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WORLD IN BRIEF

China Media Group rolls out 4K/UHD channel

BEIJING – Chinese state radio and TV broadcaster China Media Group has unveiled the CCTV 4K/Ultra HD channel. The 4K/UHD channel began on October 2.

4K/UHD TV displays hitting 50%

HERTFORD – Nearly 50% of all TV displays shipped worldwide by the end of this year will be 4K/Ultra HD (UHD), reported Futuresource Consulting. And by 2022, the installed base of 4K/UHD TV displays will be three times larger than today, achieving 37% global household penetration.

IRG becomes Satcoms Innovation Group

DOUGLAS – The Satellite Interference Reduction Group (IRG) has expanded its reach to encompass all types of innovation within the satellite communications industry. As part of that expansion, the IRG is now known as Satcoms Innovation Group.

Rise of FAANG reshaping the world's TV industry

BY JOSEPHINE TAN

AMSTERDAM/SINGAPORE – In a period of profound changes, digital technology is changing the rules of the game, thereby creating opportunities for businesses that are agile enough to seize them, declared Keith Underwood, COO of Channel 4, a British public service TV broadcaster, at a conference session during IBC2018 held in Amsterdam in September.

"Scale alone is not sufficient," he explained. "The victory will come by being agile, nimble and deploying smart technology."

Commenting on the entrants of technology giants Facebook, Apple, Amazon, Netflix and Google — collectively known as FAANG — he said: "Now, more than ever before, established content providers must compete head-to-head with new entrants, often with an imposing global scale.

"The level of competition driven by these businesses has brought significant benefits for consumers; it has driven up quality and choice, in what is now considered to be a golden age of TV."

In response to the rise of FAANG is the ongoing acquisitions currently taking place in the media industry, such as AT&T and Time Warner as well as Fox and Disney, which Underwood foresees having a potential to "fundamentally reshape" the industry.

In Europe, he cited the collaboration between French broadcasters France Televisions, TF1 and M6, which saw the launch of Salto, a subscription video-on-demand (SVoD) platform. And in Germany, ProSiebenSat.1 and Discovery have also jointly collaborated to expand the country's mobile video and over-the-top (OTT) marketplace.

Underwood continued: "The array of viewing options in terms of programmes, channels and platforms is simply greater than ever before. In a year in which the pace of change is intensified, perhaps the only constant is that great content will continue to cut through."

Peter Bithos, CEO at HOOQ, a

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Addressable TV and what it could mean to APAC

BY RASHMI PAUL

SINGAPORE – TV will always be a winner with audiences, but how we watch is changing. While linear remains most popular in parts of Asia-Pacific — with 80% of viewers in Singapore watching on a regular TV set, and TV viewing in India at its highest-ever levels, for example — digital TV is expanding rapidly.

Not only will broadcasters soon switch from analogue, but online services such as video-on-demand (VoD) are also growing fast. By 2021, there will be 107 million more VoD users across Asia-Pacific than three years ago.

As well as increasing content exposure, this shift offers opportunities for brands to reach audiences with highly targeted content — mainly via addressable TV.

So, what does this mean for APAC?

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FAANG, friend or foe – be friendly to everyone

The entry of technology giants Facebook, Apple, Amazon, Netflix and Google, commonly known as FAANG, is being regarded by many as a threat to traditional TV operators, while some believe that it can lead to collaboration to offer consumers a wider choice of viewing experiences.

There is no doubt that the new entrants with deep pockets and better resources will drive up competition for eyeballs and this will benefit consumers in terms of quality and choice.

In fact, the rise of FAANG is forcing existing media companies to merge or to go on an acquisition trail to gain size and scale, as noted in our front-page report. For example, in Europe, the launch of Salto, an SVoD platform, is seen as a collaboration to push back against the new entrants; two companies in Germany have come together to expand the country's mobile video and over-the-top (OTT) businesses.

While platforms, channels and different viewing options continue to multiply, one thing remains key. Compelling content is still king, where audiences are concerned.

And great content that can cross borders while retaining its imprimatur requires talent. Here British public service broadcaster BBC leads the way. Back in November 2017, it merged its BBC Worldwide with BBC Studios, thereby strengthening its main programme production arm with content financing, sales and other commercial operations into a single business operating unit.

The realignment transforms BBC Studios into a global content company creating, financing and distributing films, TV series, kids programmes, documentaries and short forms.

Albeit, it is still a "big small" global player, according to Tim Davie, CEO of BBC Studios, explaining: "It is happening to a lot of broadcasters within the market where they feel very 'big' in their own space, but actually this game has completely changed — it's utterly global."

And the BBC's strategy is to stay focused on its trusted brand of British intellectual property (IP), and to attract and retain its talent pool to produce content that generates international interest.

Keith Underwood, COO of Channel 4, a British public service TV broadcaster, also agreed that as change intensifies, the only constant is that great content will continue to be a critical factor.

A company that welcomes the entrance of tech giants like Facebook into the media and entertainment industry is HOOQ, a video-on-demand (VoD) streaming service.

Its CEO, Peter Bithos, believes that Facebook will "quicken the pace of the evolution of the OTT category in Asia" and that the success of Facebook will also educate more consumers about OTT.

The bottom line as competition hots up is that everyone needs friends, be it for life or work. Having good allies opens up new opportunities that allow media companies to take their business to greater heights.

Or, as Underwood advised attendees in his opening keynote speech during IBC2018: "It is entirely possible that many of the speakers could leave Amsterdam on Monday as colleagues rather than competitors. So be careful when going around the halls; you never know, you might just be speaking to your next boss!"

Friend or foe, be friendly to everyone.

JOSEPHINE TAN
NEWS EDITOR

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APB PANELLISTS

Dr Peter Siebert
Executive Director
The DVB Project

Stan Moote
CTO
IABM

Andrew Anderson
Head of Broadcast Operations
Seven Network (Operations) Ltd

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EDITORIAL
managing editor
Shawn Liew, shawn@editecintl.com
contributing editor (technology)
Karl K Rossiter, karl@editecintl.com
news editor
Josephine Tan, josephine@editecintl.com

CORRESPONDENTS
■ India
Shirish Nadkarni, shinads@yahoo.co.uk
■ USA
Mike Feazel, mfeazel@gmail.com

PRODUCTION
production editor
Zuraini Ridzwan, zuraini@editecintl.com
junior sub-editor
Eva Meango, eva@editecintl.com
senior multimedia designer
Raymund Jaudian, raymund@editecintl.com
ad/office administrator
Irene Lok, irene@editecintl.com
accounts manager
Tan Hui Min, huimin@editecintl.com

MARKETING
chief marketing officer
Kylie Chua, kylie@editecintl.com
director - sales & marketing
Jessie Tan, jessie@editecintl.com
manager - sales & marketing
Mark Ng, mark@editecintl.com
senior executive - sales & marketing
Joey Moh, joey@editecintl.com

CIRCULATION & PROMOTIONS
Kylie Chua, kylie@editecintl.com

PUBLISHING
publisher/editorial director
Andrew Yeo, andrew@editecintl.com

MEDIA REPRESENTATIVES
■ China
Yang Ou
BEIJING BUNCH EXHIBITION SERVICES LTD
Room 501/B1, Thunis Development Building, No. 11 Huixin East Street, Chaoyang District, Beijing 100029
Tel: +86-10-6482 3808-106
Fax: +86-10-6482 3670
E-mail: yangou@bbes.com.cn

■ Japan
Mikio Tsuchiya
WORLD MEDIA SERVICES INC
3-35-1-302, Hongodai, Sakae-Ku, Yokohama 247-0008
Tel/Fax: +81-45-891-1852
E-mail: mikio.tsuchiya@worldmedia.jp

■ USA & Canada
Gary L Rhodes
SEDOR MEDIA INC
45 Florence Avenue, Leonardo, NJ 07737, USA
Tel: 1-848-757-2930
E-mail: sedorusa@comcast.net

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Tel. +852 2571 6288
Fax. +852 2875 9181
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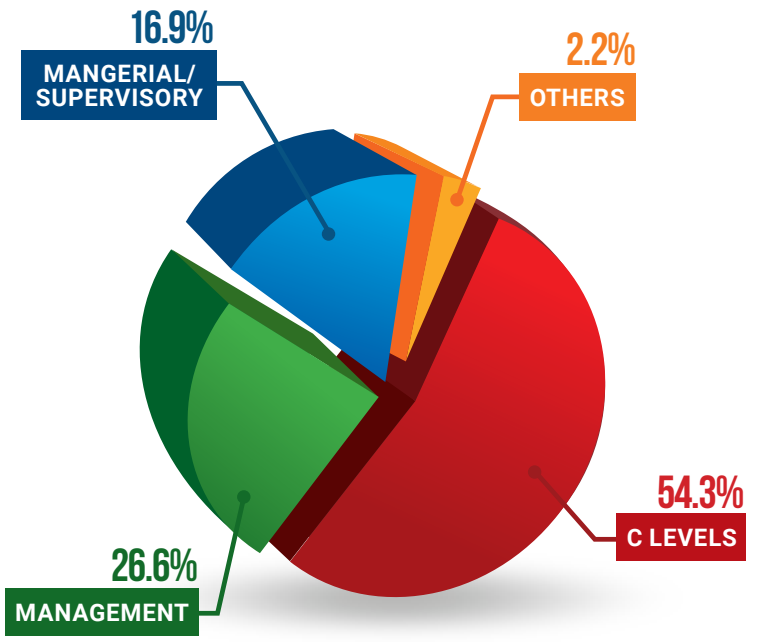

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For more information, please contact +65 6282 8456 or e-mail
jessie@editecintl.com / mark@editecintl.com

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COMING WITH OUR DECEMBER ISSUE

TECHNOLOGY HIGHLIGHTS

Trends & Insights 2018

This year's Technology Guide looks at What, Why & How innovative technologies, with the assistance of Systems Integrators, are helping broadcasters in their journey into the Digital Domain in 2018 and beyond.

To participate in this special supplement, please contact +65 6282 8456 or jessie@editecintl.com / mark@editecintl.com

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Tap technology trends to secure the future of your business

BY STAN MOOTE

Smart business leaders regularly take time away from day-to-day business imperatives to look ahead and see what is coming down the track. That way, they are part of the next wave, rather than victims of it. I have engaged with many smart leaders over the past few months and also taken some time myself to gaze into the future, taking into account solid, hard data from IABM's *Strategic Industry Analysis* report released at IBC2018. What follows is the result — my future-proofing technology trends checklist, and while not all of the items will necessarily apply directly to your business, it is worth the time to evaluate the potential impact in each of the areas I cover.

"Your ongoing success relies on examining and re-inventing everything you do — continuously. That way, you will be part of the future, and not a footnote in history."

Broadcasting used to be a known quantity — it delivered all your entertainment, news and information. But thanks to Networking Everywhere, we now have multi-platform delivery. Also, because of Networking Everywhere, we ended up with social media, and social media has become entertainment — which is what is taking us away from the norm of entertainment via TV.

We also get news and weather — again, traditional broadcast staples — via social media today; I will leave the discussion about fake news to you though! What social media does not do is documentaries, reality and game shows — but we are nevertheless talking about them on social media!

So my first technology trend is **social media**. In the US, adults watch an average of around five hours of video a day (content that is 20 minutes or more in length), and spend one hour and 15 minutes a day on social media. Social media affects TV ratings — 85% of Twitter users who are active during prime-time say they are tweeting about TV content they are watching; tweets cause ratings, which help drive more tweets. So you can use social media to increase viewership, and by understanding viewer interactions with TV programmes and social media, you have even more ways to use this data.

People most definitely want local news and also world news with a local point of view; this includes local sports, events and weather too. The broadcasters who are doing well are focusing on making local content available — this is keeping their brands and ratings strong.

The second technology trend is **advanced analytics**, which has only just started to be used in the broadcast business. Using artificial intelligence (AI), advanced analytics has the power to look into extremely large data sets to reveal patterns, trends and associations. The insights gained can inform advertising decisions and uncover viewer trends, likes and dislikes way beyond the power of the traditional focus group. Some 63% of companies with well-established analytics strategies reported 15% or more improvement in operating margins in 2016. Today, there is enough data that can be easily mined to improve the odds of programming bets and viewer preferences.

AI itself is my next trend — also at an early stage of adoption, but with an increasing number of broadcast and media companies planning to deploy it over the next few years. Potential applications for AI range across the content chain, from acquisition and editing to content management and distribution. What areas of your operation are laboriously manual or could not use an efficiency boost? AI is one of the keys to unlock this and free up your staff to do more profitable ventures which lines up directly with purchasing decisions to "make us more efficient".

Software-defined networking (SDN) is the next trend to watch out for. Dynamic, manageable, cost-effective and adaptable, SDN is ideal for the high-bandwidth, dynamic nature of today's applications. The premise behind SDN is that signals no longer need to line up with workflows; this will deliver a major shift in how facilities and upgrades will be designed, built and maintained.

