing growing



Frode Hemes, senior vice-president of product management at Vewd, points out two roles that HbbTV plays in today’s media landscape. Firstly, it is a unified standard combining both OTT and broadcast, and secondly, it empowers media companies to enhance their content offering by adding interactivity and content promotion.

activity from commercial broadcasters, with services appearing even in IPTV networks, with apps that add value to broadcast services.

“And the next step moving forward will be the dynamic ad substitution of a broadcast ad with a personalised ad delivered via broadband.”

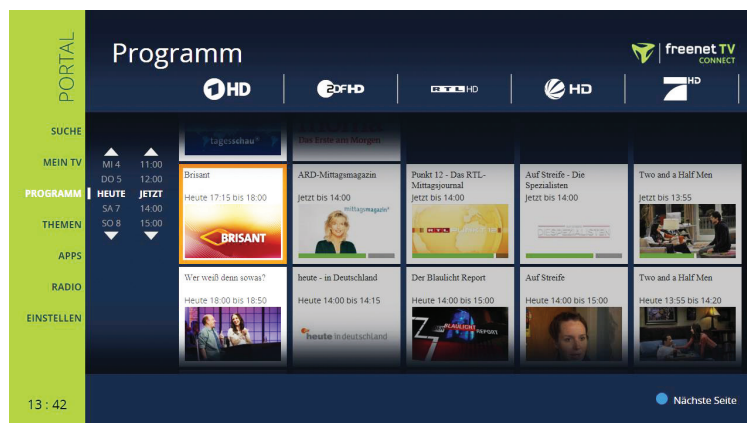
For Vewd, an over-the-top (OTT) solutions provider and a member of the HbbTV Association, the company recently sealed a multi-year contract renewal with Vestel, a manufacturer of consumer electronics and home appliances in Europe, which will see more Vewd products delivered across the full range of Vestel’s TV sets. This agreement, according to both companies, will result in one of the largest deployments of smart TVs with the HbbTV standard that allows streaming video to merge with linear TV.

Hakan Kutlu, vice-president, marketing and product management, Vestel, says: “Vestel has relied on Vewd to deliver the most compelling OTT platform on millions of smart TV sets each year. For our brands, the quality of the OTT experience is paramount. Vewd is the only partner we trust to deliver both premium content, and the latest streaming technologies to millions of households.”

Leveraging the HbbTV 2.0.1 specification to create new experiences, these new Vewd-enabled

“HbbTV is a widely adopted standard in the very matured markets around the world, such as the US, Europe, Russia and various parts of Asia, which are beginning to use it. It allows operators to not just deliver linear TV, but also VoD, as and when viewers want to consume media. Basically, it means that viewers can consume media at their own convenience.”

— Ken Loke, CCO, Eutelsat Asia



The HbbTV Association reports a growing number of HbbTV deployments around the world. In Europe, Freetel TV Connect is an HbbTV-based streaming service accompanying German DVB-T2 platform Freetel TV. In Asia-Pacific, Freeview Australia, a digital TV service launched in 2008, offers Freeview Plus, a catchup TV enhanced EPG service built on HbbTV.

and Vestel-manufactured smart TV sets are equipped with capabilities such as companion screen sync, which is the synchronisation of companion screen audio and video with a live TV broadcast.

Dynamic OTT insertion, meanwhile, is an integration of broadcast and IP content, such as dynamically adding a streaming local news programme to follow a national news broadcast, or providing personalised advertising during the broadcast of a TV programme.

Frode Hemes, senior vice-president of product management, Vewd, identifies two major roles that HbbTV plays in today’s media and broadcast landscape:

■ HbbTV defines a unified standard for both OTT and broadcast, and simplifies the deployment of content in a complex,

multi-vendor ecosystem. And as some of the content is carried over a one-way broadcast channel, having a robust standard is “absolutely necessary”.

■ It makes it possible for broadcasters to enhance their own content, add interactivity, more robust targeting and content promotion. This is crucial for broadcasters who are still garnering attention from viewers via traditional revenues, but are on a migration path to subscription video-on-demand (SVoD) and other online services.