IP is already on most people's radar. With SMPTE ST 2110 now established, adoption of IP is already accelerating, bringing clear benefits to facilities, most notably in agility and efficiency. Be aware of the point where you have amortised your investment in SDI infrastructures and plan accordingly — or move to a hybrid IP/SDI approach to reduce lift-and-shift shock on your Capex books.

Enabled by the move to IP, my next trend is **virtualisation**, which replaces dedicated hardware functions with software running on COTS (commercial off-the-shelf) technology. Virtualisation has a number of benefits; in addition to eliminating custom hardware, it also enables new services to be added quickly — and non-profitable ones to be turned off quickly too — and delivers agility to meet rapidly changing viewer demands.

And, of course, it works with the cloud too, the adoption of which is reaching an advanced stage in broadcast and media. Most organisations are opting for a private or hybrid cloud approach, with on-demand usage providing great flexibility and potential cost savings while delivering a much faster time to market for new services.

4K/Ultra HD (UHD) may not have taken off as a mainstream over-the-air service as some predicted, but it has become the preferred acquisition format for future-proofing reasons — and also to serve the requirements of over-the-top (OTT) operators. But 4K/UHD is not about more pixels — it is about better pixels, enabled by **high dynamic range (HDR)**. There is great interest in HDR because consumers can see the difference, and even if you are not planning on going down the 4K/UHD road any time soon, many others are looking at the benefits of HDR used with just an HD signal. That is why HDR will be part of your future — and maybe sooner than you thought.

5G is coming, with predicted subscriptions rising from zero today to over 500 million in 2022, with 20 million of these in the APAC region. Ten times faster than 4G with a 90% reduction in network energy usage, 5G opens up a whole new world from smart cities and self-driving cars to the Internet of Things (IoT), and might even take the place of the wired Internet entirely in countries that have yet to develop widespread broadband infrastructure.

Virtual reality (VR) may yet be in its infancy and struggling for monetisation models, but it is finding deployments in our industry — for the present, mostly in sports, with 5G making mobile distribution possible in the coming years — and who knows where it will go with social media then!

Blockchain will certainly change the dynamics of how programming gets paid for. Investment so far has been focused on advertising, but other potential use cases include conditional access, rights management and content monetisation. It may take a while to really get a hold, but it is coming, so do not ignore it.

And finally, as with every aspect of your business, **cybersecurity** is a must-have point to be examined.

Your ongoing success relies on examining and re-inventing everything you do — continuously. That way, you will be part of the future, and not a footnote in history. I urge you to use the above trends as a checklist for every aspect of your planning. To get your planning started be sure to look at IABM's IBC2018 *Broadcast & Media Strategic Analysis* interactive report at www.theiabm.org/ibcreport. APB

Stan Moote has worked worldwide in the industry for more than three decades and is the CTO for IABM, www.theIABM.org. IABM is the international trade association for suppliers of broadcast and media technology. Stan has a clear understanding of technology combined with a solid business twist, and he is also an APB panellist.

APB PANELLISTS

Graham Stephens
CTO
Media City
Development, Malaysia

Goh Kim Soon
Senior Vice-President
Broadcast Engineering
Mediacorp

Shad Hashmi
Vice-President,
Digital Development,
Global Markets & Operations,
BBC Worldwide Asia

What's on Screen

Singapore viewers devour *MasterChef Singapore*

SINGAPORE – A rendition of the most successful cookery TV format in the world, *MasterChef Singapore* saw 637,000 viewers tuning in to its first four episodes on Mediacorp Channel 5. Additionally, the show has had more than 136,000 video views on Toggle, Mediacorp's interactive over-the-top (OTT) service.

Irene Lim, chief customer officer, Mediacorp, said: "We are excited that Singaporeans have struck a chord with *MasterChef Singapore*, going by the viewership on Channel 5, on-demand viewing on Toggle and the conversations we've had on social. We are glad that Channel 5 is bringing families together over a show celebrating Singapore's favourite pastime."

A trace of great content on iflix

KUALA LUMPUR – Subscription video-on-demand (SVoD) service iflix has announced a new content partnership with Global Afro Urban media group TRACE that will see two of the latter's premium channels available to iflix users.

TRACE Urban is an international urban music channel that offers a "unique insight" into global urban music and culture, while TRACE Sports Star is a sports channel exclusively dedicated to the lives of sports celebrities.

Discover more on Singtel TV

SINGAPORE – Singtel TV has launched three additional lifestyle brands from the Discovery portfolio on Singtel TV and Singtel TV Go.

With the inclusion of US home improvement channel HGTV, Asian Food Channel (AFC) and Food Network, Singtel is now carrying the whole suite of Discovery channels in Singapore, including Discovery Channel and Animal Planet.

Goh Seow Eng, managing director, home, consumer Singapore, Singtel, said: "Singtel TV is constantly working to deliver premium content to our viewers, many of whom are avid fans of educational and lifestyle content. We are pleased to work with Discovery to continue expanding Singtel TV's content line-up of quality shows."

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Be decisive in order to overcome challenges, ABU members told

ASHGABAT – Broadcasters in Asia-Pacific face multiple challenges and need to take decisive action to remain relevant, Masakazu Iwaki, chairman of the Asia-Pacific Broadcasting Union (ABU) Technical Committee, said.

Speaking at the 55th ABU General Assembly held last month in the capital of Turkmenistan in Central Asia, Iwaki added that emerging technologies and the ease of providing content via public Internet at reasonable costs had put traditional broadcasters in a "very difficult situation".

"On top of that, the added competition from new entrants to the media industry utilising these alternate platforms is driving audience interests towards them," he added.

Besides new media technologies such as over-the-top (OTT) and integrated broadcast broadband (IBB), the industry is also looking at rolling out advanced technologies including 4K/Ultra HD (UHD) and 8K services, as well as IP and artificial intelligence (AI) technologies.

Iwaki, however, cautioned: "All of these solutions are available for the digital environment, but the sad truth is that, unfortunately, most of our members are still struggling with the move from analogue to full digital facilities. This digital transformation is a must, and is inevitable for our survival in the industry."

PHOTO CREDIT: ASIA-PACIFIC BROADCASTING UNION

Dr Javad Mottaghi, secretary-general of the ABU: "New technologies, new media platforms and wide accessibility to broadband services are increasing the demand for content to be delivered on all platforms for viewers."

Equally important, broadcasters need to view advances in technology as an opportunity, rather than a challenge, urged Dr Javad Mottaghi, secretary-general of the ABU.

He explained: "New technologies, new media platforms and wide accessibility to broadband services are increasing the demand for content to be delivered on all platforms for viewers, who now prefer to consume their preferred content at their preferred times on their preferred devices."

Making use of new digital technologies, such as big data, to understand the preferences of audiences is key to developing an edge over the competition, Dr Mottaghi added, urging ABU members to start using such techniques to gauge their audiences' needs.

Seize advantages of addressable TV and be ahead in user experience & ad success

1

Addressable TV: The story so far

To date, addressable TV deployment has moved at a leisurely pace — with ad spend hitting a modest US$1.26 billion in the US last year. This is partly because the market is nascent, and partly due to early adoption barriers: primarily cost.

Brands worry that addressable ads are more expensive than linear. Meanwhile, media owners fear open auctions could see premium impressions sold for lower prices and devalued.

What are the advantages?

Addressable TV allows varied ads to be served to different homes. Bringing together the best of linear and digital — vast reach and granular targeting — allows marketers to match ads with unique audience segments at scale.

With access to high-quality first- and third-party data, such as authenticated VoD log-in details or location information, intelligent platforms determine the interests, habits and whereabouts of viewers.

Using this information, relevant ads that stand a greater chance of engaging individuals in each household are delivered. So, while addressable may involve higher short-term costs, long-term rewards are worthwhile — enhanced response and less wastage.

And for sellers, it is possible to safeguard value by setting fixed prices for premium deals within private marketplaces (PMPs).

Moreover, addressable allows digital to complement linear as part of integrated campaigns. For instance, marketers can utilise second-screening: capturing the attention of individuals motivated by TV ads to research products via their smartphone. And the same applies vice versa; online content can build a buzz leading up to live TV events that enhance viewing and ad exposure.

'Seamless viewing' can also be created across different platforms — as shown in this year's multi-channel approach around the Australian Open. Indeed, live content is an enticing addressable prospect, with real-time data about audience behaviour — online and off — harnessed to optimise in-the-moment impact.

Adoption of connected TV might have been slow so far, but it is poised to explode. Malaysia alone saw smart TV set penetration rise from 1% to 22% between 2016 and 2017, while the current 67% adoption of pay-TV in India is set to escalate rapidly as an increasing number of players enter the VoD market in the region.

This means the smart money is on mastering addressable now. By seizing the opportunity addressable presents to deliver targeted messages that inspire viewers and amplify the effect of linear, marketers can set themselves ahead of the crowd in terms of both user experience and advertising success.

Rashmi Paul is commercial director, Asia-Pacific, FreeWheel, a Comcast company.

Broadcasters must reorganise ops to fend off FAANG

1

video-on-demand (VoD) streaming service, agrees with Underwood's point on the increasing competition in the media market. He told *APB*: "I can confidently say that we will be seeing more content and distribution partnerships within the digital space as market gets increasingly saturated and competition intensifies."

Operating predominantly in Asia, HOOQ itself is a joint venture by Singtel, Sony Pictures and Warner Bros. Bithos commented: "Partnerships have always been part of HOOQ's strategy right from the get-go. We have been in partnership with the largest telecoms incumbents in every market we operate in, and are constantly striking partnerships with consumer and tech brands to scale our reach."

From the content perspective, HOOQ has been offering both local and Hollywood content, in addition to its original productions. This blend of content, according to Bithos, presents an "exciting proposition", especially to businesses focused on consumers in emerging markets.

"Built on our belief to bring accessible premium entertainment to every Asian viewer, we are definitely open to partnering like-minded peers to bring our million stories to billions more people in Asia," he added.

HOOQ also welcomes the entrance of tech giants like Facebook into the media and entertainment industry so as "to quicken the pace of the evolution of the OTT category in Asia".

He concluded: "We look forward to Facebook accelerating OTT viewership in the region, creating opportunities for HOOQ to expose our content to more online viewers.

"The success of Facebook will not only educate more consumers about OTT category, but will also allow HOOQ to ride atop the shoulders of the tech giant to share the best of premium local and Hollywood entertainment to more audiences in the region."

Realising the profound changes taking place in the industry, exacerbated by changing viewing habits and the increasingly competitive global market, BBC decided in November last year to merge its BBC Studios and BBC Worldwide to form a single commercial organisation called BBC Studios.

According to the public service broadcaster, the move has ensured that the range of commercial activities already carried out by BBC Worldwide, including content financing, sales and commercial channels, and BBC Studios — the BBC's main programme production arm — are brought together in a simplified organisation with a single business plan and combined operating model.

With its distribution and production divisions merged as one, BBC Studios now has 17 production companies — including Anton Corporation — under its name.

Anton is a global content company creating, financing and distributing films, TV series, kids programmes, documentaries and short formats. The realignment saw the establishment of The Drama Investment Partnership, a pool of funding secured for investment in premium British drama titles with international appeal.

The initiative is also aimed to increase the "pace and flow" of projects from British production companies by having accessible capital in place at the point of commission.

Under this agreement, BBC Studios will identify projects for development and investment, and will take on global marketing and distribution of titles financed by The Drama Investment Partnership.

Tim Davie, CEO of BBC Studios, stressed that the content unit of the BBC is "very focused on British IP", and have production businesses worldwide that could support that IP.

Tim Davie, CEO of BBC Studios, described the company's content unit as a "big small" global player.

He explained: "It is happening to a lot of broadcasters within the market where they feel very 'big' in their own space, but actually this game has completely changed — it's utterly global.

And in the global context, BBC chose to be very focused on British intellectual property (IP) and ensure its production businesses around the world support and strengthen its IP.

Davie also explained that the need to attract and retain talent drove the BBC to establish BBC Studios. He said that while every CEO would maintain that content is king, BBC Studios offers a nurturing workplace for talent.

"In the BBC Group, we felt that there were significant opportunities and jeopardy around retaining talent and content supplier.

"A broadcaster has to have a great supplier of content, and that comes straight from the talent. So to simplify these things, it is about how you secure that talent."

Indeed, to be able to fend off FAANG, broadcasters have to rethink and reorganise their operations to continue engaging their fast fragmenting audiences.

Singapore makes its presence felt at MIPCOM 2018

CANNES – At last month's MIPCOM 2018 held in Cannes, France, Singapore's Infocomm Media Development Authority of Singapore (IMDA) left the biggest ever delegation of 19 Singapore media companies.

Collectively, these companies presented over 460 hours of compelling stories from Singapore and Asia across some 70 titles.

For instance, *First Man Out* is a large-scale survival series in 4K/Ultra HD (UHD) format, produced by Discovery Networks Asia-Pacific (DNAP) and Singapore's Beach House Pictures as part of a partnership between DNAP and IMDA. Other highlights included *Wasted Earth*, a three-episode virtual reality (VR) documentary by Singapore-based production company Sorahouse (Sora Media).

Wasted Earth takes viewers on an immersive 360-degree experience of spectacular places in Asia, which have now turned into wastelands at the hands of men.

Supported under a partnership between IMDA and HBO Asia, Singapore production house Zhao Wei Films produced *Folklore*, a horror anthology gathering six well-known directors — including Singaporean filmmaker Eric Khoo from around Asia to bring to life haunting tales based on Asian supernatural beliefs.

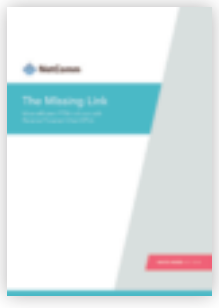
IMDA will also be organising the Singapore Media Festival (SMF) in Singapore from Nov 28-Dec 9 this year. A flagship annual event, the SMF is South-east Asia's leading international media event that serves as a platform to showcase and recognise the best of Asian storytelling, bringing Asian talent from around the region to network, connect and collaborate.

According to IMDA, SMF has established itself as a must-attend event, gathering influential, promising and prominent names from the region. In 2017, the festival welcomed an attendance of more than 20,000 delegates and festival attendees from over 50 countries. Over the past four editions of SMF, more than US$1 billion worth of deals and partnerships have been made.

In line with the festival's aim of driving investment opportunities into the region through collaborations, SMF 2018 will be spotlighting the Philippines as its Country-of-Focus, in celebration of the 100th year of Philippine cinema this year. SMF 2018 will also highlight the country's rich stories, talents and achievements across all of its constituent events.

White Paper @ www.apb-news.com

❖ The missing link



To cater for increasing bandwidth needs, more and more operators have started to build fibre-to-the-home (FTTH) networks. According to NetComm, connecting the last part of the network provides the greatest challenge; there are a significant number of homes that are currently underserved and looking for higher speed alternatives.

Reverse Powered Gfast Distribution Point Units (DPU), said NetComm, offer the missing link between the fibre running in the street and the copper lead-in, resolving all major concerns and challenges operators have with other Gfast deployment options.

In this white paper, this new solution is introduced to cater to a greater number of subscribers, and ultimately, increase the market share by winning more loyal customers through offering high-speed broadband services in a quicker, most cost-effective way.

2018 Calendar of Events

■ NOVEMBER

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

■ DECEMBER

December 6 - 7
IABM ANNUAL INTERNATIONAL BUSINESS CONFERENCE & AWARDS 2018
Hilton Metropole, Birmingham, UK
www.theiabm.org

2019

■ FEBRUARY

February 26 - 28
BVE 20189
Excel London, UK
www.bvexpo.com

■ MARCH

March 4 - 7
ABU DIGITAL BROADCASTING SYMPOSIUM 2019
Royale Chulan Kuala Lumpur, Malaysia
www.abu.org.my

March 12 - 14
CABSAT 2019
Dubai World Trade Centre
The UAE
www.cabsat.com

■ APRIL

April 3 - 5
VIETNAM INT'L BROADCAST & AV SHOW (VIBA 2019)
Hanoi International Exhibition Center, Vietnam
www.vibashow.com

April 6 - 11
NAB SHOW 2019
Las Vegas Convention Center, Nevada, USA
www.nabshow.com

■ MAY

May 22 - 25
KOBA 2019
COEX Exhibition Centre, Seoul, South Korea
www.kobashow.com

■ JUNE

June 18 - 20
CONNECTECHASIA2019
•BROADCASTASIA2019
Suntec Singapore
•COMMUNICASIA2019
Marina Bay Sands, Singapore
www.connectechasia.com/

TRENDING

How can pay-TV operators truly capitalise on the Android TV opportunity?

Ivan Verbesselt, Senior Vice-President, Marketing, NAGRA

A short time ago, I wrote a blog about the impending digital denouement for the pay-TV industry.

By that, I meant the tipping point where operators sink or swim based on the truly digital capabilities of their backend, back-office, CMS, data analytics and cloud platforms.

The point where digital transformation stops being just a buzzword, and where accelerated improvements to the product and service portfolio, technology, commercial and operating models really start to happen.

This is all occurring in a context where the very content bundle is being reinvented, likely evolving into a platform-agnostic combination of inherently skinny baseline packages with a collection of OTT add-ons — and presenting a clear opportunity for TV operators to reinvent themselves as super-aggregators, converging it all back into one coherent experience.

And naturally, as part of this conversation, one inevitably comes across leading client device ecosystems such as Android TV, a newly emerging level playing field upon which diverse content sources through their respective apps naturally blend in the consumer's home.

Because it's true that Google, in fine tuning Android TV along the way, has progressively addressed the concerns of the market and created something more flexible for operators.

And it's true that, for some, it's already proven a watershed moment — the opportunity to have an Operator Tier branded user experience, Google TV services, and direct carrier billing to name a few, rolled into one. With more than a million devices activated every two months the momentum is hard to ignore.

Of course, its broadening appeal to operators of all sizes doesn't necessarily mean that it yields a perfect solution without any further ado.

Operators using Android TV still need to ensure any service built on the platform is secure, protecting both the content owners and consumers' data.

There have also been concerns that Google requires service providers to follow a fixed three-year update scheme, with no support offered after that. What does this imply? Perhaps that a built-in obsolescence of the most important Capex driver of any pay-TV deployment may kick in earlier in the deployment lifecycle. However, in a BYOD model this may become less of an issue since it more naturally matches the device renewal cycle in consumer electronics.

Ultimately, as Android TV continues to extend its reach across major markets, operators will be shrewd to first consider what it is that they will have to give up.

For example, all of these benefits might well be kept in check by the idea of Google advancing into their territory.

However, the risk of not exploiting Android TV's cost savings, fast time-to-market, easier access to third-party OTT apps de facto facilitating a pragmatic super-aggregation role, direct carrier billing, deep linking for additional search benefits and advanced voice-driven technology, is increasingly deemed to be greater by many operators.

But a TV ecosystem entails much more than that. Operators must still work with solution providers to find those service-defining ingredients that make a compelling pay-TV service — including end-to-end multi-device and multi-network content value protection such as NAGRA's Security Services Platform, and an engaging user experience, as provided by NAGRA's OpenTV Signature Edition, a ready-to-deploy, always evolved OTT TV ecosystem driven by a business back-end with the data analytics that enable active content and service monetisation with Android TV . Only then can pay-TV operators truly capitalise on the Android TV opportunity. ❑

Digitisation will be a key weapon for incumbents in the battle against OTT

TRENDING

Sam Willoughby, Director, Professional Service, APAC, ARRIS

Content is King has been the battle cry of service providers as they compete for eyeballs against over-the-top (OTT) disrupters. The results speak for themselves, however, as OTT providers continue to take revenue away from the service providers, using the very same access infrastructure the incumbents own and operate. They must be doing something right. Being a product of the digital age, OTT has the advantage of being fully digital, and born in the cloud.

The telecom industry is beginning to embrace these new technologies, with global powerhouses such as Orange and AT&T committing to a digital business transformation initiative, largely powered by open source platforms such as ONAP (Open Network Automation Platform).

Within the Asia-Pacific region, MyRepublic is deploying the TMForum Zero Touch Provisioning framework for its fibre-to-the-home (FTTH) network, and Telstra has its NE2020 initiative to simplify product offerings and focus on customer experience. But will these digital transformation principles work with communications service providers and video networks?

ARRIS recently helped a tier-one operator in the region with digital transformation automate an order-to-activate process for its enterprise media contribution networks. The goal was to fully automate the provisioning of an itinerant network link service, removing all human intervention.

First, the operator's media network assets were abstracted into a model using ONAP's Active and Available Inventory component. Once completed, custom microservices were developed that interface to ScheduleAll, download the customer service booking data, design a service that would meet the customers' requirements, and provision it in the production network.

The solution was tested successfully and now operates in production, where it delivers operational benefits by removing the swivel chair human interaction in the provisioning process, and dramatically reducing service provisioning times. While the success of this use case is providing the operator with ongoing benefits, the real win here is that it proves that video-specific networks, with their specialised requirements and equipment, can be abstracted for use in automation platforms.

Now, the operator has a network inventory model built that it can leverage to automate further business use cases, which will continue to improve the customer experience and have a positive impact on both capital and operational expenditures.

This really is the key. Once parts of the business have been abstracted into a model, there is no limitation to what can be automated, and business is well on the path towards digital transformation.

Closed loop automation can be used to perform assurance activities on the network, improving fault resolution time and customer experience while reducing operational headcount and cost. Defined engineering rules and capacity management functions can be automated so they are performed in an agile manner, the same way Amazon spins hundreds of thousands of VM's per day up and down just to satisfy peaks in McDonald's orders through uberEats.

Zero touch fulfilment of service orders can be offered across the whole product range, and the new services enabled almost immediately.

By deploying the same automation technologies as OTT providers, service providers will themselves transform into digital businesses, capable of managing their infrastructure in an automated manner — at greatly reduced cost and with greater efficiencies. There is a paradigm shift occurring within service providers as they transition to cloud optimised, digital businesses.

While content remains king, the new line heard on the battle field is: *If you can't beat them, join them.* ❑

Digital Media Rights different verticals

promotings

Headquartered in New York, Digital Media Rights (DMR) is a digital media and advertising company whose portfolio spans three different areas — content distribution, digital advertising, and over-the-top (OTT) publishing. **APB** *prompts Will Chao, vice-president of product development and programming, DMR, on how the company manages each vertical while journeying through the increasingly digital media and entertainment space.*

Since its founding in 2010, Digital Media Rights (DMR) has embarked on a different journey to make its mark in the media and entertainment industry, starting from its base in New York, USA. Unlike traditional media players, DMR positions itself as a premiere digital media and advertising company with its portfolio spanning three key areas — content distribution, digital advertising, and over-the-top (OTT) publishing.

As a global distributor of featured films, TV programmes and documentaries, DMR has sealed direct distribution deals with several digital platforms, including Netflix, Hulu, Amazon, Comcast, Google Play, Vudu, and many others. To date, DMR has acquired and distributed over 7,500 titles from more than 300 partners across film studios, TV networks, production companies and sales agents.

In February this year, DMR inked a five-year, non-exclusive deal with BidSlate, a global content distribution platform. The agreement covers distribution of five films, including two documentaries — *Dukale's Dream*, which stars Hugh Jackman with an Ethiopia coffee grower named Dukale; and *Nerd Prom: Inside Washington's Wildest Week*, which peeks into the White House Correspondents' Association's annual dinner and the surrounding hoopla.

The films are available across a number of digital platforms, including Amazon Prime, Amazon Instant Video, Hulu, Pluto TV, TubiTV, Google Play, FandangoNow, Vudu, Kanopy, Overdrive, and on cable video-on-demand (VoD). In addition, the films are also distributed across all five of DMR's OTT channels.

As for DMR's digital advertising arm, the unit manages advertising sales of video and display inventory via partnerships with OTT, desktop and mobile publishers. For instance, DMR is currently operating and representing some of the leading channels across devices such as Roku, Apple TV and Amazon Fire TV. According to DMR, its publishing partnerships yield more than 100 million impressions per month with an average completion rate of over 95%.

Will Chao, vice-president of product development and programming, DMR, told *APB*: "DMR's core competencies include digital distribution, publishing and advertising. The digital media space is the most exciting puzzle in the entertainment industry. We have been in the distribution and publishing business for a few years now, and we see that the industry is maturing.

"As more and more users adopt OTT and streaming, the advertising business will usher in the next big change in digital consumption. We expect to see more advertising video-on-demand (AVoD) offerings in the market space."

PHOTO CREDIT: ISTOCK BY GETTY IMAGES

The entrance of the Internet into the video space has resulted in the shift in audience viewing habits, and was one of the reasons which prompted DMR to launch its OTT channels in order to better cater to viewers in the digital space.

expands digitally across

"As more and more users adopt OTT and streaming, the advertising business will usher in the next big change in digital consumption. We expect to see more advertising video-on-demand (AVoD) offerings in the market space."

— Will Chao, Vice-President, Product Development and Programming, DMR

DMR is also an OTT channel publisher and developer with a total of five owned and operated OTT channels under its belt. Besides catering to audiences in the digital age, DMR also aims to curate these OTT channels for audiences who are underserved via traditional media outlets.

With consistently growing libraries, the five OTT channels — Yuyu, Midnight Pulp, Cocoro, KMTV and AsianCrush — have each become the streaming destination of their respective genre, said DMR.