Hemes adds: “After many years of HbbTV shipments in the core European markets, we see that the full ecosystem is getting mature. The standard is stable and robust, the certification test suite has good coverage, and software is available from experienced vendors such as Vewd. This means that broadcasters can roll out new services and content fast and inexpensively, trusting that the audience has the tools they need to consume it.”

Another member of the HbbTV Association is Eutelsat, which has collaborated with Abertis, Arqiva, Httv, Quadrille and TDF to develop the push video-on-demand (VoD) functionality based on HbbTV 2.0 standard. This, according to Eutelsat, unleashes the potential of

push VoD technologies by standardising the distribution system, paving the way for the benefits of the economics of scale in consumer electronics.

And by leveraging both broadcast and broadband infrastructures, Eutelsat adds that HbbTV is able to provide the cost and quality advantages of broadcast while offering the flexibility of broadband.

Other key benefits that the push VoD functionality offers include:

■ Video service providers can focus on the backend while benefiting from an installed base of consumer electronic devices that is compatible with their solutions.

■ Independent actors (single broadcasters or independent VoD providers) can have access to a technology previously restricted to TV platforms controlling the receiver STB at end-viewer level.

■ Smaller TV platforms can benefit from mass-market economies of scale, avoiding the integration process of a specific proprietary push VoD technology.

■ Consumer electronic vendors can provide their customers with VoD services, irrespective of Internet connection speeds, and from a wide selection of new service providers who will adopt this version of HbbTV.

Ken Loke, CCO of Eutelsat Asia, says: “It’s been 20 years since the invention of the Internet, and 10 years since smartphones came into the market. The emergence of these technologies has brought forth a word — data. Everything is converging to data — from broadcast, audio, video and news — and the industry is digitising practically to get everything into data, and to deliver that in one single platform.”

Suggesting that the way materials and media are being consumed have changed, Loke points out that it is the incidental consumption of media that is overtaking linear programming and linear channels. He continues: “There is a need to change the way media is delivered, and at Eutelsat, we are reinventing and innovating in the media distribution sphere. For us satellite operators, as well as direct-to-home (DTH) service providers, HbbTV is an extension to DTH platforms, adding on new dimensions of on-demand services.

“HbbTV is a widely adopted standard in the very matured markets around the world, such as the US, Europe, Russia and various parts of Asia, which are beginning to use it. It allows operators to not just deliver linear TV, but also VoD, as and when viewers want to consume media. Basically, it means that viewers can consume media at their own convenience.” APB

Dell EMC brings virtualisation to enhance IT transformation

By 2020, it is projected that five billion people will own multiple connected devices, and the expansion of the Internet of Things (IoT) is expected to grow beyond 50 billion devices, according to the *Network Functions Virtualisation, A Dell Point of View* report.

Describing this rapid growth of network access as a “modern marvel”, the report pointed out that networks will progressively expand in reach and capacity, resulting in technology consumption continuing its growth at an increasingly rapid pace.

David Lin, business development director of communication vertical, OEM and IoT solutions, APJ, Dell EMC, told APB: “New technologies — such as IP,

cloud and virtualisation — have all emerged in the market very quickly. For instance, network functions virtualisation (NFV) is gaining momentum throughout the telecommunications community because it can significantly improve service-delivery cost structures and agility.

“We are also seeing a similar trend taking place in the media and broadcast industry as NFV enables companies to reduce Capex and hardware costs while opening up new opportunities for automation.”

The challenge, however, is the need to equip engineers with new skillsets that are required to manage various aspects and applications operating in the virtualised environment, Lin added. “There

will be new virtualised software running in the cloud, and these are absolutely new to some engineers. Hence, they will require new skillsets to be able to handle them.

“Another challenge we have come to realise is that cloud-based virtualised systems can be inefficient if the data farms are distant from each other. Therefore, there is a need to bring them closer to the media source.”

To empower media companies to capture new digital revenue streams and deliver improved experiences, Dell EMC has introduced the Modern Data Centre. According to Lin, the modular data centre is housed with a hyper-converged infrastructure that compiles all the data storage and

servers together to enable users to optimise operations and improve efficiency.