■ Yuyu — Curated for millennials and post-millenials, Yuyu is a general entertainment streaming service featuring a library of films and TV series from around the globe.

■ Midnight Pulp — Midnight Pulp is the service which DMR labels as the "perfect late-night channel". Streaming "all things strange from the dark side", Midnight Pulp offers curated selection of cult programming, from science-fiction to horror and thriller films.

■ Cocoro — As the destination for the family on-the-go, Cocoro is packed with kids-friendly programmes designed to educate and entertain. Children can unleash their imagination as they learn, play and explore big ideas with the colourful Cocoro characters.

■ KMTV — From the newest releases to variety show highlights and all things in between, as long as it is related to South Korean pop culture, it is probably in KMTV.

■ AsianCrush — The streaming service for Asian trends and entertainment, featuring Asian film and TV content on-demand.

With a vision to be the home for Chinese programming in North America, AsianCrush further established strategic partnerships with Chinese theatrical distributors China Lion and Orchid Tree. The agreement kicked off in July this year with the premiere of director Ann Hui's *Our Time Will Come*, a war-time drama starring Zhou Xun, Eddie Peng and Wallace Huo.

Other Chinese films available on AsianCrush include *The Viral Factor*, *The King Of The Streets*, *Run For Love*, *Anniversary*, *Lucky Fat Man*, *Breakup Buddies*, *Bangkok Revenge*, *Youth*, *Fist and Faith*, *My Wife Is A Superstar*, *Breakup Guru*, *Show Me Your Love*, *Vampire Cleanup Department*, and *My Alien Girlfriend*.

Chao elaborated: "DMR has always been quite platform-agnostic when it comes to distribution. We utilise the viewing data gathered on our various distribution outlets, be it Prime Video, Hulu or other smaller platforms, to help us shape the programming of our owned and operated OTT channels. It is always our intention to be an active participant in the cord-cutting revolution, and having footprints on as many platforms as possible gives us a great foundation to fill out the niches in the streaming market.

"We are also interested in incorporating social media elements in the streaming of long-form content. We have seen it work on live streams with YouTube and other video-based social media platforms, but it will be interesting to see if these social media elements can be expanded into OTT."

All five OTT channels are available in North America across all outlets for OTT channel consumption, including Web, Roku, Apple TV, Amazon Fire TV, Chromecast, iOS and Android phones.

Despite enjoying success in the North American region, Chao revealed that the company currently does not have any plans to expand into other markets. He concluded: "But since our channels' social media brands have enjoyed a very engaging global presence, we are definitely considering the potential of opening up our services to key territories, such as South-east Asia."

PHOTO CREDIT: DIGITAL MEDIA RIGHTS

DMR's OTT channels — Yuyu, AsianCrush, Midnight Pulp, Cocoro and KMTV — are packed with content curated in their respective genre.

Creating the most compelling sports coverage and building brand loyalty has never been more vital than in today's competitive market. Today's viewers and sports fans expect a more engaging, interactive and fully immersive experience. Sports programmers need advanced, cost-effective solutions to deliver rich 4K/UHD content, virtual and augmented reality, and appealing onscreen graphics enhancements.

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APB CREATION

SMPTE publishes immersive audio standards for cinema

The Society of Motion Picture and Television Engineers (SMPTE) has published new SMPTE ST 2098 standards for immersive audio. These include ST 2098-1:2018, Immersive Audio Metadata; ST 2098-2:2018, Immersive Audio Bitstream Specification; and ST 2098-5:2018, D-Cinema Immersvie Audio Channels and Soundfield Groups. Brian Vessa, founding chair of SMPTE's Technology Committee on Cinema Sound Systems (TC-25CSS) and executive director of digital audio mastering at Sony Pictures Entertainment, said: "By supporting delivery of a standardised immersive audio bitstream within a single interoperable digital cinema package, the new SMPTE immersive audio standards simplify distribution while ensuring that cinemas can confidently play out immersive audio on their choice of compliant immersive sound systems."

Asim Saeed joins Ikegami Electronics

Ikegami has appointed Asim Saeed as business development manager. Reporting to Kenzo Ishizuka, president, Europe, Ikegami, Saeed will promote the full Ikegami range of broadcast and medical products to existing and potential customers. Saeed was previously with a UAE-based systems integrator, where he was responsible for Canon's broadcast lenses in the Middle East. He became its sales manager in 2006 and has been its general manager since 2014.

Next Month @ Creation

Graphic Systems & Virtual Sets

PANELLISTS

Dr Ahmad Zaki Mohd Salleh
Director Technical Operations
TV Networks
Media Prima

Phan Tien Dung
CTO
Vietnam Digital Television

Mike Whittaker
Executive Vice-President and CTO, Asia-Pacific and the Middle East,
Fox Networks Group Asia

Content creation involves the best cameras ... and more

While cameras continue to play a pivotal role in the capture of some of the most iconic moments in cinema and TV, the value of the supporting cast — including lighting and tripod systems — cannot be understated. **Shawn Liew** reports.

According to ARRI, Stellar re-imagines lighting control by automatically managing complex DMX settings, and by featuring control interfaces with "stunning graphic design".

The OCU-1 operator control unit is designed to help camera operators take control of lens functions, allowing them to take full control of their lenses when they want it.

While HBO's *Barry* is essentially a dark comedy about a Midwestern hitman (played by Bill Hader) who travels to Los Angeles to kill someone, there was nothing unilluminating in the way ARRI lit up the production of the TV series.

While the ARRI Alexa and Alexa Mini cameras, used in conjunction with the Angenieux Optimo Zooms, provided director of photography (DoP) Paula Huidobro with the visuals she was looking for, lighting also played an important role in conveying the visual look the creative team was after.

"I wanted the light to be as soft as possible, which allowed us to work relatively quickly and consistently," she explains. "My gaffer, Paul McIlvine, and I decided to go with a more old-school approach, using Fresnels, booklights and Chinese lanterns instead of LED technology, which has become the norm."

For day exteriors, they used the ARRI M18, ARRIMAXes and SkyPanels. "I like the versatility of the SkyPanels and I like the colour of the ARRI HMIs and how consistent they are. There were great tools to have," says Huidobro, who also highlights how they wanted the lighting to be "real". This, she says, led to the obsession with not having shadows that would take the viewer away from the faces or the comedy while still retaining some contrast. "We wanted to keep the light shaped in an interesting way. I didn't ever want to drift into flat comedic lighting, but I also avoided hard lighting for the most part."

They also used a lot of practical lights, both on location and fixtures built into the sets. "I always diffused and controlled them when they were off camera," says Huidobro. "A key to success in making our days was that we were able to build in a lot of lighting solutions into our sets." That included rigging "a beautiful soft box" into one of the main shooting areas

Recent users of the new flowtech100 tripod include renowned nature and wildlife photographer Thorsten Milse (right). On a recent trip to shoot the famed lemurs of Madagascar, Milse loaded up the flowtech100 with a Sachtler FSB 10 fluid head and his Canon EOS-1D X Mark II camera, equipped with a heavy 600mm zoom lens. Another recent user is Renea Veneri Stewart (above), co-owner of production company Rock Salt Media. She recently tested the flowtech100 in a weather lull during Hurricane Hector. Set up on a rocky area of the eastern Oahu shore, the flowtech100 supported a Canon EOS C300 cinematic camera with monitor and hood, mounted on a Sachtler Video 18 S2 fluid head.

— the actor's theatre — which she describes as "invaluable".

Also set to offer valuable support to professional lighting control is Stellar, a new intelligent app offered by ARRI. According to ARRI, Stellar re-imagines lighting control by automatically managing complex DMX settings, and by featuring control interfaces with "stunning graphic design".

Whether a large film with many scenes and set-ups, or a small project with just a few fixtures, Stellar is built to work in all scenarios, says ARRI. Coded intelligence and advanced communications make connecting ARRI SkyPanel and L-Series fixtures to the app "simple and straightforward".

Stellar is also the "final link" to a complete ecosystem of advanced lighting control products from ARRI. The SkyPanel features Art-Net, sACN, DMX and RDM implementations for a wide range of control options. Combined with SkyLink, a large rig of SkyPanels can be controlled wirelessly — Stellar further brings all these pieces together with intuitive controls that work in tandem with the Skylink, SkyPanel and L-Series hardware.

At IBC2018, ARRI also launched the OCU-1 operator control unit, designed to help camera operators take control of lens functions. An addition to the WCU-4 lens control system on the Alexa Mini, OCU-1 enables operators to over-ride and return focus, zoom and iris controls at the touch of a button.

Christine Ajayi, product manager, PCA electronic control system, ARRI, elaborates: "This is a simple device that does exactly what the name implies. It gives camera operators full control of their lenses when they want it."

Also new from ARRI is the Lightweight Matte Box LMB 6x6, the latest addition to ARRI'S LMB range. According to Philip Vischer, product manager, PCA mechanical accessories, ARRI, the LMB 6x6 will make short work of on-set challenges. "It's streamlined and light, and altering the various applications doesn't require any supplementary tools — that will make set-ups really quick and easy," he explains.

The LMB 6x6 is able to be used with gimbals, drones or Steadicam rigs when used in a single-filter configuration. It can be simply clamped to a lens or used with rod-mounts, either 15mm or 19mm studio rods, or — in conjunction with an adaptor — 15mm lightweight rods.

For Sachtler and Vinten, the Vintec Group companies encourage users to go with the flow, or more specifically, flowtech100, the latest addition to the flowtech carbon-fibre tripod range. Compatible with all major 100mm fluid heads, flowtech100 supports a payload of up to 30kg (66 pounds), making it well suited for heavy-duty electronic news-gathering (ENG), electronic field production (EFP), and a wide range of wildlife, commercial and documentary productions.

For instance, the flowtech100 was the choice of renowned nature and wildlife photographer Thorsten Milse when he recently went on a six-week trip to photograph the famed lemurs of Madagascar. On the Madagascar expedition, Milse loaded up the flowtech100 with a Sachtler FSB 10 fluid head and his Canon EOS-1D X Mark II camera, equipped with a heavy 600mm zoom lens.

He reflects: "In Madagascar, fast set-up was a critical requirement for capturing the lemurs, which move really quickly in the high treetops. Not only was flowtech100 incredibly fast and easy to set up and adjust, but it also allowed us to get to a really low position fast, which is really important for capturing those fleeting ground shots.

"With the lemurs, sometimes I only had a few seconds to get the shot. But I was able to approach with my camera and lens in one hand and the tripod in the other, open the legs with my foot, adjust the height, snap on the camera, and shoot."

With quick-release brakes located at the top of the tripod, the flowtech100 legs can be deployed simultaneously and adjusted automatically to the ground's surface — saving operators from having to bend over and manually adjust multiple brakes on each leg. Another key feature, particularly for photographing wildlife, is the flowtech100's ability to adjust almost instantly to heights ranging from 26cm-153cm.

Another recent user of the flowtech100 is production company Rock Salt Media, which deployed the tripod for the production of its *Family Ingredients* lifestyle programme, which showcases the many cultures that have shaped the Hawaiian Islands.

Renea Veneri Stewart, co-owner of Rock Salt Media, and executive producer/cinematographer for *Family Ingredients*, recently tested the flowtech100 in a weather lull during Hurricane Hector. Set up on a rocky area of the eastern Oahu shore, the flowtech100 supported a Canon EOS C300 cinematic camera with monitor and hood, mounted on a Sachtler Video 18 S2 fluid head.

Stewart says: "We're always on the lookout for tripods that are fast and lightweight, but still really strong and stable. After testing the flowtech100, I have no doubt it can provide the necessary support and stability for even heavier payloads — even in residual wind from a hurricane!

"The flowtech100 is not only fast and convenient, but you can also feel the quality and craftsmanship for which Sachtler and Vinten are known. It's going to become my go-to tripod."

Bringing "smart" to robotic camera systems is Shotoku Broadcast Systems. Leading this initiative is the company's SmartPed Robotic Pedestal, a fully robotic XY pedestal that addresses the creative and commercial demands of on-air environments. The three-wheel smooth-steer pedestal has recently been upgraded with multi-zone collision avoidance and detection systems, a precision-engineered, electro-mechanical steer/drive system, and a new height column that eliminates any need for pneumatic balancing.

Shotoku Broadcast Systems' Robotic Pedestal is a fully robotic XY pedestal that addresses the creative and commercial demands of on-air environments.

SmartPed also offers instant switchover between local/remote operation, which makes the pedestal versatile and easily operated in any application, according to Shotoku. No re-reference or calibration is required when switching between these modes and a pan bar-mounted local joystick enables easy control from the studio floor as necessary.

Shotoku has also introduced its SD and SE manual tripod series. The SD range has been developed to provide a quality, affordable system for handheld cameras. Available in two variants, the SD20 and the SD40 support 3kg and 5kg cameras respectively. The systems feature fixed counterbalance and drag systems tailored to the payload of the head, and come complete with two-stage tripod mid-level spreader and soft carry case.

The SE range, on the other hand, evolved from a concept of providing support with high functionality and wide-ranging applications for the extended range of camera systems available in the market today, says Shotoku. The SE80 and SE150 are the first products to be launched under the SE range, and both feature a high-quality drag system to ensure "smooth on-air moves", and a multiple level counterbalance system to provide accurate balancing for a wide range of cameras.

The SE80 supports up to 10kg payloads, while the SE150, up to 16kg — both come complete with aluminium or carbon fibre two-stage tripod, ground or mid-level spreader, and a soft carry case. APB

Focus on content creation with a unified Avid MediaCentral platform

Avid has unveiled a new Web-based version of MediaCentral, its media production and management platform. MediaCentral features a modular ecosystem design that can be customised to meet specific media production workflow needs. It also integrates functions — such as media ingest, logging, editing, graphics, playout, multi-platform distribution, asset management, storage and archive — all within a single user interface to accelerate media production workflows.

In this latest MediaCentral v2018.6 release, Avid has incorporated new enhancements across the full array of workflow modules, apps and services. Users can edit content in a timeline across all apps in MediaCentral Cloud UX, including the MediaCentral Search and Browse apps, empowering them to gain better performance and productivity. With further support for Avid DNxHR SDR format, users are able to work more intuitively with improved views and interface interaction, and develop third-party connectors to the platform.

Raymond Thompson, director market solution, broadcast and media, Avid, told *APB*: "MediaCentral is designed based on a microservices platform, and can be deployed in the cloud and on-premises. We've accelerated our delivery of open platforms, tools, apps, services and solutions to make it easier for users, so they can work faster on smaller budgets, and still retain viewers across all platforms."

One user of the MediaCentral platform is Danish broadcaster, TV 2, which will be updating its newsrooms with Avid news production tools and solutions. According to Avid, the MediaCentral platform will serve as the foundation for TV 2's news production, and will help enhance collaboration, increase efficiency and productivity, and provide a future path to the cloud for TV 2.

Raymond Thompson, director market solution, broadcast and media, Avid: "Avid MediaCentral platform is designed based on a microservices architecture, and can be deployed in the cloud or on-premises."

Tom Bjerre, CIO at TV 2, commented: "Together with Avid, we have a mission of building a modern, easy-to-use and flexible production system that publishes across many platforms. We appreciate the flexibility and openness of Avid's solution to enable third-party application to seamlessly plug into the platform."

With the Avid MediaCentral platform, TV 2 will develop new workflows to meet future requirements with a focus on collaboration and a story-centric approach across all aspects of the production cycle. The implementation of MediaCentral Cloud UX will also allow production teams located anywhere to access content through a user-friendly graphical interface.

To enable sound companies and performance venues to configure systems to meet a wide array of production needs, Avid has also added a new control surface, processing engine and I/O rack option for its expanded Avid Venue S6L unified live sound platform. The Avid Venue S6L-24C surface, Avid E6L-112 engine and Stage 32 I/O rack are the first releases out of six new components announced in April this year.

The fully modular Avid Venue S6L delivers "best-in-class functionality" for a wide range of applications including front-of-house, monitor, broadcast and theatre. According to Avid, it is the industry's only live sound platform that offers 100% software, hardware and show file compatibility, enabling engineers to scale systems up or down to meet their changing requirements for control, processing and I/O.

Shanghai Media Group chooses ChyronHego's virtual placement

Chinese media organisation Shanghai Media Group (SMG) has adopted Virtual Placement, ChyronHego's tool for incorporating striking virtual graphics into live broadcasts.

SMG is using Virtual Placement to strengthen its brand presence and create new revenue opportunities during its broadcasts of Super League games of the Chinese Football Association.

Yang Chao, design director, SMG, explained: "Virtual Placement is the industry's most sophisticated tool for placing eye-catching virtual graphics within a programme that not only grab the viewer's attention but enrich the acute nature of visual storytelling. When we looked for tools that could help us build our on-air brand and grow our viewership, we knew Virtual Placement would be ideal.

"Because Virtual Placement is so easy for our operators to maintain and use, it's opening up many different types of new advertising and revenue opportunities. It's our first ChyronHego product, but it won't be our last."

Virtual Placement uses advanced image-processing algorithms to analyse incoming camera movements in real time and add robust, tied-to-surface virtual graphics to live productions without the need for a specialist operator, expensive camera sensors, or lengthy calibration processes, according to ChyronHego.

Virtual Placement's Scene Tracking feature makes it possible to place virtual elements into a live scene to make them look physically real and in harmony with the environment into which they are projected. The solution is easy to learn and operate, and it can be used to augment practically any live broadcast scenario with virtual objects — from physical studio sets to much larger scenes such as sports arenas, racetracks or landscapes.

Ivy Wee, vice-president of sales, Asia-Pacific, added: "Just like broadcasters throughout Asia-Pacific, SMG is looking to generate more revenues in an increasingly competitive environment. That means engaging and exciting viewers who expect ever-greater sophistication in their graphics and programming.

"At SMG, Virtual Placement is a powerful tool for amplifying the company brand and grabbing the audience's attention through realistic virtual elements, which creates even greater potential for advertising placement revenue."

Shanghai Media Group (SMG) has adopted Virtual Placement, ChyronHego's tool for incorporating striking virtual graphics into live broadcasts.

Fujifilm rolling out new version of Fujinon XK6x20 zoom lens

The Cabrio 20-120mm lens is now available with or without an attached servo unit. Thomas Fletcher, director of marketing, Fujifilm Optical Devices Division, said: "Based on the success of our Cabrio series, many of our customers already have Cabrio drive units on other lenses. The 20-120mm Cabrio has an optimal focal range for a variety of shooting styles and is the entry point lens in the series.

"If purchased without the drive unit, customers still get the incredible optical and mechanical quality of a Cabrio — at an exceptional price."

Designed to be convertible between the video production and cinema markets, the Cabrio 20-120 features a flat T3.5 from end-to-end, with no ramping. It covers an S35-sized sensor (Super 35 format). Without the servo drive, it can easily accept industry-standard cine motors and matte boxes, according to Fujifilm.

Camera and lens supports providers such as Chroszeil are offering solutions to benefit users of the Fujifilm Cabrio 20-120mm zoom lens.

Just as third-party manufacturers developed accessories for the Fujinon MK lenses, camera and lens support providers are offering solutions to benefit users of the Cabrio 20-120mm without a servo. Among them, Chrosziel and Heden have designed lighter weight servo zoom motor solutions for the 20-120mm. "In reality TV, camera operators often need to hold the camera for eight to 10 hours a day. Saving a 20% of the weight of the lens is a big deal to an operator," explained Fletcher. "These lightweight third-party drives integrate seamlessly with Sony's FS series zoom controllable hand grip."

NTT Docomo is now deploying Sony's Crystal LED display system.

Sony delivers Crystal LED display system to NTT Docomo

Sony Business Solutions' Crystal LED display system is now providing "unprecedented picture quality" and an immersive viewing experience for NTT Docomo.

According to NTT Docomo, the key reasons for adopting the Crystal LED display system include its high dynamic range (HDR) capability, the reproduction of "smooth images" with a maximum rate of 120fps, and the flexibility to support "ultra-real" content of higher resolution.

According to Sony, the Crystal LED display system delivered to NTT Docomo is the "world's first" display system that comprises 216 units of ZRD-1 in a curved shape. By installing each display unit in a certain angle, it results in a display that is 14.5m in width and 2.7m in length, as well as curved at 180°. The curvature of the display provides a hyper-realistic viewing experience for audiences, with immersive visuals that cover the view of the audience, added Sony. Low latency and high-resolution live streaming is also possible with 5G transmission, which is expected to commence in Japan in 2020.

Sony Business Solutions, in its efforts to promote the technology, is participating in the Docomo 5G Open Partner Programme, an initiative to create a new 5G service provided by NTT Docomo.

CBS Sports upgrades AV cart for coverage of American football

Bexel, an NEP Broadcast Services company, has upgraded CBS Sports' Sideline Audio/Video Cart, which now includes a pop-up talent tent to protect on-air talent from unfavourable weather, and limit distracting venue noise during gameplay — while still maintaining its plug-and-play versatility for streamlining the acquisition of field audio and video feeds in all types of stadium sports productions.

Currently used on the sidelines of this season's CBS' National Football League (NFL) "A" and "B" games, the new addition of the talent tent can now be adapted and installed for all clients of the original Bexel Sideline Audio/Video Cart introduced last year. The unit is easily deployable with its pneumatic tyres and lightweight aluminium shell, and can be positioned on the sideline or end-zone of a sports field, or anywhere requiring quick and easy connections for video and audio feeds.

Lee Estroff, vice-president, account development, Bexel, said: "Our original Sideline Audio/Video Cart was a big success with broadcasters, giving them all the technology they needed in a compact package that is quick to set up.

"But through the use of the cart last season, we knew that it needed one additional element — the human element. So, we began developing a pop-up tent to protect on-air talent during the game. And just like its predecessor — the original Sideline Audio/Video Cart — there is nothing else like it in the industry."

Customised for each specific customer and use, the Sideline Audio/Video Cart is designed with the ability for all included equipment to be pre-wired within the cart. This significantly reduces set-up and strike times, said Bexel, adding that connectivity to the mobile unit is via single-mode fibre.

CBS Sports' upgraded Sideline Audio/Video Cart now includes a pop-up talent tent to protect on-air talent from unfavourable weather, and limit distracting venue noise during gameplay.

As with the original design, the cart's built-in patch bay makes it easy to monitor, troubleshoot and manage signal routing. It comes with integrated antenna poles, customised drawers for stowing gear, and a flat tabletop surface that can serve as an on-site workspace.

The standard cart measures 72 inches by 47 inches by 36 inches, providing ample rack space for shows of any size, and its rugged, weather-resistant housing protects gear in all types of conditions. The cart is powered via a single 110V outlet and provides an extended period of built-in UPS back-up power.

APB MANAGEMENT

Primestream welcomes Ernie Leon

Primestream has appointed Ernie Leon as the company's new vice-president of sales and business development. An industry sales executive with more than 15 years' experience, Leon will be responsible for Primestream's worldwide sales team, developing new business opportunities and solutions to customer needs. Leon was previously with Sony Professional Solutions, where he was national sales, business development executive manager (US).

DigitalGlue offers Creative.Space in storage

DigitalGlue is offering a new concept in media storage that the company says will shatter the paradigm of high-end storage solutions. Offered as an on-premise managed storage (OPMS) service, Creative.Space features a high-speed, high-capacity platform with "thorough and inclusive" 24/7 monitoring, technical support and next-day repairs. Creative.Space comprises several systems that have been tailored for different applications. These include the //BREATHLESS system, which was developed to target video production, VFX and content distribution networks.

Next Issue @ Management

Channel Branding Solutions

PANELLISTS

Fintan Mc Kiernan
CEO
Ideal Systems
South-east Asia

Patrick So
Regional Manager
Asia Pacific
Magna Systems & Engineering

Craig Johnson
Managing Director - Media
Nielsen

Integrating formats and standards into a cohesive workflow

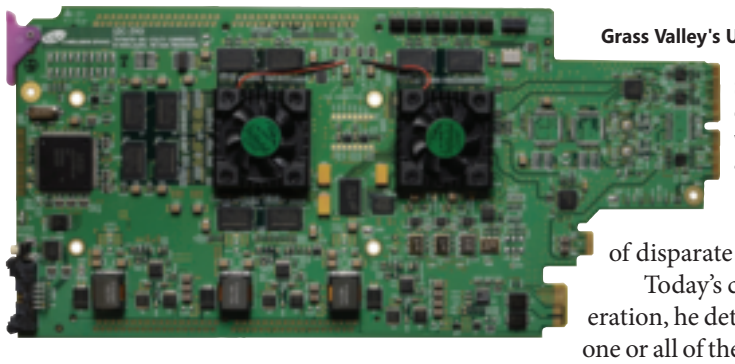
Because broadcasters today are operating in a multi-format environment, format converters are playing an increasing role in helping to overcome workflow challenges. **Shawn Liew** writes more.

A singular approach to broadcasting is simply not an option anymore — broadcasters today need to create specific content to meet the specific needs of certain segments of audiences; this, in turn, needs to be distributed over multiple platforms and devices.

The challenge does not stop there. Broadcasters today are tasked with handling an evolving range of production and distribution formats and standards, says Robert Stacy, general manager, APAC, AJA Video Systems. He tells *APB*: "Depending on the audience and markets they serve, they may need to shoot and deliver in 4K/Ultra HD (UHD), HD and/or SD and even high dynamic range (HDR), which is why conversion solutions have become so crucial to live production pipelines."