Erwin Meyer, general manager and senior director, Dell EMC OEM Solutions, added: “Following the trend towards IP and the future of 5G, we can see companies in the media industry moving away from proprietary hardware technology into commercial-off-the-shelf (COTS) solutions, and that is definitely a trend that is closely related to virtualisation.

“We are living in an interesting time where technologies are moving towards the centre of people’s lives, and that is going to have a significant impact on every business model. With Dell’s comprehensive solutions — from



Equipping engineers with new skillsets is one of the challenges that media companies have to overcome when embracing new technologies, said David Lin, business development director of communication vertical, OEM and IoT solutions, APJ, Dell EMC.

hardware components to software solutions — we are well positioned to help our customers to innovate and benefit from this transition in the media industry.”

Customer retention a key driver in the OTT space

Retention should be a key part of your over-the-top (OTT) acquisition strategy, advised Michael Greco, vice-president of Vindicia.

Greco was speaking at the CASBAA OTT Summit 2018, which was held in Singapore on March 20 and 21, and which covered trends in viewership, OTT content strategies, OTT security issues, distribution channels, regulatory practices, business models, OTT content measurement, consumer payment options, success factors, as well as big data.

Data consumption, subscriber retention and pricing power have emerged as key drivers in the OTT space, according to Aravind Venugopal, vice-president of

Media Partners Asia.

Another speaker, Stephen Tracy, managing director of YouGov, noted that lapsed subscribers are more likely to re-subscribe when new content becomes available. “The most important factors for those considering to subscribe are cost and availability of international content,” he added.

People want to be entertained on their own terms and, essentially, the core business for an OTT service is content/price point and monetisation, said Ben Loh, general manager for tonton, a video streaming service offered by Malaysia’s Media Prima.

Piracy was also on the agenda, as the Anti-Piracy Seminar sought to broaden

the understanding of the problems piracy creates, and looked at what is currently being done to combat the growing threat to legitimate businesses, as well as explore what else that could be done.

Louis Boswell, CEO of CASBAA, said: “Piracy is a critical problem, and is particularly acute in Asia. This seminar provided a forum for conversation and debate, leading to ever more effective solutions to the problem.

“As an industry, we have to put our best foot forward and make sure the leaders of legitimate video companies all get involved.”

The seminar discussed the problems of

piracy from multiple angles — the regulatory loopholes that allow it to flourish; the increasing enforcement actions that can, and are being deployed; the role technology can play in defeating piracy; and how the legitimate industry is responding to the threat and making content more available than ever before through a multitude of legal services.

There must be more united action to combat piracy, and content owners who do not join these efforts would face negative consequences in contract renewal conversations with content platforms, cautioned Goh Seow Eng, managing director, Home for Singtel.

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REAL-TIME MEDIA OVER IP INSIDE A TV FACILITY

By Michel Proulx

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As analogue switch-off dates in Asia-Pacific draw nearer and IP takes centre stage in the region, there is a critical need to train broadcast staff in IP skillsets. The **IP Master Class by Michel Proulx**, after feedback from the two successful IP seminars APB conducted in 2017, is specially designed to equip engineers and technicians with new thought processes and the relevant skills needed in the transition to IP infrastructure in the not-too-distant future.

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FEEDBACK FROM IP SEMINARS 2017



Dr Amal Punchihewa,
Director, Technology &
Innovation, Asia-Pacific
Broadcasting Union
(ABU)

“The keynote by Michel highlighted the importance for broadcasters and the industry to get ready for the use of IP in the coming years. The transition to IP is inevitable; Asia-Pacific broadcasters have to start planning and be vigilant of the happenings in the broadcast sector in relation to IP while pushing ahead in making the transition happen.”

“Michel shared a lot in the areas of network switching technologies, and provided in-depth opinions. It will definitely benefit us, as well as other broadcasters, a plan to migrate from digital, or baseband, to IP.”



Wang Yin,
Assistant Vice-President,
Broadcast Engineering,
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