Traditionally, format converters were designed to help solve the transition from SD to HD, and vice versa. Today, however, it is critical for broadcasters and media organisations to be able to handle multiple formats, often running simultaneous SD and HD, or HD and 4K/UHD services, Jeremy Courtney, head of media processing Grass Valley, points out.

And as content services become more multifaceted, format converters are also solving a host of new challenges, he adds. "Today, format converters remain an important tool in the broadcaster's tool kit, handling 4K/UHD up/down-conversion, HDR conversion — including up-mapping from standard dynamic range (SDR) to HDR, down-mapping from HDR to SDR and cross-mapping from one HDR format to another.



Grass Valley's UDC-3901 module provides 3G/HD/SD up/down/cross-conversion with video, audio and metadata processing.

"Format converters are also central to bridging the gap between SDI and IP," says Courtney.

A good multi-format converter can be compared to a swiss army knife, suggests Bruno Bauprey, product manager at Analogue Way. "It must support any signal delivered by any source and convert it to match the workflow requirements. This implies that the multi-format converter has versatile input/output connectors and high-quality processing."

These functionalities, he highlights, are critical in a world where the resolution and quality of video content keep increasing. 4K/UHD, HDR and 8K are adding to the continuing switch, in some regions, of SD to HD, causing manufacturers to implement initial solutions using currently available technology, while being constrained by technical and cost limitations. Bauprey explains: "These solutions, such as HD-ready formats, 6G-SDI and quad-link 3G-SDI, are limited in terms of performance and ease-of-use.

"Now that more consistent solutions exist, broadcasters must be able to manage workflows, including an array of disparate equipment."

Today's conversion operation, he details, can imply one or all of these treatments: deinterlacing, frame rate conversion (FRC), colour space conversion (CSC) upscaling from SD resolutions to up to 4K/UHD resolutions, but also changes between standards — analogue, SDI, HDMI, DisplayPort, DVI and so on.

With so many factors to consider, what then are the key features broadcasters should look out for when making a format converter purchase today?

First of all, pay attention to the versatility of the product, including the supported input/output connectivity and the range of supported formats, advises Bauprey. "Then, just from a purely technical point of view, the equipment's latency and the signal quality are key features," he continues. "This can be easily explained by the fact that it is only a small link in the workflow. Consequently, it must help maintain the overall latency of the system as low as possible. Moreover, signal quality is also really important; for example, controlling the jitter for an SDI signal."

Another point to look out for, says Bauprey, is the conversion performance and the resulting video content. Because video processing is at the heart of format conversion, checking the quality of the de-interlacing/FRC/CSC scaling treatments is crucial, as it directly impacts what audiences see. "Too often, you can see badly de-interlaced camera feeds resulting in a disastrous comb effect," he cautions. "It is also interesting to keep an eye on functions like input switching, audio management or content cropping help."

In the constant drive to deliver a more compelling viewing experience and more content choices to consum-

> **"[A good multi-format converter] must support any signal delivered by any source and convert it to match the workflow requirements. This implies that the multi-format converter has versatile input/output connectors and high-quality processing."**
>
> **— Bruno Bauprey, Product Manager, Analogue Way**

AJA is addressing a growing demand for colour space conversions and HDR implementations with the FS-HDR, which is a versatile 1RU HDR/wide colour gamut (WCG) HDR to SDR, SDR to HDR and HDR to HDR converter and frame synchroniser that supports real-time HDR/SDR transforms, as well as 4K/UHD/2K/HD up, down, cross-conversions.

ers, the ability to deliver higher resolution services and support more signals is vital, says Grass Valley's Courtney, who also identifies HDR as being central to the strategy of many content providers. HDR, he adds, enables them to deliver a perceivable improvement in image quality in the home. "HDR conversion, 4K/UHD support, multi-channel processing and IP interfaces are capabilities that broadcasters need to help future-proof their infrastructures and workflows."

One factor to consider when making any format converter purchase is the quality of the resulting output, says AJA's Stacy. "This is an area where AJA excels, providing production-proven scaling technology developed and backed by AJA's qualified engineering team."

AJA offers an extensive line-up of conversion tools to help professionals meet day-to-day infrastructure requirements — from its mini-converters to FS conversion and frame synchronisers and family of openGear compatible cards. "Our goal is to make it as simple as possible for broadcasters to integrate varying formats and standards into their productions," Stacy informs.

Other considerations to take into account, he adds, include density, reliablility and metadata transfer. The latter, in particular, is key if using closed captions. "For example, how can you ensure CEA-608 to CEA-708 will be passed correctly?" asks Stacy. "In this case, evaluating products like AJA's FS1-X frame sync appliance would be a smart tactic. It's a robust up, down, cross-converter that supports motion adaptive linear conversion for optimal results, regardless of the source."

He also believes that density is crucial in evaluating the right conversion solution, which is why AJA has developed tools like the openGear-compatible OG-UHC 3G-SDI up, down, cross-converter and OG-4K2HD 4K/UHD to HD 3G-SDI down-converter. "With a standard openGear frame, you can get 10 of these cards in a single chassis, but if you require throw downs, both products are also available in a small robust mini-converter chassis for the same price," Stacy explains.

Moreover, AJA is also addressing a growing demand for colour space conversions and HDR implementations with the FS-HDR, which is a versatile 1RU HDR/wide colour gamut (WCG) HDR to SDR, SDR to HDR and HDR to HDR converter and frame synchroniser that supports real-time HDR/SDR transforms, as well as 4K/UHD/2K/HD up, down, cross-conversions. FS-HDR combines AJA's FS frame sync/conversion technology with video and colour space processing algorithms from the Colourfront Engine. "It not only supports comprehensive signal conversion, but also allows users to convert various camera Log formats to HDR broadcast standards, as well as to/from BT.2020/BT7.09," Stacy concludes.

Analogue Way is addressing broadcasters' format conversion needs with the VIO (Versatile Inputs/Outputs) 4K, which natively supports formats up to 4K/UHD 30Hz 4:4:4 10 bits and integrates seven inputs and one multi-plug output.

For Grass Valley, the company provides some "very advanced" modules for format conversion through its Densité and IQ ranges. The software-defined XIP-3901 dual-channel 4K/UHD video processor with HDR conversion module, for example, provides all the conversion functions needed for live production, supports SDI interfaces and dual-channel 25 GbE SFP cages for future IP I/O migration. The compact UDC-3901 module, meanwhile, provides 3G/HD/SD up/down/cross-conversion with video, audio and metadata processing. Both the UDC-3901 and XIP-3901 can provide up to 24 channels of video processing in the 4RU Densité 3+ FR4 frame.

For high-density, multi-channel applications, Grass Valley also offers the IQUDC31, which can provide up to 40 channels of conversion in 4U rack space. For 4K/UHD applications, the company offers the IQUDC40, which provides up, down and cross-conversion with HDR mapping. "Last but not least, our KudosPro range of standalone boxes deliver comprehensive, reliable and cost-effective conversion and processing with the quality you expect from Grass Valley — even in IP environments," says Courtney.

Analogue Way, on the other hand, is addressing broadcasters' format conversion needs with the VIO (Versatile Inputs/Outputs) 4K, a new-generation product, according to the company's Bauprey. VIO 4K natively supports formats up to 4K/UHD 30Hz 4:4:4 10 bits and integrates seven inputs and one multi-plug output. It contains two optional video slots to add up to two inputs and outputs that handle 4K/UHD 60Hz 4:4:4 10-bit signals, thanks to DP1.2, HDMI 2.0 and 12G-SDI plugs. Equipped with a genlock input and its loop-through output, the VIO 4K can easily be integrated into a broadcast workflow.

Bauprey concludes: "From a functional point of view, it converts one input simultaneously to its outputs with ultra-low latency, each output having fully independent settings from the others.

"It also includes seamless switching capabilities between its input and native audio management with an optional expansion slot for Dante networking." APB

Format conversion capabilities in KVM switches deliver benefits to TV production

BY TERENCE TENG

The broadcast industry is constantly evolving. Over the past few years we have seen many changes, and one of the most marked changes has been the incorporation of non-broadcast signal formats into the broadcast workflow. Video signals common to computer, domestic TV and AV sectors including HDMI, DVI and DisplayPort are now regularly transmitted and viewed by TV production crews and editing staff.

Historically, broadcast signals were superior to those used in AV and computing. Analogue component, composite and VGA images were of insufficient quality to create and produce top quality TV content. For this, and other reasons, the broadcast industry used SDI to interconnect broadcast devices.

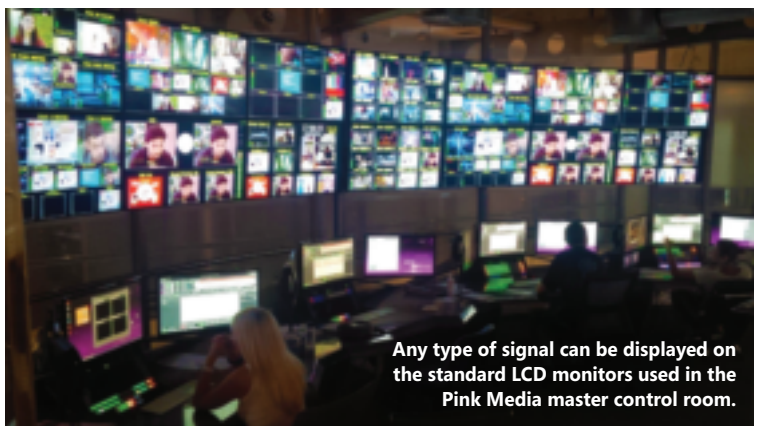
However, the widespread introduction of digital transmission over single-wire, high-bandwidth cabling in AV systems raised the quality of images to the point that it became interesting to the broadcast industry. Many professional AV devices deliver the quality of an image required by traditional broadcast studios and post houses — but at a much lower cost.

Although the main broadcast chain continues to be built around HD-SDI, broadcast engineers began to deploy these more attractively priced devices for general monitoring and control. Modern galleries and outside broadcast (OB) vans today use a few standard off-the-shelf LCD displays, rather than a greater number of Grade 2 SDI monitors to view camera and server images. They use PCs as video storage devices and as platforms to run the applications needed to process and manipulate content.

The AV and computing industry though has never standardised on a single format. And herein lies a problem for broadcasters: a multitude of different types of signal needs to be moved around, switched, transmitted and displayed whenever and wherever required, without corruption, delay and fear of loss of image or reduction in quality.

To do this requires flexible switching and interconnection equipment. However, many of the basic devices that do this only work with signals of a single type of signal — which means that several stages of format conversion are necessary. Every signal has to be converted to a single format and then often converted to another to be displayed. Conversion causes delay and signal corruption: cost and complexity increase and savings disappear.

Keyboard, video and mouse (KVM) systems, such as the IHSE Draco tera based on modular I/O units, can directly accept any type of signal and output any type — whether that is the same as the original source, or not. This precludes the need for additional off-board conversion units with their associated cost and complexity. An HDMI monitor can equally display a signal from a VGA computer as a DisplayPort editing station or an SDI feed from a camera. It can also switch between them instantly and without eroding picture quality.



Any type of signal can be displayed on the standard LCD monitors used in the Pink Media master control room.

Many broadcasters and edit suites now use this technology within their production facilities and benefit greatly from the convenience and effectiveness offered by the KVM switching system. It provides staff with the ability to access and view images, and control source devices from remote workstations — adding additional capability to their operations.

An example of this in use is at Pink Media Group's studios in Belgrade. A large KVM switch delivers a multitude of video content around the facility: to offices, edit suites and to the master control rooms (MCRs), as well as to a large 34-screen videowall. Signals from DVI, SDI, DP, VGA and other sources are fed through the switch to SDI multiviewers and onto the screens. The whole screen can be changed quickly and easily to suit individual programmes.

The result is a flexible and controllable solution that is affordable and highly effective, allowing Pink Media to present a professional and modern image to their viewers.

Terence Teng is managing director, IHSE APAC.

APB DISTRIBUTION

10 years of Boxx TV

This year, Boxx TV is celebrating a decade of designing and supplying digital microwave solutions to the broadcast industry. The company made its mark in the industry with the launch of the Boxx Cobalt RF transmission system in 2008. Two years later, the Boxx Meridian HD wireless system was introduced, and has been deployed for several live productions, including *Australia's Got Talent* and *The X Factor*. Scott Walker, co-founder of Boxx TV, added: "We are now taking our expertise and knowledge gained from operators in the field to develop the industry's first solution for 4K/Ultra HD RF transmission."

NEP acquires SIS Live

NEP Group has acquired SIS Live, a provider of connectivity services and a subsidiary of UK-based Sports Information Services (SIS). The acquisition is said to complement NEP's Broadcast Services and Media Solutions businesses, strengthening the company's support of live sports, broadcast and entertainment clients across the UK, Europe and worldwide. Following a short transition period, SIS Live will be rebranded as NEP Connect, which will serve clients globally as part of the NEP Worldwide Network and go to market under the NEP brand.

Next Month @ Distribution

Broadcast Satellite Encoders and Modulators

PANELLISTS

Martin Coleman
Executive Director
Satellite Interference Reduction Group

Amitabh Kumar
Director, Corporate
Zee Network

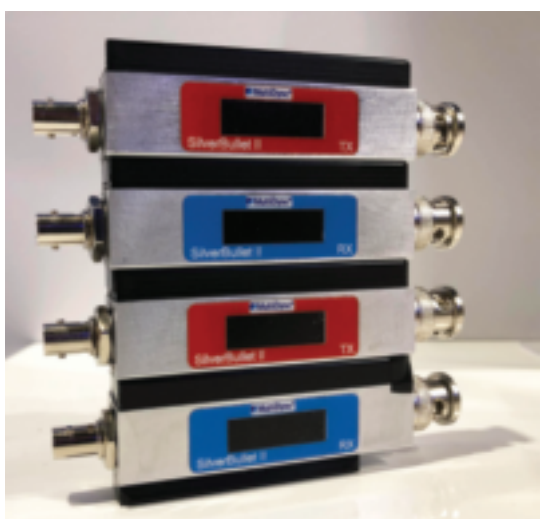
Louis Boswell
CEO
AVIA
(Asia Video Industry Association)

Sending the right signals to its destination

In any broadcast infrastructure, the cabling systems form the foundation for direct communication between one piece of equipment to another. **Josephine Tan** discovers how these cables interconnect over distances while managing the ever-increasing bandwidth requirements.

Cables are important bridging equipment that link all systems and applications together within a network infrastructure. Besides its primary role of transmitting signals, these communication cords have to also be equipped with quicker speed while running across distances for the signals to ultimately reach its assigned destination.

In an attempt to reduce configuration issues and strengthen connections for fibre-optic transport for live event production, CP Communications purchased and installed multiple VF-9000 bulk fibre transport systems from MultiDyne Fibre Optic Solutions. The US-based solutions provider for live event production installed the VF-9000s in its HD-11 and HD-21 RF production trucks to address the per-show scalability and technical limitations of their previous fibre solutions.



The MultiDyne SilverBULLET series is a miniature, fibre-optic link and signal conversion solution, and features 12G capabilities for high-bandwidth transmission.

The VF-9000 has enabled a host of new technical services for CP Communications, including support for native 3Gbps signal transport on HD-11 and HD-21. According to MultiDyne, 3Gbps transport is a requirement for sports productions that CP Communications routinely manages for US broadcasters such as Fox, NBC and The Golf Channel.

The installation of MultiDyne's VF-9000 allows CP Communications to natively accept 3Gbps camera feeds over RF into its fibre transmission infrastructure, and is downward compatible for HD feeds. Furthermore, the VF-9000 provides the flexibility to hot-swap, add or reduce small form-factor plugable (SFPs) to meet specific production requirements.

The VF-9000's value proposition is extended through automatic recognition of SFP module connections as inputs or outputs, as well as by format and application. The flexible architecture, MultiDyne adds, allows CP Communications to have an imbalance of inputs and outputs based on the needs of each production, instead of being limited to a certain number of each.

In addition to video and Ethernet SFPs, the VF-9000 allows CP Communications' production teams to transport MADI audio as part of the video feeds. Following automatic recognition, the VF-9000 then transitions to the desired set-up upon coming online while eliminating additional configuration steps.

CP Communications, a US-based solutions provider for live event production, has installed MultiDyne's VF-9000 bulk fibre transport system in its HD-11 and HD-21 production trucks.

Kurt Heitmann, CEO of CP Communications, comments: "There is enormous value in not having to manually communicate what is an input versus an output during configuration. Live production moves very fast, and the VF-9000's automatic recognition features remove what was often a very time-consuming process.

"Before, the process required adding an SFP and assigning it to the corresponding BNC, and then programming the connection as an input or an output. In addition, my cable lengths are now shorter, and there is no need to re-patch the entire system from show to show."

The VF-9000 delivers multiplexer features by combining up to 18 signals over one single-mode fibre for signal transportation. Packed within 1RU, the VF-9000 returns 2RU spaces that CP Communications' previous systems absorbed in each truck, thus allowing more space for additional RF equipment.

In both HD-11 and HD-21 trucks, the VF-9000 integrates within the complete RF infrastructure, which includes a routing system, mesh technology, as well as wireless cameras and microphones. The solution also connects to signal monitoring systems on both trucks, allowing operators to keep an eye on the health and performance of each feed and connection.

Fibre-optic cabling is said to offer greater bandwidth over long distances. And as more broadcast facilities move to IP, there is a lot of concern about managing the high-bandwidth requirements associated with formats such as 4K/Ultra HD (UHD), high dynamic range (HDR) and even 8K, says Frank Jachetta, president of MultiDyne.

He tells *APB*: "Fibre is really agnostic. It can take in that high-bandwidth data at one end, and receive and decode it at the other. There is a strong value proposition in the role that fibre transport can play in managing these data rates in an IP world.

"Although fibre has the bandwidth to accommodate 4K/UHD, 8K and HDR, their higher data rates translate to shorter distances. MultiDyne has been expanding its range of repeaters for 12G single-link transport, which cannot replicate the same distance that a 3G quad-link architecture can achieve."

At IBC2018, MultiDyne unveiled its next-generation SilverBULLET series. The miniature, fibre-optic link and signal conversion solution features interlocked mounting, centralised power and built-in OLED monitoring that enhance ease of use and systems management. The SilverBULLET series is packed with 12G capabilities for high-bandwidth, single-link transport to and from any video source.

"12G is now a reality; it is no longer a buzzword," Jachetta claims. "Whereas 3G took a while to catch on, 12G was more immediate. The cumbersome elements of moving four signals as a quad-link are eliminated. They have been replaced with the distance limitations of 12G, a problem we are already prepared to solve within our current product range."

Other features packed within the SilverBULLET include built-in cable equalisation and re-clocking, optimise signal integrity across all short- and long-distance transport, removing the presence of jitter from existing signals. The product's integrated OLED monitoring further provides readings on jitter rates, signal type and optimal power, among others.

The daisy-chained mounting options and centralised power are key differentiators from previous SilverBULLET generations, according to Jachetta. At only three inches in length, the SilverBULLET connects to the back of the camera, monitor or other video source, with the ability to add more units with additional cabling, he adds.

"SilverBULLET makes it simple for users to attach and detach multiple units to meet the needs of any production," he says. "A camera operator with four stereo outputs can daisy-chain four units together, and support multi-channel production off a single, self-contained power supply. It can scale much larger from there, without requiring multiple wall warts to power the devices."

The SilverBULLET is also available with a 1RU tray to house up to 24 devices, allowing the product to be deployed for fixed broadcast and production studio requirements, along with its portable applications in sports production, remote camera links, pre-fibred venues and interconnects for mobile production trucks.

Another company supporting 12G-SDI technology is Canare, which is offering the BCP-D series under its 12G-SDI product portfolio. The BCP-D series is SMPTE ST 2082-1-compliant, and is capable of managing 4K/UHD signals.

Canare has also developed the L-CUHD series of coaxial cables. The flagship model of the L-CUHD series is the L-5.5CUHD, which is designed to transmit 12G-SDI signals over a distance of 100m. Other members of the L-CUHD series are the L-3.3CUHD and L-8CUHD, which feature a diameter of 5.5mm and 11.1mm respectively.

Under its 12G-SDI product portfolio, Canare has included the BCP-D series, which is SMPTE ST 2082-1-compliant, and is able to manage 4K/UHD signals.

Additionally, the company has been in close collaboration with Japanese public broadcaster NHK, supporting the network's TV productions with its cables and connectors.

Jun-Ichiro Ohno, president of Canare Electric, says: "Playout and studio installations are definitely going in the direction of IP. File-based transmission, IP routing and monitoring are the basic technologies at every TV station or playout centre, and have been for many years.

"Mobile production, on the other hand, is still using broadband technology, and there are plenty of 3G-SDI OB trucks all over the world. Even the new 12G-SDI 4K/UHD trucks still employ a lot of copper cables."

For Argosy, the company recently signed a deal with Optical Cable Corporation (OCC), a supplier of fibre cable assemblies. Under this agreement, OCC will supply multi-channel cables, with as many as 48 fibres in a flexible but rugged jacket.

Argosy, which owns extensive clean room facilities, will cut the cable to length and add protective connectors and cable reels. The resulting assemblies can be run in location and provide resilience to the elements, and to heavy vehicles driving over the cables — as is typical in OB environments.

Earlier this year, Argosy also entered into a strategic partnership with Barnfind Technologies, which sees the former adding the BarnMini range of fibre converters to its inventory.

Chris Smeeton, managing director of Argosy, explains: "The advantage of the BarnMini range is that they just work — they are plug, play and forget. No need to monitor or manage, just put them in the signal path and they will perform. This is a particular bonus in some of the large-scale AV installations we are now collaborating on, and which will be expected to run unattended once installed."

The BarnMini range is based on a compact device, which provides conversion, particularly between fibre and copper cables. Another feature of the range is that additional functionality can be implemented by the use of SFPs.

Josh Simons, director at Argosy, adds: "Fibre will not replace copper in the short- to medium-term anyway. Copper has its place, and the choice is application-driven.

The agreement between Optical Cable Corporation (OCC) and Argosy encompasses the former to supply its bulk cable to the latter, which has the facilities to add connectors and cables to the specific requirements of broadcasters and touring show production companies.

> "Fibre will not replace copper in the short- to medium-term because copper will have its place, and the choice is application driven."
>
> **— Josh Simons, Director, Argosy**

"The crux of the problem is balancing the equation of bandwidth over distance because copper simply cannot manage long distances. Broadcasters need to ask what they can achieve with copper, and if they can achieve it better with fibre."

He gives an example where copper is able to perform with some applications, such as when a studio and gallery are located next to each other. But for other applications, such as where two OB trucks are unable to be parked close together, he suggests employing fibre as the cabling choice, as it offers robustness and a longer run length.

Simons continues: "There will always be a space for copper in broadcast, where legacy systems must integrate with newer systems. Even if the predominant infrastructure is fibre, the peripherals are likely to require copper connections. Therefore, the ability to convert on and off copper is crucial.

"Additionally, broadcasters are placing more data through fibre, and can now use it in dynamic mode, with multiple ways of sending a variety of signals down that fibre pipe. A 100Gb fibre pipe can handle up to 16 channels, for example, and I think it is safe to say that a single signal in the broadcast field would not exceed the capacity of a single-mode fibre connection in this day and age." APB

APB X-PLATFORM

iflix now available across Vewd-enabled devices

Vewd and iflix have established a strategic partnership to enable the latter's over-the-top (OTT) platform available across Vewd-enabled devices. iflix worked with the Vewd team to certify the iflix app for the Vewd ecosystem. With this certification, Vewd said, the iflix app can be deployed across connected TVs and set-top boxes without challenging technical integration. Aneesh Rajaram, CEO of Vewd, added: "Having iflix to join the connected TV ecosystem underscores our commitment to providing the richest catalogue of key apps on connected TV devices. Now more than ever, Vewd can provide the industry's most comprehensive content offering for smart TV manufacturers and pay-TV operators."

Ultravision launches IPTV service with solutions from Broadpeak

Ultravision, a Mexican pay-TV operator, has selected Broadpeak's solutions to power its new IPTV multi-screen service. The company will rely on Broadpeak's BkM100 video delivery manager, BkS400 HTTP video cache servers and BkS350 origin packager. By monitoring live and on-demand content, as well as capturing popular content based on usage patterns, Broadpeak said its solutions are able to reduce Ultravision's content delivery costs while providing quality of experience (QoE) to subscribers on every screen.

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Content goes even more mobile in the 5G universe

5G is theoretically faster than current Internet speeds, and is poised to power the Internet of Things (IoT) world. But, how transformative can 5G be for the broadcast space? **Josephine Tan** finds some answers.

5G has the potential to radically improve the outside broadcast (OB) landscape by providing a cost-effective and flexible alternative to satellite uplinks for the delivery of 4K/Ultra HD (UHD) content, declares Arun Bhikshesveran, CMO of MediaKind.

Live content, Bhikshesveran tells *APB*, requires everything to work "flawlessly" in real time so 5G, as a complement to existing mechanisms, can help solve some of the challenges while empowering enhanced content creation, distribution and consumption behaviours.

For instance, at the 118th golf US Open Championship in June this year, MediaKind, formerly known as Ericsson Media Solutions, alongside partners such as Intel and AT&T, collaborated with Fox Sports and Fox Innovation Lab for the streaming of the golf tournament in 4K/UHD over 5G to viewers nationwide.

The 5G wireless technology transmitted 4K/UHD high dynamic range (HDR) images from two Fox Sports cameras positioned on the par-3 seventh hole at the Shinnecock Hills Golf Club in New York through the Fox Sports production trucks to viewers at home. The offering was part of the "Featured Hole" enhancement, which was available on the US Golf Association's website, DirecTV and the Fox Sports App.

For this project, Ericsson provided the 5G radios, baseband, simulated network core, and 4K/UHD video encoder and decoder. Bhikshesveran says: "This demonstration showed that the technology worked in an actual live environment. The most significant takeaway from the trial was that all the technology elements worked as expected with extremely low latency and no packet loss.

"This included challenging tasks such as real-time conversion between 4K/UHD Hybrid Log-Gamma (HLG) and HEVC/H.265 formats. The success of this test also highlighted the new viewing experiences that 5G and 4K/UHD can deliver when paired together."

In a joint statement, the companies point out that 5G technology has the potential to provide "disruptive abilities" to broadcasters and consumers alike, and this wireless technology will eventually enable multi-gigabit speeds with ultra-low latency.

> "The wireless streaming of live 4K/UHD HDR contribution video at sports events is helping to drive a revolution in how video is created, distributed and consumed."
>
> **— Arun Bhikshesveran, CMO, MediaKind**

Melissa Arnoldi, president of AT&T Technology and Operations, adds: "The high-speed and low-latency delivered by this trial allow the cameras to move without being restricted by cables and create a unique filming environment. We believe live sports will eventually be transformed by 5G — whether it's virtual and augmented realities for those watching from afar, or how connected sensors could help analyse golf swings, wind conditions, even the speed of greens for the golfer in future US Opens."

Key characteristics of 5G — such as the enhanced bandwidth, low latency and inherent multicast capabilities — will be extremely beneficial to broadcasters, according to Bhikshesveran. "The benefits accrue on both sides of the equation: creation and consumption."

Suggesting that 5G represents a revolution in how sports and media entertainment is created, he points out that the technology enables the positioning of cameras in locations without the burden of wired or satellite connections in a new capability. For instance, such cameras can be leveraged to film footages that were able to be captured previously due to the tethered location of cameras. These captured content can then be used in addition to the traditional capture mechanism to produce engaging and immersive experiences.

Bhikshesveran explains: "It is possible to imagine a sports field or arena equipped with 4K/UHD and 5G-enabled broadcast cameras, or smaller flypacks, which will allow broadcasters to deploy more capture angles and positions for electronic newsgathering (ENG) and sports without the need for on-site infrastructure.

"By removing the limitations of satellite connectivity, broadcasters can start to experiment with new media experiences and ways of delivering content. The wireless streaming of live 4K/UHD HDR contribution video at sports events is helping to drive a revolution in how video is created,

Key characteristics of 5G — such as the enhanced bandwidth, low latency and inherent multicast capabilities — will be extremely beneficial to broadcasters.

"The introduction of 5G could open up a worldwide market with millions of smartphones and tablets acting as potential TV receivers able to combine live TV services, media libraries, social networks, and many other media services."

— Manfred Reitmeiner, Senior Director of R&D Transmitter Systems, Rohde & Schwarz

distributed and consumed. For example, body cams on athletes or driver cams could offer real-time virtual reality (VR) experiences, which brings viewers closer to the real thing."

And on the consumption side, he adds that the combined effect of such live productions delivered on multiple screens using the best possible delivery mechanism opens up new opportunities to engage people and provide new viewing experiences. "5G — and even 4G — can play a role in delivering such experiences over either fixed-wireless last-mile connections or full portability in mobile-first societies," he concludes.

A 5G test site for broadcasting has been set up in the Bavarian Oberland as part of the Bavarian research project, 5G Today. Under the leadership of the Institute for Broadcast Technology (IRT), project partners Kathrein and Rohde & Schwarz (R&S) are investigating large-scale TV broadcasts in the Further evolved Multimedia Broadcast Multicast Service (FeMBMS) mode over 5G networks.

The project is supported by associated partners Telefónica Germany and Bayerischer Rundfunk, the Bavarian broadcaster who is operating the 5G FeMBMS broadcast network as a test site at its transmitter sites.

Manfred Reitmeier, senior director of R&D transmitter systems at Rohde & Schwarz, explains: "The aim of the research is to enable the efficient distribution of broadcasting signals combined with attractive services in the network of the future. The trial focuses on the technical aspects, such as network parameters, antenna design and propagation models. Therefore, field measurements, results analysis and planning are demanded."

Within the framework of the 5G Today research project, R&S has successfully commissioned the dynamic single-frequency network (SFN) with FeMBMS signals in the lab. LTE broadcast, also known as FeMBMS, was specified in 3GPP Release 14 in mid-2017. The upgraded standard supports new options for broadcasting to LTE-enabled mobile user equipment such as smartphones and tablets. It allows for the high power high tower (HPHT) applications in downlink only mode.

These new features make it possible to utilise the full signal bandwidth for multicast and broadcast applications. Moreover, 3GPP Release 14 defines an extended cyclic prefix, corresponding to the guard interval in DVB-T/T2, and modes to enable operation without SIM cards, which is necessary for the broadcast application, says R&S.

The R&S FeMBMS transmission addresses broadcast applications for video and IP data in HPHT topologies with bandwidths of 5MHz and 10MHz. With this breakthrough, the company emphasises its commitment to the new technological perspectives arising from the standardisation of FeMBMS, thereby demonstrating the potential held by 5G broadcast for applications such as TV services delivered to mobile user equipment and connected cars, and for the Internet of Things (IoT) applications.

"We are not only talking about 5G broadcast — we are also investing in it, which underlines the commitment of R&S into that technology. The new 5G network standard is a key technology for the future when vehicles become highly automated, and devices are networked with each other in the IoT," Reitneier says.

"5G also offers great potential for efficient distribution of media content. The introduction of 5G could open up a worldwide market with millions of smartphones and tablets acting as potential TV receivers able to combine live TV services, media libraries, social networks, and many other media services."

He also sees 5G as having "good chances" on the user side, and elaborates: "5G broadcast is an additional benefit on 5G devices without additional effort in the receiver and allows innovative, attractive media services, such as through the cost-effective combination of traditional linear TV with the growing market of associated on-demand services.

Partners of the 5G Today research project, including Rohde & Schwarz, test broadcasts from the Wendelstein broadcasting station.

"The cost of distribution must be transparent, reliable and controllable. Although it is easy to think of the challenge of deploying a 5G broadcast system as a link between a handset and a base station, there is an extensive hierarchical data infrastructure required to enable data and voice services around the globe. This deployment management presents a significant challenge and huge investment by broadcasters and telecom operators alike."

Although 5G has its advantages in enhancing content creation and distribution, more spectrum will be needed to support wireless carriers to successfully roll out this technology, Rich Redmond, president and managing director of GatesAir, emphasises.

While 5G offers additional payload, Redmond explains that wireless carriers will not only require more spectrum, but also spectrum across different frequencies. "Although higher-frequency spectrum is available today for many wireless carriers, the propagation at lower frequencies is more ideal for building penetration, for example. That ultimately makes network deployment more cost-effective, so carrier demands for more spectrum will continue," he adds.

This, however, is being alleviated with the development of the next generation of broadcast standards — such as ATSC 3.0, DAB Radio and DVB-T2 — which are equipped with advanced compression capabilities, and offer audio and video delivery in decreased bandwidth requirements.

Hence, even as demand and network capacity needs escalate, Redmond believes that these standards and technology will enable the delivery of content with smaller bandwidth requirements.

From the GatesAir development standpoint, the company has been moving down a path of innovation with software-driven exciters that allow users to migrate to new standards. And when this takes place from a spectrum standpoint — moving from one frequency to another — its broadband design allows relocation to new channels to be "simple and straightforward".

For instance, the Maxiva XTE exciter, at the core of GatesAir's modern TV and radio transmitter portfolio, provides an upgrade path without having to change out a significant amount of existing infrastructure, says Redmond.

Also, he does not view 5G as a replacement for other distribution methods, but is simply another avenue to leverage for content delivery. The one-to-one connection of most wireless networks has significant limitations, especially when it comes to immediate, real-time consumption of sports events, breaking news and emergency information.

He says that although this is fine when splintering content for consumers who are watching many different things, when millions are viewing the same programme at the same time, the one-to-many broadcast model remains the best avenue for real-time rich media and compelling content.

Redmond concludes: "The continued evolution of mobile infrastructure as a wireless data network will allow the media and entertainment industry to deliver a broad variety of IP content to consumers. This includes the ability for content creators to seamlessly distribute video, audio and other digital services versus having to go through cable or satellite systems.

"5G builds on what people are doing today in the mobile universe. Consumers worldwide are watching video/audio content on their mobile devices. As the media landscape evolves, 5G is the kind of evolution that content creators and service providers need to deliver greater capacity and flexibility across mobile networks. It is another pertinent distribution method." APB

"5G builds on what people are doing today in the mobile universe ... As the media landscape evolves, 5G is the kind of evolution that content creators and service providers need to deliver greater capacity and flexibility across mobile networks."

— Rich Redmond, President and Managing Director, GatesAir

Global demand for content growing

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Worldwide paying SVoD subscriptions will increase by 409 million between 2017 and 2023 to a total of 777 million, according to Digital TV Research.

Pay-TV and subscription video-on-demand (SVoD) subscriptions worldwide will reach 1,877 million by 2023, up by 505 million (37%) from 1,372 million at end-2017.

Reporting these figures, Simon Murray, principal analyst at Digital TV Research, said: "China is the brightest star by adding 171 million subscriptions during this period to take its total to 610 million. Its pay-TV total will 'only' grow by 32 million to 375 million, but SVoD will rocket by 138 million to 235 million subscriptions.

"India will add a further 49 million pay-TV and SVoD subscriptions to take its total to 210 million in 2023."

Emphasising the continued shift in viewing habits, Digital TV Research also reported that worldwide paying SVoD subscriptions will increase by 409 million between 2017 and 2023 to a total of 777 million. Eleven countries will have more than 10 million SVoD subscriptions by 2023, with China and the US accounting for more than half the world's SVoD subscriptions.

Digital TV Research also predicted that China will have the most SVoD subscriptions by 2019, and by 2023, the country will have 235 million SVoD subscribers — up from 97 million in 2017.

Murray continued: "The US will have 208 million SVoD subscriptions by 2023, up by an impressive 76 million on 2017 despite its relative maturity. [However], its share of the global market will fall from 36% in 2017 to 27% by 2023."

By 2023, Digital TV Research expects Netflix to contribute 192 million subscriptions (25% of the global total), while Amazon Prime Video 120 million (15%).

Overall, SVoD revenues will reach US$69 billion by 2023, up by nearly $44 billion since 2017. The US will remain the SVoD revenue leader by a "considerable distance", adding $17 billion between 2017 and 2023 to take its total to $29 billion.

Bitmovin sets up Benchmark tool for optimal encoding

Bitmovin has launched the Per-Title Ladder Benchmark Tool, an online resource for any video content owner or network operator to receive guidance on the optimal over-the-top (OTT) encoding configuration for their content.

David Godfrey, vice-president and general manager, Asia, Bitmovin, told *APB*: "One of the biggest issues in online video today is that it does not always rival broadcast in terms of quality. We do not believe that technology should be a reason to deliver poor experiences to consumers, which is why we have created the Ladder Benchmark Tool.

"The Ladder Benchmark Tool has been designed to help the industry identify the best quality and bitrate combination for each piece of content. A synthesis of industry standard practices and tools combined in a user-friendly way, this solution enables users to benchmark assets and predetermined fixed ladders."

The Per-Title Ladder Benchmark Tool incorporates Per-Title Encoding, which offers automated ladder (a set of individual encoded streams corresponding to a given asset or live stream) creation intelligence for video-on-demand (VoD) services, optimised by content type to achieve video quality benefits while lowering total cost of ownership.

When paired with Bitmovin's three-pass encoding technology, this approach maximises video quality for content, empowering operators to enhance their brands and VoD offerings, said Bitmovin.

The tool also provides bandwidth and video quality data required to optimise any existing encoding technology. New users can use the tool up to 20 times to upload assets representing their typical content to receive an assessment of their chosen bitrate ladder, as well as a content-specific bitrate ladder obtained through the Bitmovin Per-Title Encoding algorithm.

"The ultimate objective of our tool is to optimise distribution to the consumer via a video player, where there is a strong need to deliver a great picture with minimal bitrate ratio," Godfrey added. "With this tool, the industry can benchmark the total cost of operation with data, such as bitrate and storage costs, as well as video quality, measured in peak signal-to-noise ratio (PSNR). The user can then identify the most effective ways to deliver a best-in-class experience while reducing the delivery and storage costs associated with the content."

Bitmovin has incorporated the Per-Title Encoding algorithm and three-pass encoding technology within the Per-Title Ladder Benchmark Tool to achieve optimal encoding configuration.

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